War Studies Primer™
An Introductory Course on the Study of War

Michael P. D'Alessandro, M.D.
michael.patrick.dalessandro at gmail dot com

Version: 2024

Updated at the start of each year, look for the latest version at:
www.warstudiesprimer.org

Table of Contents

Table of Contents

Dedication

- **To my parents, who encouraged my interests as a child…**

- **To my wife, who encourages these interests as an adult…**

- **To my children, who are acquiring the same interests as their father…with my encouragement…**

- **And to members of the US military past, present, and future: Thank you for your service**

Inspirations

- **General Magnus (Buddy) Marks**

User's Manual

- **Stop! Before reading any further make sure you have the latest version of this course, which can be downloaded at http://www.warstudiesprimer.org**

- **The initial version of this course was published in 2008**

- **An updated version of this course is published each January**

- **If you wish to print this course for viewing on paper, print it as "Handouts" with 6 slides per page to save on paper**

- **If you wish to view this course as an eBook, download the 1 on 1 PDF version**

"Excellence is never an accident. It is always the result of high intention, sincere effort, and intelligent execution; it represents the wise choice of many alternatives - choice, not chance, determines your destiny."

- Aristotle

Topic 1

In the Beginning...

Song

As I walk through this wicked world
Searching for light in the darkness of insanity
I ask myself is all hope lost?
Is there only pain and hatred and misery?

And each time I feel like this inside
There's one thing I wanna know
What's so funny about peace, love and understanding
What's so funny about peace, love and understanding
- Nick Lowe, What's So Funny About Peace, Love and Understanding?

Thematic Quote

"In the beginning, God created the heaven and the earth; and the earth was without form and void, and darkness was upon the face of the deep; and the spirit of God moved upon the face of the waters.

And God said, "Let there be light," and there was light.

And God saw the light, that it was good…"

- Book of Genesis

…and ever since then, man has been at war…

The Painting

Losses of the French Army in the Russian Campaign 1812-1813

   - Charles Joseph Minard

   (Collections de l'Ecole des Ponts, Champs-sur-Marne, France)

[Physical hardships more devastating than battles: 422,000 soldiers go in to Russia; 10,000 return]

The Question

Is war the natural state of man?

Why is this course relevant and important?

Why Study War?

"War is a matter of vital importance to the State; the province of life or death; the road to survival or ruin. It is mandatory that it be thoroughly studied…"

- Sun Tzu

"War shapes culture, history, and souls"

- Rick Atkinson

Why Study War?

"War makes headlines and history books. It has shaped the international system, prompted social change and inspired literature, art, and music. It engenders some of the most intense as well as the most brutal human experiences and it raises the fundamental questions of human ethics."

- Sir Lawrence Freedman

"Compared to war, all other forms of human endeavor shrink to insignificance"

- General George S. Patton, Jr.

Why Study War?

"The good offices done by one nation to its neighbor...would afford a very ample and very pleasing subject for history. But, alas! all the history of all times, concerning all nations, does not afford matter enough to fill ten pages...War is the matter which fills all history…"

- Edmund Burke

Why Study War?

- ## What is war?
    - ### War is organized armed conflict. Virtually every human society, past and present, makes war.

- ## Why does war matter to Canadians?
    - ### War has shaped Canada and Canadians for at least 5,000 years.

- Canadian War Museum

Man is a Competitor - a Warrior

"In all of recorded human history, there have only been 29 years when there was not a war occurring somewhere"

- Will Durant, historian

"In over 3,000 years of recorded history, only 268 years have been without major wars"

- Arnold Ludwig, King of the Mountain

"Homo sapiens should be renamed homo furens, man the fighter"

- Jay Glenn Gray

Health is Dependent on War

- **90% of variance in illness and premature death is related to factors other than access to medical treatment**
  - **50% = Behavioral - Diet / Nutrition / Exercise**
  - **25% = Environmental - Presence or absence of war, sanitation, toxins**
  - **15% = Genetic**
  - **10% = Access to medical treatment**
    - **Immunization mainly**
    - **Your physician is almost inconsequential**
      - **Unless you live in the western world and are susceptible to ills of affluence / lifestyle**

- MHS 2025 - Toward a New Enterprise, Section 4 page 2

Focused Case Study - Iraq 2003

"The future is unknowable."

- Donald Rumsfeld, early 2003

"Mission accomplished!"

- George HW Bush, May 1, 2003

"Those who cannot remember the past are condemned to repeat it."

- George Santayana

"History does not repeat itself, but it often rhymes"

- Mark Twain, author

Focused Case Study - Iraq 2003

- **August 1990**
  - **Iraq invades Kuwait / Operation Desert Shield - defense of Saudi Arabia**
- **January - February 1991**
  - **Operation Desert Storm - liberation of Kuwait**
- **March 1991 - March 2003 / (September 2002 - March 2003)**
  - **No fly zone enforcement - preparation of battlefield**
- **March 20, 2003**
  - **Ground combat operations begin**
- **April 9, 2003**
  - **Baghdad falls**
- **May 1, 2003**
  - **End of major combat operations**
- **~ June 2003**
  - **Insurgency begins**
- **June 30, 2004**
  - **Power returned to Iraqi government**
- **2007-2008**
  - **The Surge / Insurgency ends**
- **2011**
  - **US troops leave Iraq**
- **2014**
  - **ISIS captures large piece of Iraq - declares caliphate**
- **?**
  - **Peaceful and prosperous Iraq**

Why did it have to happen this way?

Focused Case Study - Iraq 1920

"…not to take the first step without considering the last"

- Clausewitz

"To win victory is easy; to preserve its fruits, difficult"

- Sun Tzu

Focused Case Study - Iraq 1920

- **Who had invaded Iraq previously?**
  - **The Persians, the Greeks, the Romans, the British in 1914, the British in 1941**

"Our armies do not come into your cities and lands as conquerors or enemies, but as liberators."

- General Frederick Stanley Maude, 1917 in Iraq

- **…but by 1920 there was a revolt against the British**

Focused Case Study - Iraq 1920

- **British invade Iraq November 1914**
  - **Seize Basra first**
  - **Advance towards Baghdad**
  - **Retreat to Kut and surrounded, British surrender in April 1916**

- John Lee Anderson, Invasions, New Yorker, March 24, 2003

Focused Case Study - Iraq 1920

- **March 1917**
  - **British troops sweep from south of Iraq to Baghdad in weeks**
    - **Regime change against Ottoman Turks**
  - **British government disclaimed desire to rule Iraq directly**
    - **Hastened to install legitimate government**
  - **Imposing law and order more difficult than military victory**

- Niall Ferguson, Hegemony or Empire?, Foreign Affairs, Sept/Oct 2003
- Niall Ferguson, The Last Iraqi Insurgency, New York Times, April 18, 2004
- Niall Ferguson, Success Requires Patience, Washington Post, May 3, 2004

Focused Case Study - Iraq 1920

- ## May 1920
  - ### Full fledged revolt
    - **After referendum on Iraq's future + announcement Iraq would be League of Nations mandate under British trusteeship**
    - **150,000 British troops facing undisciplined militias**
    - **Insurrection had religious origins ~ soon involved everyone**
    - **Rebels attacked British lines of communication - rail + telegraph**
    - **British troops + civilians besieged, British bodies mutilated**

- Niall Ferguson, Hegemony or Empire?, Foreign Affairs, Sept/Oct 2003
- Niall Ferguson, The Last Iraqi Insurgency, New York Times, April 18, 2004
- Niall Ferguson, Success Requires Patience, Washington Post, May 3, 2004

Focused Case Study - Iraq 1920

- **August 1920**
  - **British request chemical weapons - denied**
- **December 1920**
  - **Put down rebellion with aerial bombardment + village burning**
  - **Despite technological superiority 2,000 dead+wounded**
- **1921 - Pro-British monarch installed**
- **1922 - Handed sovereignty over to monarch**
- **1932 - Iraq achieves independence**
- **1955 - British troops leave**

- Niall Ferguson, Hegemony or Empire?, Foreign Affairs, Sept/Oct 2003
- Niall Ferguson, The Last Iraqi Insurgency, New York Times, April 18, 2004
- Niall Ferguson, Success Requires Patience, Washington Post, May 3, 2004

Focused Case Study - Iraq 1920

"Sir, I am deeply concerned about Iraq. The task you have given me is becoming really impossible ... if they (Sunni and Shiite) are not prepared to urge us to stay and to co-operate in every manner I would actually clear out. ... At present we are paying eight millions a year for the privilege of living on an ungrateful volcano out of which we are in no circumstances to get anything worth having."

- Winston Churchill to British Prime Minister David Lloyd George, Sept. 1, 1922

Focused Case Study - Iraq 1920

- **What did we learn from them?**

  "The Arab is generally intelligent, quick and impressionable...and is lacking in the power of cooperation...He has a natural bent for intrigue...and is used to continual warfare of the guerilla type."

  - The Campaign in Mesopotamia, 1916

  "Liberator became occupier, occupier became oppressor became someone whose throat needed cutting"

  - Rick Atkinson, In the Company of Soldiers

Focused Case Study - Iraq 1941

- **Iraq wants to ally with Germany**
- **Britain invades, seizes Basra first, drives on Baghdad**
- **British outnumbered 3:1, face superior German airpower, nonetheless they conquer Iraq in 4 weeks**

- James F. Dunnigan, The Last Time (1941) Iraq Was Invaded, StrategyPage, Nov 11, 2002

Focused Case Study - Iraq 1943

- **Instructions For American Servicemen in Iraq During World War II**
  - 44 page guide to Iraqi culture, language, and practical advice written in 1943 to aid US soldiers going to Iraq to make sure it did not fall under German influence
  - Purpose was to teach Americans on how to deal with Iraqis, foster good will with them, and avoid pitfalls

    "Talk Arabic if you can to the people. No matter how badly you do it, they will like it."

    "Treat an Iraqi and his family with honor and respect, and you will have a strong ally, treat him with disrespect and you will create an unyielding enemy."

    "That tall man in the flowing robe you are going to see soon, with the whiskers and the long hair, is a first-class fighting man, highly skilled in guerilla warfare. Few fighters in any country, in fact, excel him in that kind of situation. If he is your friend, he can be a staunch and valuable ally. If he should happen to be your enemy - watch out!"

  - Why wasn't this dusted off and passed out in 2003?

- Scott Horton, Instructions for Servicemen in Iraq, Harpers, Aug 2007
- Lester W. Grau, Book Review, US Army Foreign Military Studies Office

British Expectations for Post-War Iraq

- **Iraq: Conditions for Military Action**
  - **Briefing paper prepared July 21, 2002 for Tony Blair**
  - **States British view of post-war occupation:**
    "A post-war occupation of Iraq could lead to a protracted and costly nation-building exercise"
  - **States US view of post-war occupation:**
    "US military plans are virtually silent on this point"
    "Little thought" given to "the aftermath and how to shape it"
    - Walter Pincus, Memo: US Lacked Full Postwar Iraq Plan, Washington Post, June 12, 2005

American Expectation for Post-War Iraq

"He's (President George Bush) the man at the top. And what happened in Iraq is largely a consequence of a failure of his leadership. He's the one who failed to ask what would happen once we got to Baghdad. I tell a story in the book that illustrates the lack of thinking about the post-war. Less than two months before the invasion, three Iraqi Americans met with President Bush in the Oval Office. And naturally, the discussion turned to what was Iraq going to be like after Saddam Hussein was gone? And, of course, they began to talk about Sunnis and Shiites. And it became apparent to them that the president was unfamiliar with these terms. Now, I don't tell that story to say that he was ignorant, but rather, it reflects the lack of top level thinking about post-war Iraq, the lack of top level decision-making."

- Peter Galbraith, in an interview about his book, "The End of Iraq: How American Incompetence Created a War Without End" on C-SPAN Q and A, Aug 27, 2006

American Expectation for Post-War Iraq

"And after all, if you don't know that Islam is divided into two branches, you cannot possibly anticipate that one of the consequences of the invasion would be a civil war between two groups that you did not know exist. Or that Iran - Shiite Iran - would exercise a lot of influence in Shiite-majority Iraq. He also - he failed to make the most fundamental decisions, like whether we should turn power over to Iraqis or whether we should run the country ourselves. The result is that the competing factions in his administration pursued both strategies at the same time. Now, you can argue that one course or the other was correct. You cannot argue that doing both at the same time made sense."

- Peter Galbraith, in an interview about his book, "The End of Iraq: How American Incompetence Created a War Without End" on C-SPAN Q and A, Aug 27, 2006

American Expectations For Post-War Iraq

"This whole venture was supposed to be one that would be carried out with relatively modest costs in terms of American lives and American treasure. I've heard a former American diplomat refer to this as the ding-dong-the-witch-is-dead school of regime change: We go in, we kill the wicked witch, the munchkins jump up, they're grateful, and then we get in the hot-air balloon and we're out of there."

- Michael Gordon

American Expectations For Post-War Iraq

"When we were asked if we had enough troops to do what we needed in Iraq after the war, I said yes, but that included Iraqi troops. But one of the first things the CPA did was to disband the Iraqi army. We ended up fighting those same men in Anbar province for four years. The cream of Saddam's army came from Anbar.

The entire premise had been to rely on the Iraqi army after the war. A change of regime required the military to maintain stability. It was a deep error to disband.

During the war, we dropped leaflets and sent out messages to the Iraqi army telling them to go home as they would play a role in the future. And we saw that as we headed north, a steady stream of Iraqi men going home, doing what we asked them to do.

So when the army was disbanded, we were seen to have lied, to be occupiers, not liberators.

It's a travesty that we didn't take better advantage of the institution of the armed forces."

- General James Conway, commander of the US Marines and British forces that invaded Iraq from Kuwait in 2003

Phases of Combat

- **Phase I - Preparation for combat**
- **Phase II - Initial operations**
- **Phase III - Combat**
- **Phase IV - Stability and support operations**

- **There was no Phase IV plan for occupying Iraq**
- **…Phase IV plan was finally produced in Nov. 2003**
  - **Major Isaiah Wilson III, historian for Army's Operation Iraqi Freedom Study Group**

- Thomas Ricks, Army Historian Cites Lack of Postwar Plan, Washington Post, Dec. 25, 2004

Censoring the Truth - What Went Wrong - US

- **2005 RAND study "Rebuilding Iraq"**
  - **Identified problems with every organization that had role in planning war**
    - **President + National Security Advisor - failed to resolve differences among rival agencies**
    - **Defense Department - lack of capacity for civilian reconstruction planning + execution**
    - **State Department - future of Iraq study identified important issues but did not provide actionable plan**
    - **CENTCOM CINC - had fundamental misunderstanding of what military needed to do to secure postwar Iraq**
  - **General lack of coordination - no single national plan developed that integrated humanitarian assistance, reconstruction, governance, infrastructure development, postwar security**
  - **Poor planning led to lack of security + essential services which strengthened insurgency**
- **Release of study censored by Army ~ Released July 2008**

- Michael Gordon, Army Buried Study Faulting Iraq Planning, New York Times, Feb. 11, 2008

Confirming What Went Wrong - US

- **On Point II: Transition to the New Campaign**
  - **US Army Combined Arms Center Fort Leavenworth**
  - **Problems identified**
    - General Tommy Franks did not see postwar Iraq as his long term responsibility
    - Not enough planning / training / troops for Stage IV
    - Understaffed + inexperienced Army headquarters
    - Assumptions that Iraq's ministries + institutions would continue to function after fall of Saddam
    - Disbanding of Iraqi Army + De-Baathification
    - "The DOD and the Army lacked a coherent plan to translate the rapid, narrow-front attack [on Baghdad] . . . into strategic success. Soldiers and commanders at nearly every level did not know what was expected of them once Saddam Hussein was deposed and his military forces destroyed."
    - "The military means employed were sufficient to destroy the Saddam regime; they were not sufficient to replace it with the type of nation-state the United States wished to see in its place."
  - Michael Gordon, Occupation Plan for Iraq Faulted in Army History, New York Times, June 29, 2008

What Went Wrong - UK

- **British Army study - An Analysis of Operation Telic**
  - **Widespread planning failures in post war phase led to peace in Iraq being lost in first 100 days of occupation**
    - **Lack of planning - especially on non-military side**
      - **Due to having to work on ideologically driven US timetable**
      - **Due to restrictive operational security which limited who in UK government could work on planning**
    - **Lack of resources - human (formally staff-trained officers) + financial - for post-war situation**

- Sean Rayment, Iraq War Was Badly Planned Says Army, Daily Telegraph, Nov. 4, 2007

Admittance of Guilt

"We have made a lot of decisions in this period of time. Some of them have been good, some of them have not been good, some of them have been bad decisions, I am sure."

"We didn't have the right skills, the right capacity, to deal with a reconstruction effort of this kind."

- Condoleezza Rice at Secretary of State Confirmation Hearings, Jan. 19, 2005

- Saul Hudson + Arshad Mohammed, Rice Acknowledges Bad Iraq Decisions, Reuters, Jan. 19, 2005

Zinni on Operation Iraqi Freedom

"In the lead-up to the Iraq war and its later conduct, I saw, at a minimum, true dereliction, negligence, and irresponsibility; at worst, lying, incompetence, and corruption.

False rationales presented as a justification; a flawed strategy; lack of planning; the unnecessary alienation of our allies; the underestimation of the task; the unnecessary distraction from real threats; and the unbearable strain dumped on our overstretched military…"

- Anthony Zinni, Battle Ready, p. 426

Zinni On Operation Iraqi Freedom

"I think there was dereliction in insufficient forces being put on the ground and fully understanding the military dimensions of the plan. I think there was dereliction in lack of planning. The president is owed the finest strategic thinking. He is owed the finest operational planning. He is owed the finest tactical execution on the ground. … He got the latter. He didn't get the first two."

- General Anthony Zinni, 60 Minutes, May 21, 2004

Why Iraq Went So Badly - View from Chairman Joint Chiefs of Staff 1997-2001

- **Rumsfeld bypassed the Joint Chiefs of Staff and worked directly with General Franks. The effect was going to war without the advice of your top military advisors.**

- **Rumsfeld + Franks' war plan was "a fiasco." (p. 479)**

- **There was no reason to go war against Iraq**

  - **"The fact is that we had Iraq contained and they were not a threat." (p. 419)**

  - **"There was absolutely no link between him [Saddam] and 9/11." (p. 474)**

"President Bush and his team got us enmeshed in Iraq based on extraordinarily poor intelligence and a series of lies purporting that we had to protect America from Saddam's evil empire because it posed such a threat to our national security." (pp. 474-475)

"Spinning the possible possession of Weapons of Mass destruction as a threat to the United States in the way they did is, in my opinion, tantamount to intentionally deceiving the American people." (p. 488)

- Hugh Shelton + Ron Levinson + Malcolm McConnell, Without Hesitation The Odyssey of an American Warrior, 2010

Why Iraq Went So Badly

"After almost a decade of war, it is America's civilian leaders who have the most to learn about setting realistic goals, about the capabilities of the different instruments of national power and about the limitations of external actors in foreign lands. America's experiences in Iraq suggest that it is critical to have an overall strategy, to broker an inclusive peace settlement, to build long-term relationships, to have patience and to work regionally and with allies. Furthermore, U.S. military leaders could learn to respectfully tell their civilian masters that counterinsurgency tactics cannot bring sustainable success in the absence of an overall political solution."

- Emma Sky, Iraq in Hindsight: Views on the U.S. Withdrawal, Center For A New American Security, Dec. 14, 2012

Tell Me How This Ends

"In September, 2010, with the Iraqi government stalled by inconclusive parliamentary elections, a group of political leaders was invited to the Iranian holy city of Qom for a celebration of the Eid al Fitr holiday. Once there, they were quietly summoned to a meeting of another sort. Their host was Qassem Suleimani, the head of the Quds Force, the Iranian paramilitary corps. For nearly a decade, Suleimani had loomed over Iraq as a powerful, shadowy influence: he had flooded the country with agents, brokered political deals, and smuggled in sophisticated bombs to kill American soldiers. Iran's goals in Iraq were twofold: to bleed the Americans and to bolster the power of its Shiite clients.

In parliamentary elections the previous March, Maliki's Shiite Islamist alliance, the State of Law, had suffered an embarrassing loss. The greatest share of votes went to a secular, pro-Western coalition called Iraqiya, led by Ayad Allawi, a persistent enemy of the Iranians. "These were election results we could only have dreamed of," a former American diplomat told me. "The surge had worked. The war was winding down. And, for the first time in the history of the Arab world, a secular, Western-leaning alliance won a free and fair election."

But even though Allawi's group had won the most votes, it had not captured a majority, leaving both him and Maliki scrambling for coalition partners. And despite the gratifying election results, American officials said, the Obama Administration concluded that backing Allawi would be too difficult if he was opposed by Shiites and by their supporters in Iran. "There was no way that the Shia were not going to provide the next Prime Minister," James Jeffrey, the American Ambassador at the time, told me. "Iraq will not work if they don't. Allawi was a goner."

- Dexter Filkins, What We Left Behind, New Yorker, April 28, 2014

Tell Me How This Ends

Shortly after the elections, an Iraqi judge, under pressure from the Prime Minister, awarded Maliki the first chance to form a government. The ruling directly contradicted the Iraqi constitution, but American officials did not contest it. "The intent of the constitution was clear, and we had the notes of the people who drafted it," Sky, the civilian adviser, said. "The Americans had already weighed in for Maliki."

But it was the meeting with Suleimani that was ultimately decisive. According to American officials, he broke the Iraqi deadlock by leaning on Sadr to support Maliki, in exchange for control of several government ministries. Suleimani's conditions for the new government were sweeping. Maliki agreed to make Jalal Talabani, the pro-Iranian Kurdish leader, the new President, and to neutralize the Iraqi National Intelligence Service, which was backed by the C.I.A. Most dramatic, he agreed to expel all American forces from the country by the end of 2011.

The U.S. obtained a transcript of the meeting, and knew the exact terms of the agreement. Yet it decided not to contest Iran's interference. At a meeting of the National Security Council a month later, the White House signed off on the new regime. Officials who had spent much of the previous decade trying to secure American interests in the country were outraged. "We lost four thousand five hundred Americans only to let the Iranians dictate the outcome of the war? To result in strategic defeat?" the former American diplomat told me. "F**k that." At least one U.S. diplomat in Baghdad resigned in protest. And Ayad Allawi, the secular Iraqi leader who captured the most votes, was deeply embittered. "I needed American support," he told me last summer. "But they wanted to leave, and they handed the country to the Iranians. Iraq is a failed state now, an Iranian colony.""

- Dexter Filkins, What We Left Behind, New Yorker, April 28, 2014

Tell Me How This Ends

"Our debates mattered little, however, because the most powerful man in Iraq and the Middle East, Gen. Qassim Soleimani, the head of the Quds Force unit of Iran's Revolutionary Guard Corps, was about to resolve the crisis for us. Within days of Biden's visit to Baghdad, Soleimani summoned Iraq's leaders to Tehran. Beholden to him after decades of receiving Iran's cash and support, the Iraqis recognized that U.S. influence in Iraq was waning as Iranian influence was surging. The Americans will leave you one day, but we will always remain your neighbors, Soleimani said, according to a former Iraqi official briefed on the meeting.

After admonishing the feuding Iraqis to work together, Soleimani dictated the outcome on behalf of Iran's supreme leader: Maliki would remain premier; Jalal Talabani, a legendary Kurdish guerilla with decades-long ties to Iran, would remain president; and, most important, the American military would be made to leave at the end of 2011. Those Iraqi leaders who cooperated, Soleimani said, would continue to benefit from Iran's political cover and cash payments, but those who defied the will of the Islamic Republic would suffer the most dire of consequences."

- Ali Khedery, Why We Stuck With Maliki - and Lost Iraq, Washington Post, July 3, 2014

Light at the End of the Tunnel?

- **US good at breaking things, not so good at putting them back together**
  - **Needs equivalent of British Colonial Office**
    - **Niall Ferguson, Colossus, April 2004**
  - **Needs System Administrator force to do reconstruction**
    - **Thomas P.M. Barnett, The Pentagon's New Map, April 2004**
  - **Stabilization and reconstruction mission must become core competency of Departments of Defense and State**
    - **Defense Science Board, Transition to and From Hostilities, December 2004**
  - **Newly created Office of the Coordinator for Reconstruction and Stabilization at Dept. of State, 2005**

- David Ignatius, A Quiet Transformation, Washington Post, May 18, 2005

A Learning Organization?

- **US Army FM 3.0 Operations (2007) elevates mission of stabilizing war-torn nations, making it equal in importance to defeating adversaries on the battlefield**

  "Army doctrine now equally weights tasks dealing with the population - stability or civil support - with those related to offensive and defensive operations…Winning battles and engagements is important but alone is not sufficient. Shaping the civil situation is just as important to success."

  - Michael Gordon, After Hard-Won Lessons, Army Doctrine Revised, New York Times, Feb. 8, 2008

Focused Case Study - The Learning Army

- **US Army is losing in Iraq in 2004-2006 and needs to write a new counterinsurgency doctrine**

- **Take most successful commander in Iraq to date - General Petraeus as 101st Airborne Division commander in 2003-2004 - and put him at Fort Leavenworth's Command and General Staff College in charge of writing new counterinsurgency doctrine**

    - **Included in this process were other innovative commanders in Iraq (Colonel H.R. McMaster in Tal Afar, Lt. Col John Nagl) as well as non-traditional contributors (academics)**

    - **End result is Field Manual 3-24 Counterinsurgency**

- **Then task General Petraeus to implement the new doctrine as the Surge as commander of Multi-National Force from 2007-2008 which resulted in a military success but no political success**

    - **Thomas P.M. Barnett, Monks of War, Esquire, March 2006**

    - **PBS Frontline, Endgame, June 19, 2007**

6 Components of Surge in Iraq in 2007-2008

- **Sunni Awakening and Reconciliation - to turn ordinary Sunnis against al Qaeda**

- **Targeted special operations to capture or kill key terrorists**

- **Development of Iraqi security forces into effective coalition partners**

- **Civilian components that focused on such projects as increasing electricity and oil production;**

- **Detainee operations and rule-of-law initiatives to prevent hard-core bad guys from using detention camps as "terrorist universities"**

- **Iraqi political component and strategic communications designed to break the deadlock between Iraq's political factions while also bolstering support for the war effort both in Iraq and back home.**

- Max Boot, Doubling Down on Iraq, Wall Street Journal, Nov 2-3, 2013

Rise of ISIS

"The story of ISIS teaches the same basic lesson that emerged from America's other failures in the Middle East over the last decade: Attempts by the United States or Islamist rebels to topple authoritarian regimes - in Iraq, Libya, and now Syria - created power vacuums. This empty political space will be filled extremists unless the United States and its allies build strong local forces that can suppress terrorist groups and warlords both. When the US creates such local forces, it must be persistent. If it withdraws from these efforts, as America did in Iraq in 2011, it invites mayhem. Halfway American intervention has produced nothing but trouble. Rebels have gotten enough support to continue fighting, but not enough to win."

- David Ignatius, How ISIS Spread in the Middle East, The Atlantic, Oct. 29, 2015

Three Age Old Truths About War

- "Our record of learning from previous experience is poor; one reason is that we apply history simplistically, or ignore it altogether, as a result of wishful thinking that makes the future appear easier and fundamentally different from the past…

- The best way to guard against a new version of wishful thinking is to understand three age-old truths about war and how our experiences in Afghanistan and Iraq validated their importance.

- First, war is political…
    - The lesson: Be skeptical of concepts that divorce war from its political nature, particularly those that promise fast, cheap victory through technology

- Second, war is human…
    - The hard-learned lesson: Defense concepts must consider social, economic and historical factors that constitute the human dimension of war.

- Third, war is uncertain precisely because it is political and human…
    - What we learned: American forces must cope with the political and human dynamics of war in complex uncertain environments. Wars like those in Afghanistan and Iraq cannot be waged remotely."

- H.R. McMaster, The Pipe Dream of Easy War, New York Times, July 21, 2013

Are We Really Learning From Our Mistakes?

"After the Vietnam War, the U.S. Army soberly examined where it had fallen short. That critical appraisal laid the groundwork for the military's extraordinary rebuilding in the 1970's and 1980's. Today, after more than a decade of war in Afghanistan and Iraq, no such intensive reviews are underway, at least to my knowledge - and I have been covering the US military for 22 years…

This is worrisome for several reasons. The military continues largely unchanged despite many shaky performances by top leaders. That is unprofessional. It doesn't encourage adaptive leaders to rise to the top, as they find and implement changes in response to the failures of the past decade. And it enables a "stab in the back" narrative to emerge as generals ignore their missteps and instead blame civilian leaders for the failures in Iraq and Afghanistan."

- Thomas E. Ricks, Can the Military Learn From Its Mistakes? Washington Post, Oct 25, 2013

US Army Final Lessons Learned on Iraq - 1

"...Phase IV - and not Phase II - was the decisive phase of military operations in Iraq, but that the planning time, resources and personnel allocated for Phase III far exceeded those for Phase IV.

…

The new plans that U.S. Central Command (CENTCOM) and its subordinate units developed for Iraq were emblematic of 1990s-era military doctrine and practice..and minimized the importance of any stability or peacekeeping activities that might take place at the conclusion of major combat.

…

The plans largely discounted Saddam Hussein's extensive paramilitary apparatus, tribal patronage system, and intra-Iraqi dynamics, all of which would play crucial roles in the ensuring instability and insurgency

- Joel Rayburn and Frank Sobchak, The US Army in the Iraq War Volume 1: Invasion, Insurgency, Civil War, 2003-2006

US Army Final Lessons Learned on Iraq - 2

At the same time, CENTCOM, Coalition Forces Land Component Command (CFLCC), and V Corps, consumed by the requirements of planning for the invasion and working under the assumption that the Iraqi Army would be available to help secure and stabilize post-regime Iraq, did not prepare realistic plans for securing the country with their comparatively small ground force footprint.

…

CPA Orders 1 and 2 thwarted stabilization plans by effectively removing the Iraqi civil servants and military personnel that CENTCOM had intended to use for stabili-zation and reconstruction operations.

…

...in invading Iraq, collapsing the Iraqi state, and leaving a power vacuum, the U.S.-led coalition had unleashed a civil war among the many Iraqi factions and created a maelstrom in which the regional powers were compelled to intervene in order to promote their proxies and expand or secure their interests."

- Joel Rayburn and Frank Sobchak, The US Army in the Iraq War Volume 1: Invasion, Insurgency, Civil War 2003-2006

US Army Final Lessons Learned on Iraq - 3

"At the time of this project's completion in 2018, an emboldened and expansionist Iran appears to be the only victor."

- Joel Rayburn and Frank Sobchak, The US Army in the Iraq War Volume 2: Surge and Withdrawal 2007-2011

The Non-Learning Organization-1

"It amazes me that the US military really has walked away from both these wars (in Iraq and Afghanistan) saying we did pretty good. Their bottom line is we did our job but we were failed by our civilian leadership, or more discretely, the rest of the government didn't show up, which is code for the civilians let us down. It bothers me, the current Secretary of Defense, Ash Carter…in all of his speeches Ash Carter says we have the finest military instrument the world has ever known, and I think that is an utterly false statement because your military is only as good as its ability to deal with the problems it faces and just because you can crush people under your tank treads doesn't mean you can address the problems. We have a military that is very good at fighting battles, it's not very good at winning wars and it doesn't think that is its job anymore. It doesn't know how to think about winning wars and it is not willing to look back soberly and coldly over its mistakes in the last 15 years. Instead it is kind of hiding in the basement and focusing on tactics. We always talk about strategic corporals, how a corporal can have a real strategic effect. But we don't talk about the fact we have tactical generals, which is I believe a term Peter Singer came up with. We have a military that is not a very adaptive instrument that always talks about readiness. Well that is an industrial era term. You need to be more adaptive to problems than you need to be ready for problems, yet they still talk about readiness every damn day.

- Thomas Ricks, Foreign Policy Podcast, Oct. 20, 2015

The Non-Learning Organization-2

Everybody understands the civilians screwed up. But there is not a lot of discussion of how the military screwed up. I actually think the best way to understand this is psychologically. Leaders, when they fail, regress to the last level at which they had success. In Vietnam you saw this in the phenomenon of the squad leader in the sky, the generals and the battalion and brigade commanders flying over units in combat, hovering there in helicopters, radioing down orders, because that is at least what they knew how to do. They didn't know how to run a war successfully in Vietnam but they did know how to run a firefight. So I think there is a reason that you see top military leaders tiptoe backwards from strategy back down to the level of operations and even tactics, because they are comfortable in that area.

The great danger of bad civil-military relations is not a military coup, that's just false. The great danger of poor civil-military relations is that you have poor strategy, poor planning, poor execution and poor use of the military, and that's what we've seen a lot of over the last 15 years. Civilian leadership and the executive that doesn't know how to talk about strategy that's matched by generals that can't or won't talk about strategy and a Congress that is simply not interested in proper oversight.

I actually think the military does respond well when it is lead by serious people asking hard questions but they don't get enough of it and I think that's one reason they tend to resent and distrust both the White House and the Congress."

- Thomas Ricks, Foreign Policy Podcast, Oct. 20, 2015

Case Study Summary - Libya 2011 (Learning From Our Mistakes)

- **Goal**
  - **Rebels - Repeat Arab Spring 2011 Uprising in Libya**
  - **Gaddafi - Prevent this by declaring war on his people**
  - **UN - Passes resolution authorizing use of force (including no-fly zone) to protect civilians**
- **Center of Gravity (Strategy)**
  - **Libyan Dictator Colonel Gaddafi**
- **Equipment ~ Training ~ Leadership**
  - **Initially non-existent amongst rebels**
- **Morale**
  - **Initially high amongst rebels**

- David Ignatius, The Libya Liquidation Strategy, Washington Post, April 1, 2011

- Sean Rayment, How The Special Forces Brought Gaddafi To His Knees, Daily Telegraph, August 28, 2011

- James Landale, How UK Unit Starved Gaddafi Of Fuel, BBC, August 31, 2011

- Amy McCullough, The Libya Mission, Air Force Magazine, August 2011

Case Study Summary - Libya 2011 (Learning From Our Mistakes)

- **Tactics**
  - **Cut off his funds to cut off his patronage**
    - **Seize funds outside Libya (old cash)**
    - **Block oil exports to prevent him acquiring new cash**
  - **Deprive him of mobility by blocking oil shipments to his forces**
  - **Deprive his military of heavy weapons by striking them from the air**
  - **Form nucleus of rebel army by providing weapons / ammunition, training, communications, intelligence / surveillance / reconnaissance, advice, payroll**
- **Intangibles ~ Mistakes**
  - **Begins as humanitarian mission that escalates into regime change**
  - **Challenge will be creating a stable successor government**

- David Ignatius, The Libya Liquidation Strategy, Washington Post, April 1, 2011
- Sean Rayment, How The Special Forces Brought Gaddafi To His Knees, Daily Telegraph, August 28, 2011
- James Landale, How UK Unit Starved Gaddafi Of Fuel, BBC, August 31, 2011
- Amy McCullough, The Libya Mission, Air Force Magazine, August 2011

Case Study Summary - Libya 2011 (Learning From Our Mistakes)

- **Outcome**
  - **New model for West - true coalition with America playing a coordinating rather than leading role and insisting of legitimacy through UN + true burden sharing with allies**
  - **No American casualties**
  - **Allows locals to own their own revolution**
  - **Will Arab history repeat itself?**

      "When we achieved and the new world dawned, the old men came out again and took our victory to remake in the likeness of the former world they knew. Youth could win but had not learned to keep: and was pitiably weak against age. We stammered that we had worked for a new heaven and a new earth, and they thanked us kindly and made their peace."

      - T.E. Lawrence reflecting upon Arab revolt against Ottomans

- David Ignatius, The Libya Liquidation Strategy, Washington Post, April 1, 2011

- Sean Rayment, How The Special Forces Brought Gaddafi To His Knees, Daily Telegraph, August 28, 2011

- James Landale, How UK Unit Starved Gaddafi Of Fuel, BBC, August 31, 2011

- Amy McCullough, The Libya Mission, Air Force Magazine, August 2011

Following Up 4 Years After Arab Spring in Libya

"There is no overstating the chaos of post-Qaddafi Libya. Two competing governments claim legitimacy. Armed militias roam the streets. The electricity is frequently out of service, and most business is at a standstill; revenues from oil, the country's greatest asset, have dwindled by more than ninety per cent. Some three thousand people have been killed by fighting in the past year, and nearly a third of the country's population has fled across the border to Tunisia. What has followed the downfall of a tyrant - a downfall encouraged by NATO air strikes - is the tyranny of a dangerous and pervasive instability."

- Jon Lee Anderson, The Unravelling, New Yorker, Feb. 23, 2015

Following Up 4 Years After Arab Spring in Libya

- **October 20, 2011 - Qaddafi killed**
- **After debacles of Iraq + Afghanistan, West wants to do nation-building lite in Libya**
- **September 11, 2012 - Extremists set fire to US Embassy in Benghazi + kill US Ambassador + 3 other Americans**
  - **US then winds down diplomatic presence + abandons its role in international efforts to rebuild Libya + foster democracy**
  - **Extremists wanted to get West out and this act helped them do so, thus allowing them to acquire greater power**

- Jon Lee Anderson, The Unravelling, New Yorker, Feb. 23, 2015

Following Up 4 Years After Arab Spring in Libya

"You get a UN resolution for humanitarian intervention, you get rid of Qaddafi, you don't put boots on the ground, you get regional players like Turkey and Qatar to sign generous checks, and you step back. You imagine that it'll be tricky, but no one could imagine it would be this bad."

- Rory Stewart, British M.P.

- **Turkey + Qatar support Libya Dawn which includes extremists**

- **Egypt, Saudi Arabia, United Arab Emirates support General Haftar**

- Jon Lee Anderson, The Unravelling, New Yorker, Feb. 23, 2015

Following Up 4 Years After Arab Spring in Libya

- **Three failures led to the present state of Libya**
  - **Lack of a single national-security apparatus, replaced by militias**
  - **Real terrorist problem which has gotten much worse**
  - **Proliferation of arms**

(Libya is becoming) "Somalia on the Mediterranean"

- Jonathan Powell, British special envoy

- Jon Lee Anderson, The Unravelling, New Yorker, Feb. 23, 2015

The Forever War

- **In one week, 15 years after 9/11, US warplanes conducted air strikes in 6 countries:**
  - **Iraq + Syria - 45 strikes against Islamic State**
  - **Libya - Strikes against Islamic State**
  - **Yemen - Strike against al-Qaeda in the Arabian Peninsula**
  - **Somalia - 2 strikes against al-Shabab**
  - **Afghanistan - Several strikes against Taliban + Islamic State**

- **What have we learnt?**

- Missy Ryan, A Reminder of the Permanent Wars: Dozens of US Airstrikes in Six Countries, Washington Post, Sep. 8, 2016

Why Study History?

"We have a responsibility to own the army jointly. It is not President Bush's army, anymore than it was President Clinton's army. It is our army, and one of the acts of citizenship should be to take a vested interest in the fate of our army. We hang with it or we hang together without it."

- Rick Atkinson

Why Study History?

"As a nation, I think it is immoral to wage war in a democracy and not pay attention…and I worry that we're being morally reckless in the way we're carrying out war these days and that worries me a lot."

- Tom Ricks

Why Study History?

"You need to know about this battle because you are citizens of this republic, because you can vote, and because some of you influence or make policy. Governments and militaries are run by readers like you. Though stupidity and arrogance will always be with us, it is reasonable to hope that the more people who read and learn from books such as "Huế 1968," the more will lend their weight in the war against folly.

More generally, because you are part of humanity, you need to know the heights and depths that humanity can reach and that each of us can reach individually. To understand what it is to be human, you must understand war, which is unique to our species. In "Huế 1968," we read about humanity placed in a crucible, out of which comes both refined steel and slag. Here the best and worst of human behavior is exposed in glaring light."

- Karl Marlantes, The Bloody Pivot, Wall Street Journal, Jun. 2, 2017

Why Study History?

"A popular government without popular information, or the means of acquiring it, is but a prologue to a farce or a tragedy, or perhaps both. Knowledge will forever govern ignorance, and a people who mean to be their own governors must arm themselves with the power which knowledge gives."

- James Madison, from a letter to W. T. Barry, August 4, 1822

Why Study History

"This country spends at least $500 billion a year on defense…If we are to have civilian control of the military in our American system of constitutional democracy, we need to explore ways and means of enabling civilians to gain information on military affairs."

- Col. James N. Pritzker

Why Study History?

"Reading history, to me, was far more than a romantic adventure. It was solid instruction and wise teaching which I somehow felt that I wanted and needed."

- Harry S. Truman

"The farther backward you can look the farther forward you are likely to see"

- Winston Churchill

Why Study History?

"It is the historian's function, not to make us clever for the next time, but to make us wise forever."

- Jacob Burckhardt, historian

Applied History

"'Applied history' - an attempt to illuminate current challenges and choices by analyzing precedents and historical analogues"

"Applied historians would take a current predicament and try to identify analogues in the past. Their ultimate goal would be to find clues about what is likely to happen, then suggest possible policy interventions and assess probable consequences."

- Graham Allison + Niall Ferguson, Why the US President Needs a Council of Historical Advisors, The Atlantic, Sep. 2016

Applied History

"The present, while never repeating the past exactly, must inevitably resemble it. Hence, so must the future."

- Thucydides, historian

"The events of future history…will be of the same nature - or nearly so - as the history of the past, so long as men are men."

- Thucydides, historian

Applied History

"The longer you can look back, the farther you can look forward."

- Winston Churchill

"More than ever one should study history in order to see why nations and men succeeded and why they failed."

- Henry Kissinger, US Secretary of State

A Little Perspective - Caveat Lector

"History is what happened, in the context of what could have happened at the time"

- AJP Taylor

"Those who cannot remember the past are condemned to repeat it"

- George Santayana

- The past, "an inexhaustible storehouse of events," could be used to "prove anything or its contrary"

- Michael Howard

- "What history is - a body of knowledge that is incomplete, deeply flawed in many places, and essentially and inescapably dynamic"

- Antulio J. Echevarria, The Trouble With History, Parameters, Summer 2005

"History is a pack of lies about events that never happened told by people who weren't there"

- George Santayana

Why Study History?

"What experience and history teach is this - that nations and governments have never learned anything from history, or acted upon any lessons they might have drawn from it."

- Georg Wilhelm Friedrich Hagel, philosopher

A Little Perspective - Caveat Lector

- **History is not the past**
  - **The past is what happened**
  - **History is the historian's interpretation of what happened**
- **History is merely what "historians write"**
  - **- Michael Howard**
- **History is little more than the collective "memory of things said and done"**
  - **- Carl Becker**
- **History is like human memory - fallible + prone to selective recall**
- **One must "study the historian before studying the facts"**
  - **- E.H Carr**

- Antulio J. Echevarria, The Trouble With History, Parameters, Summer 2005

A Little Perspective - Caveat Lector

- **Military history once focused almost exclusively on military factors, overlooking the roles of culture, politics, economics**
  - **Now has broadened its vision to consider the ways in which political, social, economic forces influence people + events => War Studies**
- **Students must view the past analytically, rather than vicariously, to facilitate development of their critical thinking skills**
  - **- Antulio J. Echevarria, The Trouble With History, Parameters, Summer 2005**

What is War Studies?

- **Not military history - too narrow a definition**

- **Is multi-disciplinary study of war encompassing the artistic, diplomatic, economic, ethical, historical, legal, logistical, philosophical, political, psychological and sociological dimensions of war**

- **War Studies encompasses why wars start, how they are conducted, how they end and how they can be prevented**

- **You can't study war without studying peace, and vice versa**

What is War Studies?

"But to abstract war from the environment in which it is fought and study its technique as one would those of a game is to ignore a dimension essential to understanding, not simply of the wars themselves but of the societies which fought them. The historian who studies war, not to develop norms for action but to enlarge his understanding of the past, cannot be simply a 'military historian,' for there is literally no branch of human activity which is not to a greater or lesser extent relevant to his subject. He has to study war not only, as Hans Delbrück put it, in the framework of political history, but in the framework of economic, social and cultural history as well. War has been part of a totality of human experience, the parts of which can be understood only in relation to one another. One cannot adequately describe how wars were fought without giving some idea of what they were fought about."

- Sir Michael Howard, War in European History, pp. ix-x

Why is This Course Important and Relevant?

- **You are all participants, in one way or another, in the Long War**

Goal of This Course

- **Equip you with an intellectual toolkit for the multi-disciplinary study of war that will allow you to:**
    - **Understand war from the micro to the macro levels - from the soldier in the foxhole to the emperor and their empire**
    - **Understand the role of war in the rise and fall of civilizations**
    - **Undertake meaningful discussion and debate as your country considers going to war**
    - **Embark upon a course of lifelong learning regarding war and its role in society**
- **As a survey course, it is designed to encourage broad horizontal thinking across the discipline of war studies rather than vertical (silo) thinking**

Themes
What we are going to discuss / What we have discussed
Everything is deeply intertwingled

- **Study of war is important**
  - **"Those who cannot remember the past are condemned to repeat it"**
- **Reasons why we fight**
  - **Multifactorial ~ Unfortunately war seems to be a natural state for man**
- **Philosophers of War**
  - **Clausewitz's fog of war and friction**
  - **Sun Tzu's "The best battle is the battle that is never fought" and the Chinese Way of War**
  - **Boyd's OODA Loop**
- **Simulation**
  - **Key role in teaching decision making ~ Now also important in training**
- **Primacy of leadership**
  - **"To be somebody or to do something. In life there is often a roll call" - John Body**
- **Importance of training**
  - **"Train like you fight and fight like you train"**
- **Land warfare**
  - **"Poor bloody infantry" ~ Chaos of combat ~ Randomness of death ~ Impossibility of understanding it without being there**

Themes

**What we are going to discuss / What we have discussed
Everything is deeply intertwingled**

- **Centrality of planning and logistics**
  - "No plan survives first contact with the enemy" ~ "Amateurs talk tactics, generals talk logistics"
- **Intelligence**
  - "Intelligence does not win wars. In reality, intelligence is muddled, partial, contradictory, often proving not very secret at all and always confusing."
- **Naval warfare**
  - Those who fail seapower test fail longevity test ~ Good navy is guarantor of peace
- **Aerial warfare**
  - Slowly but steadily fulfilled its promise ~ Key importance to victory today ~ The future of UAVs
- **Space warfare**
  - Can make one all knowing but dependence on it is an Achilles heel
- **Information warfare**
  - Media is very influential and should be paid attention to as a battlespace ~ Cyberspace is new battlespace we are very vulnerable in
- **Weapons of mass destruction**
  - Where nuclear weapons appear interstate warfare is abolished

Themes
What we are going to discuss / What we have discussed
Everything is deeply intertwingled

- **Graceful degradation**
  - **True nature of war is chaos ~ Successful commanders manage uncertainty best**
- **How to Win a War**
  - **A grand strategy to focus our nation's actions - political, economic, and military - so as to:**
  - **1) Increase our solidarity, our internal cohesion**
  - **2) Weaken our opponents' resolve and internal cohesion (break their political will)**
  - **3) Strengthen our allies' relationships to us**
  - **4) Attract uncommitted States to our cause**
  - **5) End conflicts on favorable terms, without sowing the seeds for future conflicts**
- **How do Wars End**
  - **Rarely neatly, usually quite messily ~ Winning the peace is as important as winning the war**
- **Wars That Never End - Guerilla Wars**
  - **Win them by outgoverning the guerillas, which is time consuming, expensive, hard to do**
- **Way to win Long War, which is a global guerilla war**
  - **To convincingly articulate a vision for a democratic Muslim world that gives them a future ~ Then need to resource it and execute on it**

Themes
What we are going to discuss / What we have discussed
Everything is deeply intertwingled

- **Home front**
  - **Mobilizing the home front to positively influence political will is the key to victory**
- **Civilians and war**
  - **Since the Trojan War civilians have borne the brunt of the tragedy of war**
- **Heroism in War**
  - **Hero is one who unconsciously commits a selfless act ~ Most never recognized**
- **Rise and Fall of Empires**
  - **Empires have a common life cycle with their rise based on trade and fall based on bureaucracy, corruption, debt**
- **Future Wars and Geopolitics**
  - **Can we continue to articulate and implement a future worth creating while fighting off non-state actors who threaten globalization and managing state actors who oppose democracy?**
- **Future War Technology**
  - **There will always be a latest + greatest technology but people are your greatest asset**
  - **"People, Ideas, and Hardware. In that order!" - John Boyd**

Themes
What we are going to discuss / What we have discussed
Everything is deeply intertwingled

- **Lawfare**
  - **At a time when our enemies are increasingly following no rules of war, the rules of war governing our behaviors on the battlefield are becoming stricter**
  - **If the rules of war are enforced too tightly, can you win with one or both arms tied behind your back**
  - **You can steal more with a lawyer than you can with an army**
  - **Courtroom is battlefield of the future**
- **Corpsman Up!**
  - **Preventive medicine is a force multiplier**
- **How to Keep the Peace**
  - **Proxy wars and alternative diversions play a key role in keeping the peace in state on state conflict**
- **Role of the arts**
  - **Bringing war in some way to those who don't participate in it directly ~ Role in propaganda**
- **Conclusion**
  - **Our Grand Strategy should revolve around energy independence and it should be obtained from space**

Learning Objectives of This Course / War Frequently Asked Questions (FAQs)

- How do you provoke a war?
- How do you avoid a war? / How do you prevent a war?
- How and why do wars start? / What are the causes of war?
- How and why do wars end?
- Why do people fight?
- Can wars be just?
- Why do people surrender?
- How do you win a war?
- How do you lose a war?
- Is it always clear who won a war?
- What happens after wars?
- How were wars fought in the past?
- How will wars be fought in the future?
- In what ways can war be conducted in a moral manner? / Are there rules to the conduct of war?
- How will the new challenge of peacekeeping affect the armed forces?
- How will the information revolution affect the use of armed force?
- How have developments in modern society affected the military profession?
- Can lessons from history facilitate our understanding of contemporary conflicts and assessment of future risks?
- How has the character of warfare changed over time?
- Are there basic o which should shape the conduct of war if it is to be successfully prosecuted?

Poem

my sweet old etcetera
aunt lucy during the recent

war could and what
is more did tell you just
what everybody was fighting

for,
my sister

Isabel created hundreds
(and
hundreds) of socks not to
mention shirts fleaproof
   earwarmers

etcetera wristers etcetera, my
mother hoped that

i would die etcetera
bravely of course my father used
to become hoarse talking about
   how it was
a privilege and if only he
could meanwhile my

self etcetera lay quietly
in the deep mud et

cetera
(dreaming,
et
  cetera, of
Your smile
eyes knees and of your Etcetera)
- ee cummings, my sweet old etcetera

Questions for Further Discussion

- **See Learning Objectives / War Frequently Asked Questions for this course in Topic 1**

Reading Assignments

- **How to Make War Chapter 1**
- **TED Talks for this Topic**
  - **http://www.warstudiesprimer.org/ToLearnMore.html**

Recommended Reading to Learn More

- **Non-fiction**
- **Fiction**
- **Movies**
- **Simulations**

Conclusion

- **Three areas where the echoes from the Algerian Civil War in 1954-1962 are particularly painful, if not deafening in Iraq**
    - **Targeting of native police loyal to government by rebels**
    - **Benefit of porous frontiers**
    - **Vile hand of torture; of abuse, and counter-abuse**

- Alistair Horne, Preface to A Savage War of Peace, 2006 Edition

- **Two additional points**
    - **The difficulty of combating in nts with a regular modern army**
    - **The difficulty of extrication**

- Alistair Horne, My History Lesson in the Oval Office, Daily Telegraph, July 15, 2007

Conclusion

"If you want peace, understand war"
- B.H. Liddell-Hart

"Qui desiderat pacem, preparet bellum"
(Who desires peace, let him prepare for war)
- Vegetius

"Si vis pacem, para bellum"
(If you seek peace, prepare for war)
- Publius Renatus, 390 AD

Conclusion

"You may not be interested in war, but war is interested in you."

- Leon Trotsky

Topic 2

Why We Fight

Song

Over There, Over There
Send the word, send the word,
Over There
That the Yanks are coming,
The Yanks are coming,
The drums rum tumming everywhere
So prepare,
Say a Prayer
Send the word,
Send the word to beware
We'll be over, we're coming over.
And we won't be back till it's over over there!

- George M. Cohan, Over There

Thematic Quote

"For God's sake why is it we can't learn to live together?"

- Jonathan Winters as Norman Jones in The Russians Are Coming, The Russians Are Coming

Thematic Quote

"Older men declare war. But it is the youth who must fight and die."

- Herbert Hoover

The Painting

The Four Freedoms

- Norman Rockwell

(Saturday Evening Post)

The Question

What are the causes of war?

How and why do wars start?

Why do people fight?

Can wars be just?

When Did Wars Begin?

- **Jean-Jacques Rousseau believed war is an adjunct of civilization, that before civilization man lived in peace**

- **Margaret Mead - "War is only an invention, not a biological necessity"**
  - **...war is a product of civilization**
  - **Civilization = war, precivilization = peace**

- **War Before Civilization by Lawrence Keeley**
  - **According to Keeley, "prehistorians have increasingly pacified the past"**
  - **Keeley demonstrates there was violent prehistoric warfare**

- Edwin Erkes, Lawrence Keeley Knows That People are no Damn Good and It's About Time You Did, Against the Odds, Vol 2 Num 2, pp 19-20

When Did Wars Begin?

- **Violence in early human hunter-gatherer communities was driven by personal conflicts rather than large scale battles**
  - **Suggests war is not innate part of human nature**
  - **Instead, war developed as hunter-gatherers settled down and made transition to farming, becoming more territorial with a more complex social structure**

- Douglas P. Fray, Patrik Soderberg. Lethal Agression in Mobile Forager Band and Implications for the Origin of War. Science, July 19, 2013.

When Did Wars Begin?

- **Nataruk massacre of hunter-gatherers who were attacked + killed by rival group of prehistoric foragers 10,000 years ago, 30 km west of Lake Turkana, Kenya**
  - **27 skeletons found, 12 skeletons were relatively complete, 10/12 relatively complete skeletons showed signs of violent death**
  - **Earliest scientifically-dated evidence of human conflict which is an ancient precursor to warfare**
  - **Earliest record of inter-group violence among prehistoric hunter-gathers who were nomadic**

- M. Mirazón Lahr et al. Inter-group violence among early Holocene hunter-gatherers of West Turkana, Kenya, Nature (2016).

Why Do Children Fight?

- **Everything I ever knew I learned in kindergarten**
  - **You took my toy**
  - **I want your toy**
  - **You made fun of my looks**
  - **You made fun of my beliefs**

Why Do Adults Fight?

- **You took my toy (territory / resources)**
- **I want your toy (territory / resouces)**
- **You made fun of my looks (racism)**
- **You made fun of my beliefs (clash of civilizations, religions, ideologies)**

- **National honor**
- **Survival / Self Defense**

Why Do People Fight?

- **Chilean economist Manfred Max-Neef has the observation that all of human history is driven by human need and these human needs are finite and they are unchangeable throughout time and culture. What does change is how we as a culture react to them, the strategies we have against them. These are some of the fundamental needs he describes. Some of these needs in particular are very, very deep in our core. They relate to our need for survival, our need for freedom, our need for protection. These three needs, in particular when we try to meet these needs, bring us into conflict with the needs of others. And so in many ways conflict is sadly and tragically part of the human experience.**

Why Do Nations Fight?

"Three of the strongest motives" that propel states' actions: "Fear, honor, and interest"

- Thucydides, chronicler of the Peloponnesian War

A Theory of Violence

"So that in the nature of man, we find three principal causes of quarrel. First, competition; secondly, diffidence; thirdly, glory.

The first maketh men invade for gain; the second, for safety; and the third, for reputation. The first use violence, to make themselves masters of other men's persons, wives, children, and cattle; the second, to defend them; the third, for trifles, as a word, a smile, a different opinion, and any other sign of undervalue, either direct in their persons or by reflection in their kindred, their friends, their nation, their profession, or their name."

- Thomas Hobbes, Leviathan

Why Do Politicians Fight?

"War is a continuation of politics by other means"

- Clausewitz

(Human will - The point of war is to impose your will on your enemy)

"War is too important to be left to the generals."

- Clemenceau

• What happens when politicians have no military experience?

"War is too important to be left to politicians. They have neither the time, the training, nor the inclination for strategic thought."

- General Jack Ripper

Why Do Politicians Fight?

Fundamental purpose of a government is to protect its people

"People sleep peaceably in their beds at night only because rough men stand ready to do violence on their behalf "

- George Orwell

"Diplomacy without weapons is like music without instruments"

- Frederick the Great

Why Do Politicians Fight?

"Naturally, the common people don't want war...but, after all it's the leaders of the country who determine the policy and it is always a simple matter to drag the people along, whether it is a democracy or a fascist dictatorship or a Parliament or a Communist dictatorship...Voice or no voice, the people can always be brought to the bidding of the leaders. That is easy. All you have to do is tell them they are being attacked and denounce the pacifists for lack of patriotism and exposing the country to danger. It works the same way in any country."

- Herman Goering at Nuremberg trial in 1946

Why Do Politicians Fight?

"The only thing necessary for the triumph of evil is for good men to do nothing"

- Edmund Burke

Why Do Politicians Fight?

"I'm a politician which means I'm a cheat and a liar and when I'm not kissing babies I'm stealing their lollypops. But it also means that I keep my options open."

- Jeffrey Pelt, National Security Advisor, The Hunt For Red October

Why Do Ants Fight?

- **Like humans, ants:**
  - **Fight for access to dwelling spaces, territory, food, labor**
  - **Make strategic choices about when and where to wage war**
  - **Use diverse tactics when attacking**
- **Unlike humans, ants**
  - **Capacity for war is enhanced by an unbreakable allegiance to their colony**

- Mark W. Moffett, Ants & The Art of War, Scientific American, Dec. 2011

Not-So Defensive Alliances

"When I think of the Allied alliance in World War II I am struck by how little is written or discussed about the nature of alliances. One should remember that alliances have traditionally been mechanisms that take small wars and make them big wars, something that our new leadership should take into account as they re-examine our current theory on expanding NATO. Alliances also have more often than not lowered the barrier to war and reduced security. The reason is it enables less significant alliance members to make emboldened decisions that impact the collective. These two themes have played themselves out since the Peloponnesian War."

- Mark Herman

Bottom Line Why We Fight...

- **…to achieve a political objective**

Why We Should Not Fight

- **Views On the Limits to Military Power**
  - 1. Do not depend on the first military move being decisive. If it is not decisive you will be fighting a very different war to the one envisaged;

  - 2. A poor performance in the early stages of a war will prolong its length if it does not lead to immediate defeat;

  - 3. It is easier to start wars than to end them;

  - 4. Forces are more determined when defending their own territory than when invading somebody else's;

  - 5. Resistance does not necessarily conclude with the defeat of defending forces but can lead to insurgency. This is why it is always unwise to occupy countries where you will not be welcome.

  - 6. The longer wars go on the more important non-military considerations (national resilience/economic strength/ alliance and partnerships) become to their resolution;

  - 7. During the course of a war the political objectives for which it is being fought will change so that the prospective gains can justify the actual costs, thereby making them harder to conclude;

  - 8. The unintended consequences of wars are normally as if not more important than the intended;

  - 9. As Rules 1-8 are self-evident those political leaders who ignore them and launch a war are apt to achieve surprise, simply by being stupid.

- Lawrence Freedman, Spirits of the Past: The Role of History in the Russo-Ukraine War, Comment is Freed, June 12, 2022

Clash of Civilizations

"In this new world, the principal conflicts of global politics will occur between nations and groups of different civilizations…The fault lines between civilizations will be the battle lines of the future."

"This article does not argue, that groups within a civilization will not conflict with and even fight one another…Conflicts between groups in different civilizations will be more frequent, more sustained and more violent than conflicts between groups in the same civilization."

- Civilizations are the ultimate human tribes
- Cultural differences will be the major source of global tension in the future

(But the overwhelming majority of conflicts post Cold War have been civil wars…)

- Samuel P. Huntington, The Clash of Civilizations and the Remaking of World Order, Foreign Affairs, Summer 1993

Why the US Fought in World War II

- **Noble Reasons - the Four Freedoms**
    - **Freedom of speech and expression**
    - **Freedom of worship**
    - **Freedom from want**
    - **Freedom from fear**

    - Franklin Delano Roosevelt, January 6, 1941

Why the US Fought in World War II

"They (who) seek to establish systems of government based on the regimentation of all human beings by a handful of individual rulers…call this a new order. It is not new and it is not order."

- Franklin Delano Roosevelt

Why Do Soldiers Not Want to Fight?

"Professional military men...can be pacifists, warriors, and patriots without contradiction."

- James F. Dunnigan

- Some of the biggest pacifists you'll ever find are in uniform

- Soldiers don't start wars, politicians do

Why Do Soldiers Not Want to Fight?

"Attacking Iraq now will cause a lot of problems. I think the debate right now that's going on is very healthy. If you ask me my opinion, Gen. Scowcroft, Gen. Powell, Gen. Schwarzkopf, Gen. Zinni, maybe all see this the same way. It might be interesting to wonder why all the generals see it the same way, and all those that never fired a shot in anger and are really hell-bent to go to war see it a different way. That's usually the way it is in history."
        - Gen. Anthony Zinni, August 23, 2002

- Former CINCs were opposed to the war in Iraq - saw no military reason to attack Iraq

Why Do Soldiers Not Want to Fight?

"Battle should only be offered when there is no other turn of fortune to be hoped for, as from its nature the fate of a battle is always dubious."

- Napoleon

Why Do Soldiers Not Want to Fight?

"A soldier above all other people prays for peace for he must suffer and bear the deepest wounds and scars of war."

- General Douglas MacArthur

Why Soldiers Serve

"The anti-war movement gave rise to the moral superiority of non-involvement and non-commitment.

…it's not much of a strategy of how to go through life.

This was the mindset in which our country was firmly stuck…

Until 9/11, some woke up…

Commitment is love acted out."

- LCDR Steven P. Unger, CHC, USN

Why Sailors Serve

"Patriotism - moral behavior at the national level…It means that you place the welfare of your nation ahead of your own even if it costs you your life."

- Robert A. Heinlein, Lecture to the Brigade of Midshipmen, U.S. Naval Academy 1973

Why Soldiers Re-enlist

"They sicken of the calm, who knew the storm"

- Dorothy Parker

Why Do Soldiers Fight?

- **When you get to the level of the trigger pullers, why do soldiers fight?**
  - **They fight for each other, and so to not let their friends down - "Band of Brothers" effect**

  "Soldiers do not like war. They usually like it a lot less than civilians, since they know its reality…When war confronts the Services, however, it becomes a matter of pride to take part."

  - **John Keegan, Soldiers Don't Like War, But When it Comes, They Want to Be There, Daily Telegraph, March 20, 2003**

Why Do Soldiers Fight?

"Another aspect of a unit's combat performance that is often ignored, morale is often regarded as an unmeasurable quantity. This is not so, as the German experience shows. The Germans recognized the fact that, in combat, a soldier does not fight primarily for things such as patriotism and political or moral conviction. These factors may play a large part in getting a man into the army. But once there, other, more mundane factors take over. Chief amongst these was self-preservation and, as a function of that, the attitudes of one's companions."

- James F. Dunnigan, War in the East, p.134

Why Do Soldiers Fight?

"Many soldiers of all armies can testify that the battalion was more like a tribe when it came to social organization. The companies were clans while the squads and platoons were families. The German organizational doctrine played upon the soldier's need for a family. This was a primitive sort of family - its main function was self-preservation. As long as its members had confidence in the family, clan and tribal 'leaders,' as well as in the overall effectiveness of the tribe itself, then they could be called upon to do just about anything."

- James F. Dunnigan, War in the East, p.134

Why the German Army in World War II Fought So Stubbornly to the End

"This extraordinary tenacity of the German Army has frequently been attributed to the strong National Socialist political convictions of the German soldiers. It is the main hypothesis of this paper, however, that the unity of the German Army was in fact sustained only to a very slight extend by the National Socialist political convictions of its members, and that more important in the motivation of the determined resistance of the German soldier was the steady satisfaction of certain primary personality demands afforded by the social organization of the army.

This basic hypothesis may be elaborated in the following terms.

1. It appears that a soldier's ability to resist is a function of the capacity of his immediate primary group (his squad or section) to avoid social disintegration. When the individual's immediate group, and its supporting formations, met his basic organic needs, offered him affection and esteem from both officers and comrades, supplied him with a sense of power and adequately regulated his relations with authority, the element of self-concern in battle, which would lead to disruption of the effective functioning of his primary group, was minimized.

- Edward A. Shils + Morris Janowitz, Cohesion and Disintegration in the Wehrmacht in World War II, Public Opinion Quarterly, Summer 1948

Why the German Army in World War II Fought So Stubbornly to the End

2. The capacity of the primary group to resist disintegration was dependent on the acceptance of political, ideological, and cultural symbols (all secondary symbols) only to the extent that these secondary symbols became directly associated with primary gratifications.

3. Once disruption of primary group life resulted through separation, breaks in communications, loss of leadership, depletion of personnel, or major and prolonged breaks in the supply of food and medical care, such an ascendency of preoccupation with physical survival developed that there was very little "last-ditch" resistance.

4. Finally, as long as the primary group structure of the component units of the Wehrmacht persisted, attempts by the Allies to cause disaffection by the invocation of secondary and political symbols (e.g., about the ethical wrongfulness of the National Socialist system) were mainly unsuccessful. By contrast, where Allied propaganda dealt with primary and personal values, particularly physical survival, it was more likely to be effective."

- Edward A. Shils + Morris Janowitz, Cohesion and Disintegration in the Wehrmacht in World War II, Public Opinion Quarterly, Summer 1948

Why Do Soldiers Fight?

"…he decided then that he was going to do whatever was necessary to keep his crew alive and to get everybody back home safely, himself included."

- David Zucchino, Thunder Run, p.19

"They were fighting for their country, of course, and for the inherent nobility of their profession. But mostly, they were fighting to come home alive and to ensure that the men beside them came home too. The military works assiduously to build unit cohesion, in part because a man will fight harder beside someone he knows, someone with whom he has built a bond from shared danger and sacrifice and fear."

- David Zucchino, Thunder Run, p.91

Do They Think of Death?

"One of us knew Rupert Brooke…and from him evolved a generalism: that youth is enamored of death.

I did not think so. Poets, perhaps, may see death as a poetic abstraction, a laying down of life, and a relinquishment of the sunlight, for things which they consider of more importance. But poets are unusual and contrary to all rules, and not always valuable to the combat services. Men in war think of death casually, because they see so much of it that it ceases to become significant. But they do not want to die, and they do not expect to die. Man cannot, mercifully, contemplate his own extinction. He will believe, always, that though his friends on his right hand and his left hand fall, he will come through. It is so with most men. I have served with two only who know that they were going to die, and died."

- John W. Thomason, Salt Winds and Gobi Dust, pp. 269-270

In Combat, How Many Soldiers Actually Fight?

- **After action interview**
  - **Demo it, asking someone to think back to the last time you ate out with a group...and reconstruct their meal, show how this can be used to reconstruct a battle**
- **Very few fight (in WWII 15% US riflemen fired at the enemy)**
  - **Not cowards - just could not bring themselves to aim their rifle at another human**
    - **SLA Marshall, Men Against Fire: The Problem of Battle Command in Future War**

In Combat, How Many Soldiers Actually Fight?

"Fear of killing, rather than fear of being killed, was the most common cause of battle failure in the individual…At the vital point, he becomes a conscientious objector…"

"We are reluctant to admit that essentially war is the business of killing…"(while the soldier himself)…"comes from a civilization in which aggression, connected with the taking of life, is prohibited and unacceptable."

- SLA Marshall, Men Against Fire: The Problem of Battle Command in Future War

Human Aversion To Killing

"Lt. Col. Dave Grossman, a psychologist and former professor at West Point, has written extensively on the natural human aversion to killing. His 1995 book *On Killing* contains a collection of accounts from his research and from military history demonstrating soldiers' revulsion with killing-in particular, killing at close range. He tells the story of a Green Beret in Vietnam describing the killing of a young Vietnamese soldier: "I just opened up, fired the whole twenty rounds right at the kid, and he just laid there. I dropped my weapon and cried." The most telling accounts are with the "close" kills of hand-to-hand combat. Grossman tells of a Special Forces sergeant from the Vietnam War describing a close kill: "'When you get up close and personal,' he drawled with a cud of chewing tobacco in his cheek, 'where you can hear 'em scream and see 'em die,' and here he spit tobacco for emphasis, 'it's a bitch.'""

- John Sifton, A Brief History of Drones, The Nation, February 27, 2012

In Combat, How Many Soldiers Actually Fight?

- **It was no longer enough to teach a man to shoot a target, he must also be conditioned to kill, and the way to do it, was to play down the fact that shooting equals killing**
  - **By the time of Vietnam, 90% of soldiers were shooting back**
- **After effects of taking an enemy's life are almost never studied**
  - **In Vietnam, soldiers who had killed - or believed they killed - in combat, suffered higher rates of PTSD**
    - **Dan Baum, The Price of Valor, The New Yorker, July 12/19, 2004**

In Combat,
How Many Soldiers Actually Fight?

- **To help protect soldier's long term mental health, military leaders should impress upon them that killing in war is justifiable**

  - Dan Baum, The Price of Valor, The New Yorker, July 12/19, 2004

Morality of War

- **How can it be morally justifiable to kill people?**

- **For a war to be just, three things are necessary**
  - **The authority of the sovereign by whose command the war is to be waged**
  - **A just cause - those who are attacked should be attacked because they deserve it on account of some fault**
  - **The belligerents should have a rightful intention, so they intend the advancement of good or the avoidance of evil**

- Saint Thomas Aquinas

Morality of Killing in Combat

- **Killing is morally acceptable when the enemy poses a threat to values worth fighting for, such as life or liberty, and there are no nonlethal options to avoid the threat.**

- **Failure to address these issues in training can sometimes disable soldiers in combat, and leave them more prone to psychological traumas after the battle is finished**

  - Major Peter Kilner, West Point Philosophy + Ethics Professor

- Greg Jaffe, Breaking a Taboo, Army Confronts Guilt After Combat, Wall Street Journal, Aug 17, 2005

Ethics of War

"Ethics in war on the part of a Western society do not so much protect the objects of our violence as they shield us from the verity of our actions"

- Standoff precision weapons dehumanize warfare

- We are unwilling to assassinate Saddam, but we are willing to strangle the Iraqi population in vain hopes of undoing him

  - Ralph Peters, A Revolution in Military Ethics?, Parameters, Summer 1996

Ethics of War

- **Executive Order 12333 from President Reagan in 1981 - "No person employed by or acting on behalf of the United States Government shall engage in, or conspire to engage in, assassination."**

- **What is the legal + moral calculus of combating terrorism by targeting significant enemy individuals?**
  - **"Precise attacks against individuals" have many precedents and "further the goals of laws of war by eliminating the enemy and reducing harm to innocent civilians"**
  - **Waging war is unlike administering criminal justice in that criminal justice is retrospective. A nation goes to war to prospectively prevent future injuries**
  - **- John Yoo, Assassination or Targeted Killings after 9/11, New York School Law Review 2011-12**

- George Will, A Case For Targeted Killings, Washington Post, Dec 12, 2012

Call For an End to American Militarism

"Today, too many ideologues call for U.S. force as the first option rather than a last resort. On the left, we hear about the "responsibility to protect" civilians to justify military intervention in Libya, Syria, Sudan and elsewhere. On the right, the failure to strike Syria or Iran is deemed an abdication of U.S. leadership. And so the rest of the world sees the U.S. as a militaristic country quick to launch planes, cruise missiles and drones deep into sovereign countries or ungoverned spaces. There are limits to what even the strongest and greatest nation on Earth can do-and not every outrage, act of aggression, oppression or crisis should elicit a U.S. military response.

This is particularly worth remembering as technology changes the face of war. A button is pushed in Nevada, and seconds later a pickup truck explodes in Mosul. A bomb destroys the targeted house on the right and leaves the one on the left intact. For too many people-including defense "experts," members of Congress, executive branch officials and ordinary citizens-war has become a kind of videogame or action movie: bloodless, painless and odorless. But my years at the Pentagon left me even more skeptical of systems analysis, computer models, game theories or doctrines that suggest that war is anything other than tragic, inefficient and uncertain."

- Robert M. Gates, US Secretary of Defense, 2006-2011

Food for Thought

"Wars begin where you will, but they do not end where you please"

- Niccolo Machiavelli

"War has its own grammar, but not its own logic"

- Carl von Clausewitz

"War is the unfolding of miscalculations"

- Barbara Tuchman

Food For Thought

"Never, never, never believe any war will be smooth and easy, or that anyone who embarks on the strange voyage can measure the tides and hurricanes he will encounter. The statesman who yields to war fever must realize that once the signal is given, he is no longer the master of policy but the slave of unforeseeable and uncontrollable events."

- Sir Winston Churchill

Food for Thought

"There is no such thing as a quick, clean war. War will always take you in directions different from what you intended. The only guy in recent history who started a war and got what he intended was Bismarck."

(Bismarck achieved the unification of Germany after several European wars)

- Col. Sam Gardiner, National War College

- James Fallows, Will Iran be Next? Atlantic, December 2004

Civil Wars

- **Typical civil war**
  - **Fought over issue of who runs country, not how it is run**
  - **Sides divided by ethnicity, religion, language**
  - **Armies involved are small as are their engagements**
  - **Lasts longer than 4 years - cycle of violence becomes way of life**
  - **Foreign powers usually involved**
- **Why do they occur**
  - **Economics - more common in poor countries and in countries reliant on easily expropriated exports (diamonds, oil)**
  - **More likely to afflict countries divided by ethnicity, religion, language**
  - **More likely to break out where population is young and male**
- **How to stop them**
  - **Foreign intervention helps one side defeat the other**

- Niall Ferguson, The Reality of Civil War, Time, Jan. 25, 2007

Focused Case Study - Romeo and Juliet as Civil War

- Montagues and Capulets are just

   "Two households, both alike in dignity

   In fair Verona."

- Yet this does not stop an interminable civil war being waged between these two clans who

   "From ancient grudge break to new mutiny

   Where civil blood makes civil hands unclean."

- In lines that go to what the heart of a civil war is about - mutual hatred between neighboring groups sustained by a cycle of violence - Shakespeare says the families are

   "Profaners of this neighbor-stained steel…you men, you beasts

   That quench the fire of your pernicious rage

   With purple fountains issuing from your veins"

- In summary, each attack begets another such attack, in an unstoppable cycle of tit-for-tat killing

   - No amount of tragedy brings the Montagues + Capulets to their senses

- Niall Ferguson, To Understand the Middle East Today, Turn to Romeo and Juliet, Daily Telegraph, Nov 26, 2006

Focused Case Study

- **Case study - great example**
  - **Kurdish Iraq in 1991 - Anthony Zinni - his rules for OOTW**
- **Case study - terrible example**
  - **Iraq 2003 - Won the battle, lost the war**
    - **There was no Phase IV planning**

Case Study Summary - Operation Provide Comfort - 3/20/91-7/15/91

- **Goal**
  - **First - provide supplies to Kurdish refugee camps in Turkey**
  - **Second - return Kurdish refugees to homes in Iraq**
- **Center of Gravity (Strategy)**
  - **Iraqi Army - remove it peaceably from Kurdish northern Iraq**
- **Equipment**
  - **Logistics was key**
- **Training**
- **Leadership**
  - **USA Dream Team - Zinni, Garner, Abizaid, Shalikashvili**
    - **James L Jones, Operation Provide Comfort: Humanitarian and Security Assistance in Northern Iraq, Marine Corps Gazette, Nov 1991**

Case Study Summary - Operation Provide Comfort - 3/20/91-7/15/91

- **Morale**
  - **Refugees would only return to homes when their security was guaranteed**
- **Tactics**
- **Intangibles**
  - **US forces operated jointly and in unison with US government organizations, Non government organizations, and foreign militaries (Dutch Marines, French Marines, Royal Marines, Italians, Spanish)**
- **Mistakes**
- **Outcome**
  - **Successful relocation of half million Kurds in 60 days**

    - James L Jones, Operation Provide Comfort: Humanitarian and Security Assistance in Northern Iraq, Marine Corps Gazette, Nov 1991

Focused Case Study - Iraq 2003 Reasons For War

- **Official**
  - **Eliminate threat from Iraqi Weapons of Mass Destruction**
- **Personal**
  - **Finish the job my father (President George H.W. Bush) started in 1991**
  - **Revenge for attempted assassination of my father in Kuwait in 1993**
- **Unofficial**
  - **Ensure US economy's continued access to low-cost oil from a grateful Iraq for next 50 years (like FDR / King Abdulaziz of Saudi Arabia deal in 1945)**
  - **Provide Big Bang start for democracy in Middle East**
- **Bottom line**
  - **A handful of people took a country of > 280 million people to war on a false pretense while Congress + media stood by**

Personal Case Study - Gordon England

- **Role - Secretary of the Navy 2001-2006**
- **Story**
  - **Friendly and to-the-point, puts you at ease**
  - **On the possible upcoming war with Iraq**

    "It's not my decision to make, it's the President's. My job is to make sure the troops are ready…We (the Navy) will carry out what the president asks us to do. I have absolute respect for the decisions of the President and of Congress." - October 7, 2002

Personal Case Study - Jim Leach

- ## Role - Congressman (R-IA) 1977-2007
- ## Story
  - ### Voted against 2002 Iraq War Resolution

    "These are very sobering moments and the risks are towering on all sides - you have the risk of action and the risk of inaction - and every individual citizen will have to make certain judgments of their own." - October 7, 2002

  "Digital libraries are the greatest foreign aid the US has" - October 2004

  "If I can give you one thought - China is the future" - October 2004

Class Simulation

- **Political aspects**

Poem

"History does not offer lessons; its unique constellations of contingencies never repeat. But life does offer the same points, over and over again. A lesson is many-edged; a point has only one, but that one sharp. And the point we might still take from the First World War is the old one that wars are always, in Lincoln's perfectly chosen word, astounding. They produce results that we can hardly imagine when they start. It is not that wars are always wrong. It is that wars are always wars, good for destroying things that must be destroyed, as in 1864 or 1944, but useless for doing anything more, and no good at all for doing cultural work: saving the national honor, proving that we're not a second-rate power, avenging old humiliations, demonstrating resolve, or any of the rest of the empty vocabulary of self-improvement through mutual slaughter."

- Adam Gopnik, The Big One, The New Yorker, August 20, 2004

Poem

"Kipling learned this..the best poem Kipling ever wrote about war and its consequences, the simple couplet produced after his son was killed:"

If any question why we died

Tell them, because our fathers lied.

- Adam Gopnik, The Big One, The New Yorker, August 20, 2004

Questions for Further Discussion

- **Under what conditions would *you* fight for King and Country?**

- **Under what conditions would *you* die for Queen and Country?**

Reading Assignments

- **How to Make War Chapter 12**
- **TED Talks for this Topic**
  - **http://www.warstudiesprimer.org/ToLearnMore.html**

Recommended Reading to Learn More

- **Non-fiction**
- **Fiction**
- **Movies**
  - **All Quiet on the Western Front**
- **Simulations**

Conclusion

"Violence is the last refuge of the incompetent."

- Salvor Hardin in Foundation by Isaac Asimov p. 61

Conclusion

"Choose your enemies carefully, for you will end up looking like them"

- Anonymous

Topic 3

Philosophers of War

Song

I am the very model of a modern Major-General,
I've information vegetable, animal, and mineral,
I know the kings of England, and I quote the fights historical
From Marathon to Waterloo, in order categorical;
I'm very well acquainted, too, with matters mathematical,
I understand equations, both the simple and quadratical,
About binomial theorem I'm teeming with a lot o' news,
With many cheerful facts about the square of the hypotenuse.

- W.S. Gilbert, The Major General's Song

Thematic Quote

"The art of war is simple enough. Find out where your enemy is. Get at him as soon as you can. Strike as hard as you can and keep moving on."

- Ulysses S. Grant

Thematic Quote

"The art of war and the science of war are not coequal. The art of war is clearly the most important. It's science in support of the art. Any time that science leads in your ability to think about and make war, I believe you're headed down a dangerous path.

The art is the thinking. It is the intellectual underpinnings of war. It's understanding the theory and the nature. It's understanding how it is you want to bring combat power to bear, and what the operating concepts are. The science is represented by the weapons. It's represented by the ammunition. It's represented by the command and control, and by the communications, the space-based systems, for example."

- Lt Gen Paul Van Riper USMC

The Painting

Battle of Anghiari

- Leonardo Da Vinci

(Salone dei Cinquecento in the Palazzo Vecchio, Florence)

The Question

Is Military Intelligence an oxymoron?

Sun Tzu - Biography

- **Textbook - The Art of War**

Sun Tzu - Ideas

- **Indirect approach to war**

Sun Tzu - Quotes

"The best battle is the battle that is never fought"

"The battle is best decided before armies take to the field"

"One hundred victories in one hundred battles is not the most skillful. Subduing the other's military without battle is the most skillful."

"If you know the enemy and know yourself, you need not fear the result of a hundred battles. When you are ignorant of the enemy, but know yourself, your chances of winning and losing are equal. If ignorant of both your enemy and of yourself, you are certain in every battle to be in peril."

Focused Case Study - Long War

- **More Sun Tzu, Less Clausewitz**
  - **Effects-based warfare stresses what you accomplish, not how you accomplish it**
    - **The better you get at it, the more you win without having to go kinetic**
      - **You become more like Sun Tzu and less like Clausewitz**
  - **In the Core, inter-state war disappears, so Clausewitz gets old**
  - **In the Gap, mass violence exists**
    - **The usual instinct is to go kinetic, but doing so doesn't alter existing conditions**
    - **To shrink the Gap, must learn to win without bullets**

      - Thomas P.M. Barnett, More Sun Tzu, Less Clausewitz

Carl von Clausewitz - Biography

- **Textbook - On War - 1832**
- **Came out of the Napoleonic experience**
- **Tried to create a comprehensive theory of war that could be applied to the realm of practice**
  - **Interpreting Modern War: Clausewitz and Jomini, US Army Command and General Staff College M/S600-4**

Carl von Clausewitz - Ideas

- **The fundamental nature of war is fundamentally uncertain (fog of war)**
  - **There is no way to predict how it will turn out**
  - **It has its own dynamics as it unfolds**
- **Friction on the battlefield (bad stuff happens) leads to uncertainty**
  - **FUBAR and SNAFU**
- **Centers of gravity**
  - **A key capability of a combatant, without which he loses**

Carl von Clausewitz - Ideas

- **Concept of war as a battle between the wills of opposing commanders that is vastly complicated by fog and friction**

- **Fundamental nature of war is chaos**

- **Concentrate your effort against military forces of the enemy**

Carl von Clausewitz - Trinity

- **The trinity that interact with each other**
  - **Passion and emotion (represented by the people)**
  - **Play of probability and chance (represented by the army)**
  - **Logic and Reason (represented by the government)**

Carl von Clausewitz - Putting Him in Context

"He was trying to solve the problem of Napoleonic warfare between uniformed armies fielded by states, practically all of which were monarchies after 1804. Clausewitz saw international politics as a game between these states, where war was a natural play, an "extension of policy by other means," in his famous description...All of these factors led to a strategy of bringing the enemy army to decisive battle and then defeating it, and (in order to minimize friction and enable maximum force against the "center of gravity") to what Boyd called an obsession with top down control."

- Chet Richards

Carl von Clausewitz - Quotes - Friction

"In war all is simple; but the most simple is still very difficult. The instrument of war resembles a machine with prodigious friction, but cannot, as in ordinary mechanics, be adjusted at pleasure, but is ever in contact with a host of chances…"

Carl von Clausewitz - Quotes - Fog of War

"All action takes place, so to speak, in a kind of twilight, which, like fog or moonlight, often tends to makes things seem grotesque and larger than they really are."

"War is the realm of uncertainty; three quarters of the factors on which action is based are wrapped in a fog of greater or lesser uncertainty."

- The metaphor of the "fog" of war implied how distortion and overload of information produce uncertainty to the actual state of affairs.

Carl von Clausewitz - Quotes

"In the whole range of human activities, war most closely resembles a game of cards"

"War is an act of violence that we use to compel our will against the will of others. Therefore it is no surprise that we apply all of the things of art and science to bring to bear to this nature of violence. We bring all of our creativity to it."

Carl von Clausewitz - Quotes - Politics

"War is a continuation of politics by other means."

"(war is) an act of force to compel our enemy to do our will…"

"The first, the supreme, the most far-reaching act of judgment that the statesmen and commander have to make is to establish...the kind of war on which they are embarking ."

"The political object is the goal, war is the means of reaching it, and means can never be considered in isolation from their purpose."

"The ultimate objective of all military operations is the destruction of the enemy's armed forces by battle. Decisive defeat in battle breaks the enemy's will to war and forces him to sue for peace."

Focused Case Study - Vietnam

- **The central lesson of Clausewitz is that war is national policy, and national policy has three components:**
  - **Government / Military / People**
- **Like a tripod, when all three are functioning well, it is a very stable platform**
  - **Remove, or weaken one leg and the platform falls**
- **In Vietnam, there was a failure to mobilize national will / popular will of the people**

- Colonel Harry Summers, On Strategy: The Vietnam War in Context

Antoine de Jomini - Biography

- **Textbook - Summary of the Art of War - 1837**
- **Came out of the Napoleonic experience**
- **Not a theory of war, a theory of deployment**
  - **Interpreting Modern War: Clausewitz and Jomini, US Army Command and General Staff College M/S600-4**

Antoine de Jomini - Ideas

- **Work answers one question - how to deploy units successfully in the main battle**

- **Object is to win a favorable result through the concentration of strength against weakness**

    - **Interpreting Modern War: Clausewitz and Jomini, US Army Command and General Staff College M/S600-4**

John Boyd - Biography

- **Textbook (Brief) - Patterns of Conflict**

John Boyd - Ideas

- ## Patterns of Conflict
  - ### Contrasts attrition warfare + maneuver warfare
  - ### Three levels of war - physical, mental, moral
    - (Not tactical - operational - strategic)
- ## Organic Design for Command + Control
  - ### From maneuverist perspective, you don't want command and control, but rather appreciation and leadership
    - (Rather than using technology to improve command and control)

John Boyd - Ideas

- ## OODA Loop
  - ### Observe / Orient / Decide / Act
  - ### One of the ways to win a battle is for a commander to cycle through his OODA loop more quickly than his opponent does, this is called getting inside the enemy's OODA loop, and doing so forces the enemy to stop acting and to solely react, this leads to victory
    - These rapid, jarring changes disorient + demoralize opponent
- ## Essence of his strategy is to create chaos + exploit it faster than the other side can sort it out
  - ### This strategy has physical, mental, moral effects on opponents…degrading their ability to function as harmonious team

Boyd's Principles of the Blitzkrieg
An Organizational Climate for Operational Success

- **Einheit - mutual trust**
  - **Cohesiveness**

- **Behendigkeit - mental agility**
  - **Ability to break out of orientation patterns when the situation has changed**

- **Fingerspitzengefühl - intuitive competence**
  - **Ability to read the flow of seemingly chaotic events (e.g., a battle)**

- **Auftragstaktik - mission command (Boyd preferred "leadership & appreciation")**

  Specifying the goals and boundary conditions but leaving the how-tos up to the person receiving the task

- **Schwerpunkt - a concept that provides focus and direction to an entire organization**
  - **All other activities must support the Schwerpunkt**

John Boyd - Quotes

"People, Ideas, and Hardware. In that order!"

- John Boyd

"Machines don't fight wars. People do, and they use their minds."

- John Boyd

William Lind - Biography

- **Article - The Changing Face of War: Into the Fourth Generation**
- **Textbook - FMFM1-A**

William Lind - Ideas -
4 Generations of Warfare

- **First - 1648 - 1860**
  - **Era of smoothbore musket - the tactics of line and column - linear**
  - **State has a monopoly on war**
  - **Battlefield of order - culture of order**
- **Second - French in WWI**
  - **Era of rifled musket, machine gun, indirect fire - the tactics of fire and movement - linear**
  - **Firepower / attrition warfare**
  - **Battlefield of disorder - culture of order**
    - **William Lind, The Canon and the Four Generations, On War #71**

William Lind - Ideas - 4 Generations of Warfare

- **Third - Germans in WWI and WWII - Blitzkrieg**
  - **Maneuver warfare - nonlinear**
  - **Battlefield of disorder - culture of disorder**
- **Fourth - 1991 - Present**
  - **End of state's monopoly on war**
  - **Non state actors / terrorism**
    - **William Lind, The Canon and the Four Generations, On War #71**

Four Generations of Modern War

- **First Generation**
  - **Begins with Peace of Westphalia in 1648 + runs through end of US Civil War**
  - **Tactically was war of line + column - armies moved in column + fought in line**
  - **Battlefields were battlefields of order which created military culture of order**
  - **Culture was inward-focused on drills, rules, regulations, orders + demanded obedience, not initiative + depended on imposed discipline**
  - **State militaries came to define themselves by culture of order**
  - **State asserted a monopoly on war**
    - **William Lind, The View From Olympus, July , 2013**
    - **William Lind, Some 4GW Resources, July 29, 2013**

Four Generations of Modern War

- **Second Generation**
    - **Created by French in 1914, synchronized all arms in highly choreographed battle with attacks having limited objectives + defense depending on maneuvering fires rather than troops**
    - **Ultimately is contest in mutual attrition where victory goes to whoever brings most firepower to bear**
    - **Preserved First Generation culture of order + dependence on imposed discipline**
    - **Focused inward on procedures, processes, orders, techniques**
    - **Highly centralized**
    - **Wants obedience, not initiative (initiative + synchronization are incompatible)**
    - **Depends on imposed discipline**
        - **William Lind, The View From Olympus, July , 2013**
        - **William Lind, Some 4GW Resources, July 29, 2013**

Four Generations of Modern War

- **Third Generation**
    - **Created by Germans in 1917-1918, small groups flow around enemy strong points seeking path of least resistance with attacks having unlimited objectives seeking to collapse enemy from the rear forward + defense changes from holding a line to letting enemy penetrate as deep as possible + then cutting them off with counterattacks that leave them encircled**
    - **Demands decentralization of decision making with orders specifying result to be obtained but not methods**
    - **Ultimately is maneuver warfare**
    - **Focused outward on the situation, the enemy + the result the situation requires**
    - **Decentralized in decision making**
    - **Prefers initiative to obedience**
    - **Depends on self-discipline**
        - **William Lind, The View From Olympus, July , 2013**
        - **William Lind, Some 4GW Resources, July 29, 2013**

Four Generations of Modern War

- **Fourth Generation**
  - **Reverses state's monopoly on war - states now find themselves fighting non-state entities**
  - **What changes is not how war is fought but who fights + what they fight for**
  - **Who fights - families, tribes, clans, races, religions, sects, causes / ideologies**
  - **What they fight for - have fun, grab loot, attain eternal salvation, have no other choices in life**
  - **Strength is mental + moral, not physical - represents David confronting Goliath**
  - **Suicide bombers show Fourth Generation's power at moral level - gives them precision-guided weapons - against our Hellfire missiles they are the Heaven-fired**
  - **What is at stake is state system + order it represents**
    - **William Lind, The View From Olympus, July , 2013**
    - **William Lind, Some 4GW Resources, July 29, 2013**

Focused Case Study - Meeting Between 2nd+3rd Generation Armies

- **General Heinz Guderian's XIX Panzer Corps' attack through the Ardennes to Sedan 1940**
  - **Relationship between operational results and tactical risk**
    - **German attack through Ardennes could be operationally decisive but tactically risky - they could have been bottled up on the roads if French doctrine called for defense rather than delay**
  - **Systems of systems only as strong as their weakest link - Fort Eben Emael**
    - **- William Lind, Sichelschnitt, On War #136**

Focused Case Study - Meeting Between 2nd+3rd Generation Armies

- **Crossing of Meuse river at Sedan**
  - **Key point of campaign - illustrated central difference between 2nd + 3rd generation army**
  - **Germans - focused outward - cooperated laterally - took initiative at every level to get the result required - German senior commanders were all forward at decisive points enabling them to see real situation quickly and act on it**
  - **French - focused inward - act only in response to orders from higher headquarters which was well to the rear, large and comfortable**
- **Need to dispel myths**
  - **French did fight, had superior equipment, when they had initiative and cooperation they could beat Germans**
  - **- William Lind, Sichelschnitt, On War #136**

Ways of War - Roman

- **Roman god of war was Mars**
  - **Which is why Mars is "Red Planet"**
- **Mars' children**
  - **Phobos = fear**
  - **Deimos = panic**
  - **(these are moons of Mars)**

The Warrior Monk
General James Mattis

"I come in peace. I didn't bring artillery. But I'm pleading with you, with tears in my eyes: if you f*ck with me, I will kill you all.

— Meeting with tribal leaders early in Iraq War

"Be polite, be professional, but always have a plan to kill everyone you meet."

— On how to succeed in Iraq

"No better friend, no worse enemy." - His philosophy, adapted from a maxim often attributed to the Roman general Lucius Cornelius Sulla

"If we are to keep this great big experiment called America alive - and that's all it is, an experiment - we need cocky, macho, unselfish, and morally very straight young men and women to lead our forces against the enemy. Your job, my fine young men and women, is to find the enemy that wants to end this experiment and kill every one of them until they are so sick of the killing that they leave us and our freedoms intact.

— 2004 speech to midshipmen at Naval Academy

"If you don't fund the State Department fully, then I need to buy more ammunition ultimately. The more that we put into the State Department's diplomacy, hopefully the less we have to put into a military budget.

— 2013 congressional testimony

Ways of War - American

- **Second generation warfare**
  - **Attrition warfare involving mass + high technology**
    - **- William Lind**
- **The pursuit of a crushing military victory - either through a strategy of attrition or one of annihilation - over an adversary**
  - **- Russell F. Weigley, The American Way of War: A History of US Military Strategy and Policy**

Ways of War - Western

- **Decisive combat by heavy infantry**
  - **- Victor Davis Hanson**
- **Underlying values of Western culture - its traditions of rationalism, individualism, civic duty - led to decided technological dominance and to decisive advantages in military organization, discipline, morale, initiative, flexibility, command…these advantages made Western armies and navies more successful in combat than their counterparts in other cultures.**
  - **- Victor Davis Hanson, Carnage and Culture**
- **Predominance of concept of annihilation - head to head battle that destroys the enemy - war is a means of doing what politics cannot.**
  - **- Victor Davis Hanson, Carnage and Culture**

Ways of War - Arab

- **Assassin based warfare**
- **Travel by air allows them to deploy anywhere**
- **Make use of liberal immigration policies of West**
- **Soldiers are male, middle class, well educated, religiously fervent**
- **Is parasitic in relying on locals**
- **Local fellow travelers provide support**
- **Command + Control (C2) via commercial communications + cryptography**
- **Weapons commercially acquired**

- CAPT Peter Layton RAAF, The New Arab Way of War, US Naval Institute Proceedings, March 2003

Ways of War - Arab

- **Mimics precision strategic air attacks of West**
- **No state involvement -> confuses + frustrates legally justifiable response -> lack of obvious state opponents frustrates West**
- **Cheap to finance**
- **Deliberately targets civilians -> guarantees media coverage, affects national will**
- **Is intentionally contrary to modern international rules of war**

- CAPT Peter Layton RAAF, The New Arab Way of War, US Naval Institute Proceedings, March 2003

Ways of War - Tribal

"Tribal and clan chieftains did not employ war as a cold-blooded and calculated policy instrument…Rather, it was fought for a host of social-psychological purposes and desires, which included…honor, glory, revenge, vengeance, and vendetta."

- Harry Turney-High (anthropologist)

- Each tribal culture is unique, each will fight in its own way

- For tribes, war is a first resort rather than a last one…their leaders simply like to fight

  - Their reasons are tied up with pride, vengeance + martial religiosity and cannot be gratified through negotiations

- Robert D. Kaplan, The Tribal Way of War, Wall Street Journal, July 19, 2006

Ways of War - Chinese

"The Chinese way of war is indirect. In most cases that means China will engage us with 'soft power' as she is already doing on multiple fronts."

- William Lind, War with China?, On War #117

Ways of War - Chinese

"To subdue the enemy without fighting is the acme of skill"
- Sun Tzu

"Thus the highest form of generalship is to foil the enemy's plans;
the next best is to prevent the junction of the enemy's forces;
the next in order is to attack the enemy's army in the field;
and the worst policy of all is to besiege walled cities"
- Sun Tzu

"All warfare is based on deception"
- Sun Tzu

Ways of War - Chinese

- **Shock is hallmark of Western way of war**
  - **Sword is weapon of choice**
    - **Hand to hand combat is the norm**
- **Shock is not the hallmark of Chinese way of war - battle is fought at a distance**
  - **Bow is weapon of choice**
    - **The decisive moment / tipping point is mental - not physical**
    - **Two armies stand still on battlefield firing arrows + rockets at each other until one side panics + runs**
- **To Chinese, war is a mind game**
  - **Ruse, cunning, deception are**
    - **Central to Chinese way of war**
    - **Adjuncts to Western way of war**

- Laurent Murawiec, Chinese Grand Strategy and the Chinese Way of War

Ways of War - Chinese

- **The Art of War is a Daoist textbook of war**
  - **To be successful war must be waged according to the Dao**
  - **The warrior must be in the image of Daoist saint**
  - **To wage war successfully is to minimize one's expenditure of energy + maximize the enemy's expenditure of energy**
    - **The acme of skill is to spend no energy…operate in the mode of non-acting…therefore all war is deception and in war deception is one of the principle means of forcing the opponent to expend his energies in vain while conserving one's own**
- **Daoist principle of non-acting is an indirect strategy…never confront a stronger enemy…don't attack an enemy's strengths, but their weaknesses**

- Laurent Murawiec, Chinese Grand Strategy and the Chinese Way of War

Ways of War - Chinese

"There is a distinct set of characteristics that guide how China's strategic thinkers approach matters of war and strategy.

First, geopolitical criteria rather than operational performance provide the primary basis for evaluating military success.

Second, while serious thought and calculation appear to go into determining when and how military power is to be used, Chinese strategists do not demonstrate much reluctance to use force. Indeed they are prone to significant, albeit calculated, risk-taking.

Third, when employing military power, the emphasis is on Chinese forces seizing and maintaining the operational initiative.

Fourth, it is imperative that China leverage modern technology to gain the edge in any conflict."

- Laurent Murawiec, Chinese Grand Strategy and the Chinese Way of War

Communications Case Study Summary - Great Wall of China

- **Goal**
  - **Provide unifying infrastructure for Chinese Empire:**
    - **Defense from those outside to the north (horsemen)**
    - **Communications for those within Chinese Empire**
- **Center of Gravity (Strategy)**
  - **Tear down existing walls between states**
  - **Build "Ten Thousand Li Wall" (li = 0.33 miles)**
- **Technology / Equipment**
  - **"Build according to the nature of the land and take materials from the land"**
  - **First tamped earth (Qin) ~ Later brick and stone (Ming)**
    - **- Daniel Schwartz, The Great Wall of China, pp. 219-223**

Communications Case Study Summary - Great Wall of China

- **Training ~ Leadership ~ Morale**
  - **Wall begun by first Chinese Emperor - Qin Shi Huang ~ 217 BC**
  - **Successive dynasties worked on wall**
  - **Wall last improved by Ming ~ 1450**
  - **Initially used corvee laborers ~ later used soldiers**
- **Tactics**
  - **Watchtowers ever 100 yards, fortified gates, 1,000 castles, 10,000 beacons**
  - **In Ming times garrisoned by 1 million troops**
  - **Signals sent via beacons using smoke during day or fire at night ~ Cover 1,000 li in minutes**
    - **[According to Lindesay p. 27 messages relayed 1,000 km in 24 hours]**
      - **- Daniel Schwartz, The Great Wall of China, pp. 219-223**

Communications Case Study Summary - Great Wall of China

- **Intangibles ~ Mistakes**
  - **Under continuous construction for 2,000 years**
- **Outcome**
  - **Worked well militarily**
  - **Worked well as communications medium**
  - **Worked well economically - encouraged settlement in north of China and protected Silk Road trade**
  - **Promoted cultural exchange throughout its length**
  - **Now a well regarded consumer brand in China**
    - **- Daniel Schwartz, The Great Wall of China, pp. 219-223**

Class Simulation

- **Philosophical aspects**

Poem

Half a league, half a league,
Half a league onward,
All in the valley of Death
Rode the six hundred.
'Forward, the Light Brigade!
Charge for the guns!' he said:
Into the valley of Death
Rode the six hundred.

II.
'Forward, the Light Brigade!'
Was there a man dismay'd ?
Not tho' the soldier knew
Some one had blunder'd:
Their's not to make reply,
Their's not to reason why,
Their's but to do and die:
Into the valley of Death
Rode the six hundred.
          - Alfred Lord Tennyson, The Charge of the Light Brigade

Questions for Further Discussion

- **Compare and contrast the ideas of Sun Tzu / Clausewitz / Boyd / Lind**

- **Compare and contrast the Western / Arab / Eastern ways of war**

- **Can a militarist be an intellectual?**

Reading Assignments

- **How to Make War Chapter 15**
- **TED Talks for this Topic**
  - **http://www.warstudiesprimer.org/ToLearnMore.html**

Recommended Reading to Learn More

- **Non-fiction**
- **Fiction**
- **Movies**
- **Simulations**

Conclusion

"People, Ideas, and Hardware. In that order!"
- John Boyd

"Machines don't fight wars. People do, and they use their minds."
- John Boyd

Topic 4

Almost As Good As the Sims / That Wasn't in the Sims

Tools for Studying War / Wargaming

Song

I'm gonna lay down my burden, down by the riverside,
Down by the riverside, down by the riverside
I'm gonna lay down my burden, down by the riverside,
I'm gonna study war no more

I ain't a gonna study war no more, I ain't a gonna study war no more
I ain't a gonna study war no more, I ain't a gonna study war no more
I ain't a gonna study war no more, I ain't a gonna study war no more

Well, I'm gonna put on my long white robe, (Where?) down by the riverside (Oh)
Down by the riverside, down by the riverside
I'm gonna put on my long white robe, (Where?) down by the riverside
I'm gonna study war no more

(Chorus)

Well, I'm gonna lay down my sword and shield, (Where?) down by the riverside
Down by the riverside, down by the riverside
I'm gonna lay down my sword and shield, (A-ha) down by the riverside
I'm gonna study war no more

(Chorus)
- Sy Oliver, Down By The Riverside

Thematic Quote

"The real thing didn't measure up. It was not realistic" (compared to the sims)

- Tom Wolfe, The Right Stuff, on Alan Shepard's flight in Freedom 7

"Was that ever a sim! There were so many warning lights up there I couldn't read them all!"

- Andrew Chaikin, A Man in the Moon, on the Apollo 12 launch which was hit by lightning

"That's one of the better sims, believe me."

- Pete Conrad, on the Apollo 12 launch

Thematic Quote

"The enemy we're fighting is different than the one we'd war-gamed against, because of these paramilitary forces. We knew they were here, but we did not know how they would fight."

- Lt. General William Wallace, Commander V Corps, Iraq, March 2003

The Painting

Painting Name

- Artist's Name

(Location of painting)

The Question

What can we learn from wargames?

Can lessons from history facilitate our understanding of contemporary conflicts and assessment of future risks?

Survey

- **How many have played chess?**
- **How many have played a first person shooter?**
- **How many have played a real time strategy game?**
- **How many have played a flight simulator?**
- **...then you are all wargamers!**

The First Wargame?

- **Ludus latrunculorum**
  - **Strategy board game played by ancient Greeks + Romans - excavated in Roman Army barracks in England**
  - **A game of military tactics**
  - **May resemble chess**

Brief History of Successful Wargaming

- **Chess**
- **Kriegsspiel and Prussian Army**
  - **Baron Von Reisswitz ~ 1811**
  - **Popularized by his son, who eventually committed suicide as game had enemies in Prussian Army**
- **US Naval War College in 1920's**

  "The war with Japan had been [enacted] in the game room here by so many people in so many different ways that nothing that happened during the war was a surprise…absolutely nothing except the Kamikaze…"

  - Admiral Chester Nimitz

  - Matthew Caffrey, Towards a History Based Doctrine for Wargaming

Focused Case Study - Little Wars

- **First professionally published set of miniature wargame rules - 1913**

- **Technological advance in toy design led to advance in state of the art in game design**

  - **Creation of the spring breech-loader gun**

- **Quite simplistic rules**

- **Quite sophisticated lessons learned**

    - Greg Costikyan, Little Wars and Floor Games: An Introduction

Little Wars Lessons Learned

"And if I might for a moment trumpet! How much better is this amiable miniature than the Real Thing! Here is a homeopathic remedy for the imaginative strategist. Here is the premeditation, the thrill, the strain of accumulating victory or disaster--and no smashed nor sanguinary bodies, no shattered fine buildings nor devastated country sides, no petty cruelties, none of that awful universal boredom and embitterment, that tiresome delay or stoppage or embarrassment of every gracious, bold, sweet, and charming thing, that we who are old enough to remember a real modern war know to be the reality of belligerence.

My game is just as good as their game, and saner by reason of its size. Here is War, done down to rational proportions, and yet out of the way of mankind, even as our fathers turned human sacrifices into the eating of little images and symbolic mouthfuls."

   - H.G. Wells, Little Wars, pp. 97-100

Little Wars Lessons Learned

"I would conclude this little discourse with one other disconcerting and exasperating sentence for the admirers and practitioners of Big War. I have never yet met in little battle any military gentleman, any captain, major, colonel, general, or eminent commander, who did not presently get into difficulties and confusions among even the elementary rules of the Battle. You have only to play at Little Wars three or four times to realize just what a blundering thing Great War must be.

Great War is at present, I am convinced, not only the most expensive game in the universe, but it is a game out of all proportion. Not only are the masses of men and material and suffering and inconvenience too monstrously big for reason, but--the available heads we have for it, are too small. That, I think, is the most pacific realization conceivable, and Little War brings you to it as nothing else but Great War can do."

- H.G. Wells, Little Wars, pp. 97-100

The Western Approaches Tactical Unit Wargame

"...the Captain [...] was away: he had, in fact, gone back to school. For a fortnight he had been at Liverpool, caught deep in the toils of something which, innocently labelled 'Commanding Officers' Tactical Course', had proved an ordeal of the most daunting kind. The course was intended to illustrate the latest developments of the war in the Atlantic, and to provide a practice ground for close study of them: there was a series of lectures, and then, each afternoon, the officers under instruction were installed in a large empty room, on the floor of which was a 'plot', with models to illustrate the convoy, the escort, and the threatening enemy. The 'convoy game' began: 'sighting reports' came in, bad weather was laid on, ships were sunk: U-boats crowded round, and the escorts had to work out their counter-tactics, and put them into effect, as they would do at sea. A formidable RN captain was in charge: and large numbers of patient Wrens stood by, moving the ship models, bringing the latest 'signals', and sometimes discreetly advising the next course of action. Rather unfairly, they seemed to know all about everything."

- Nicholas Monsarrat, The Cruel Sea

How Wargames are Misused

- **Battle of Midway**
  - **Japanese refloating aircraft carriers that had been sunk by US**

How Wargames are Misused

- **Millennium Challenge 2002**
    - **Wargame of transformation / network-centric warfare for Blue**
    - **Red applies asymmetrical thinking to conflict at sea**
        - **Uses motorcycle messengers for communications to evade Blue electronic eavesdropping**
        - **Shadows US fleet with small craft, using morning call to prayer to issue attack order**
        - **Launches preemptive coordinated cruise missile and suicide bomber ship swarming attacks on US fleet, sinking 16 ships including aircraft carrier**
    - **Blue refloats ships that had been sunk, restarts game**

- Thom Shanker, Iran Encounter Grimly Echoes '02 War Game, New York Times, Jan. 12, 2008

Wargaming Today

- **Board games (mechanics and values open to inspection) vs. computer games (mechanics and values a black box)**
- **Military wargames**
    - **Large expensive games**
    - **Small cheap games for soldier's XBox / PC**
        - **Army - VBS2, Full Spectrum Warrior**
        - **Marines - VBS2, Close Combat: First to Fight, TacOps**
        - **Navy - 688(I) Hunter Killer Sub Simulator / Jane's Fleet Command**
    - **Massively Multiplayer**
        - **There / Forterra - Asymmetric Warfare Environment**
- **Political / Military games**

Red Flag / Top Gun and National Training Center

- **In Vietnam, if pilot survived first 8 missions, his odds of surviving his tour increased dramatically**
  - **There is a learning curve in combat**
- **Question - can that learning curve be acquired in peacetime?**
  - **Navy - Top Gun**
  - **Air Force - Fighter Weapons School / Red Flag**
  - **Army - National Training Center (NTC)**
- **Answer - Iraq I, Kosovo, Afghanistan, Iraq II**
  - **"The NTC was much harder than the Iraqis…"**
    - **Matthew Caffrey, Towards a History Based Doctrine for Wargaming**

Just Like the Sims

- **Ctrl+Alt+Delete is as basic as ABC**
  - **Soldiers being trained right now grew up with Gameboys**
  - **Soldiers play videogames during downtime**
    - **Halo / Full Spectrum Warrior / SOCOM / etc**
  - **Soldiers in this generation are less inhibited pointing their weapons at someone**
  - **These soldiers are more knowledgeable about their weaponry and have basic skill set how to use them**
  - **Today's soldiers, having grown up with first person shooters as teens, are the new Spartans**
    - **"Remember the days of old Sparta, when everything they did was towards war? In many ways, the soldiers of this video game generation have replicated that"**
      - **Col. Gary W. Anderson, USMC**
- **Jose Antonio Vargas, Virtual Reality Prepares Soldiers for Real War, Washington Post, Feb. 14, 2006**

Wargaming in the US Marine Corps Today

- **Computer wargames used**
  - **TacOps MC ~ Close Combat MC ~ Close Combat First to Fight**
- **Why use computer wargames**

  "I am an infantry major with over 15 years commissioned service…I have commanded two infantry platoons and one rifle company…I have taught infantry tactics"

  "None of these activities or learning experiences can match the effective and focused tactical learning that I have experienced through repetitive fighting of the small unit scenarios in Close Combat."

  "Close Combat permits a player to fight hundreds of scenarios, make thousands of tactical decisions, experiment with different tactics, and learn from his mistakes."

  - Brendan B. McBreen, Close Combat and Learning Infantry Tactics, Marine Corps Gazette, Sept 2004 pp. 12-13

What Is Wargaming Good For?

- **Wargaming is not only a tool for learning or simulating history…**
    - **(Learning from the past)**

- **…it is more importantly a tool for teaching critical decision making - especially when coupled with reflection via after-action reviews**
    - **(Learning for the future)**

        - Consensus of Connections Conference 2011

What is Wargaming Good For?

"What all these myriad forms of wargames have in common is this: people have to make decisions in a competitive environment and they have to live with the consequences of those decisions in that environment...The key words in wargames are 'people' and 'decisions.'"

- Peter Perla, The Art and Science of Wargaming, lecture at Kings College London Dec. 7, 2018

Why They Do This

"He (Ruhnke) sees people just like us having epiphanies through gamed agitation, quick bonds such as ours forged within an intense, inhabitable narrative. But mostly his goal is as unique as it is stark: to educate by providing tabletop insurgencies for any board gamer who would like one."

- Jason Albert, In the World of War Games, Volko Ruhnke Has Become a Hero, Washington Post, Jan 10, 2014

"I wanted to improve policy by elevating the debate. Providing information and analysis gives the best chance of pursuing the right strategy."

- Volko Ruhnke, Designer of Labyrinth: The War on Terror, 2001-? and A Distant Plain: Insurgency in Afghanistan

What Serious Games Can Teach

- **The Seven Stages of Learning**
  - **Overload and confusion**
    - **Wrestle with multiple, simultaneous, interlocking, impossible real world problems**
  - **Failure**
    - **Initial plans go awry - failure is gateway to new solutions**
    - **Questions to ask - What possibilities have we missed? What lies beyond what we can easily see? How are things different than they seem?**
  - **Personal understanding**
    - **Of their strengths, weaknesses, potentialities, and contributions of others - helps them create new solutions**
  - **Collaboration**
    - **Improves - What can't be done alone may be done together - What affects one of us affects all of us**
    - **- John Hunter, World Peace and Other 4th Grade Achievements**

What Serious Games Can Teach

- **The Seven Stages of Learning**
  - **"Click"**
    - **Breakthrough made in resolving some major challenges - Suddenly "Get it" - Stimulated by use of Empty Space or by reaching an impasse**
  - **Flow**
    - **Enthusiastic embracement of challenge of overcoming new obstacles**
  - **Application of understanding**
    - **Learn how to apply skills honed in game in broader sense**
    - **Only way to successfully play, is to play it as a group, to become part of something larger than themselves + decide together how to move forward**
- **Power of an Empty Space**
  - **Quiet place to ponder next move when they don't know what to say or do**
  - **Making room around a problem + simply observing or engaging in play rather than focused intense work allows click to occur**
    - **- John Hunter, World Peace and Other 4th Grade Achievements**

Perspective

"I know there exist many good men, who honestly believe that one may, by the aid of modern science, sit in comfort and ease in his office chair, and with little blocks of wood to represent men or even with algebraic symbols, master the great game of war. I think this is an insidious and most dangerous mistake. … You must understand men, without which your past knowledge were vain."

- William T. Sherman

The Difficulty of Simulating War

"What was it really like? Unfortunately, I don't know. Despite 30 years of study and almost 10 years of Civil War reenacting I feel that my understanding of the Civil War battlefield will always be incomplete. The more I learn the more I realize how little I know…I have not experienced battle, but I believe that it has to be one of the most confusing and horrible experiences known to man. And the Civil War, in terms of carnage per unit area and time, was one of the worst…

By studying these records and in participating in many battle reenactments, I have begun to discern a pattern, and that pattern was, that there was no pattern."

- John Hill, Designer's Notes, Johnny Reb III

The Difficulty of Simulating War

"Battle, was the ultimate stress situation. The noise alone often made conversation between adjacent men exceptionally difficult…In such an environment I am lead to believe that an atmosphere of swift change and constant crises was the defining element of the Civil War battlefield, and in reality, most of the participants may have had very little control over what was happening. Often, once the armies were engaged, the higher the level of command, the less control you had.

So, in many respects, this game despite its wealth of detail and ten years of evolution cannot even begin to simulate the sweeping maelstrom of Civil War battle. It is, at best, a pale reflection of the actual event."

   - John Hill, Designer's Notes, Johnny Reb III

Case Study Summary - Northern Ireland Wargame

- **Goal**
  - **British Army - keep peace ~ Irish civilians - stir up trouble ~ IRA - kill Brits**
- **Center of Gravity (Strategy)**
  - **IRA - use Irish civilians to stir up British causing them to retaliate**
- **Equipment**
  - **British Army - armored cars / tear gas / rubber bullets ~ Irish civilians - voices ~ IRA - Molotov cocktails, rifles**
- **Training / Leadership / Morale**
  - **British Army - professional ~ Irish civilians - passionate ~ IRA - clever**
- **Tactics**
  - **British Army - patrolling ~ Irish civilians - marching ~ IRA - terrorism**
- **Intangibles / Mistakes**
  - **Irish civilians - too aggressive in marching ~ IRA - uses civilians as cover to attack British patrol ~ British Army - fires on civilians with real bullets slaughtering them**
- **Outcome**
  - **British Army - lost ~ Irish civilians - martyred ~ IRA - won**
  - **Rough approximation of Bloody Sunday**

Case Study Summary - America Held Hostage Wargame

- **Goal**
  - **US - rescue hostages ~ Iran - keep hostages**
- **Center of Gravity (Strategy)**
  - **US - speed + surprise - rescue hostages before Iranians mobilize**
- **Equipment**
  - **US - high tech for 1980 ~ Iran - rifles, unarmed suicide charges**
- **Training / Leadership / Morale**
  - **US - Delta Force ~ Iran - passionate nationalists**
- **Tactics**
  - **Based on OSINT from Life Magazine**
  - **US - helicopter assault directly into embassy compound ~ Iran - never stop charging + firing**
- **Intangibles**
  - **US - How many Iranians can you kill and still call mission a success?~ Iran - how quickly will they realize what is happening + mobilize + storm embassy**
- **Mistakes / Outcome**
  - **Hostages rescued successfully ~ bloody fight to get everyone out of embassy compound**
  - **BlackHawk Down 15 years before the fact**

Computing Case Study Summary - Analog Computer / Sand Table

- **Goal / Center of Gravity (Strategy)**
  - Simulate Soviet invasion of Germany ~ Fight a delaying action
- **Technology / Equipment**
  - Terrain table represents terrain in Area of Responsibility of US 3rd Infantry Division in Cold War around Hassfurt, Germany
  - Terrain table belonged to US 1st Infantry Division at Fort Riley who was the 3rd Infantry Division's Reforger unit
  - Table scale is 1" = 50 meters ~ Table is 3 x 7 feet (2000 x 4000 meters) ~ Table is 1 of 16
  - Miniatures were lead in 1/285 scale from GHQ
- **Training / Leadership / Morale**
  - Rules = The THREAT (Other rules were Dunn-Kempf adapted from WRG)
- **Tactics / Intangibles / Mistakes / Outcome**
  - Well received / Highly successful
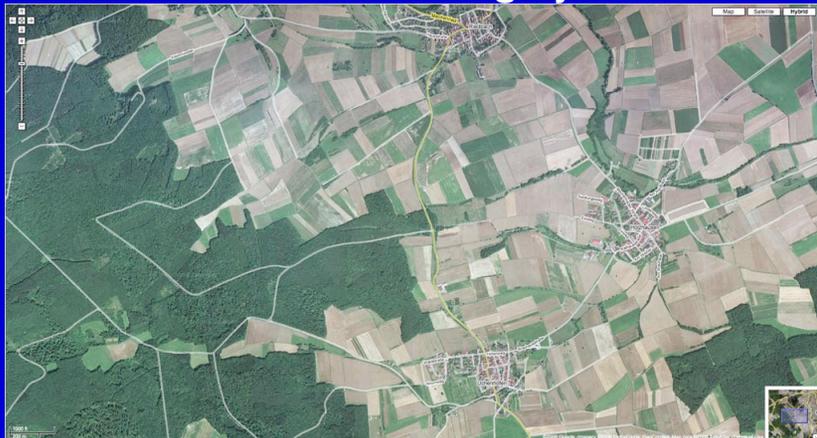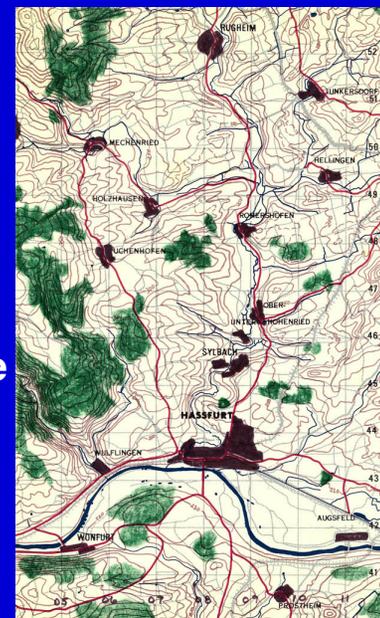
Focused Case Study - Gulf War I Open Source/Commercial Wargames

- **Gulf Strike - 1983 - Mark Herman**
  - **August 2, 1990 - Iraq invaded Kuwait**
  - **Pentagon approaches him at 10 am, signs contract at 2 pm, game begins 3 pm ~ Showed Iraq was doomed**
  - **Provided basis for much of decision making in August**
    - **James F. Dunnigan, The Complete Wargames Handbook Revised Edition, p. 256**
- **Arabian Nightmare - 1990 - James F. Dunnigan**
  - **First time professional quality wargame available to civilians during war**
  - **Optimal strategy - use airpower to weaken Iraqi army, conduct left hook outflanking maneuver**
  - **Predicted battle would be easy ~ casualties low**
- **James F. Dunnigan + Austin Bay, From Shield to Storm, pp.403-419**

Focused Case Study - Desert Crossing - The General's View

- **US policy of containment towards Iraq 1991-2003**
- **Operation Desert Fox in 1998 leads to question:**
  - **What if Iraq implodes - rather than explodes**
- **Wargamed Iraq implosion with Booz Allen in 1998**
  - **Asked question - what is required to reconstruct Iraq?**
  - **Was prescient - identified all problems seen since 2003**
    - **Suggested need to quickly establish security by using extra US troops and keeping Iraqi army intact, have nationwide occupation authority**
- **No one in US government interested in planning for eventuality of Iraqi implosion - so CENTCOM started planning - called it Desert Crossing**
  - **In 2002 CENTCOM reminded of Desert Crossing plan - were not interested in it**
  - **- Anthony Zinni, Battle Ready, end of Chapter 1**

Focused Case Study - Desert Crossing - The Designer's View

- **Purpose of wargame was to identify what would happen after fall of Saddam Hussein - issues such as security, reconstruction, humanitarian aid, economic development, political stability**

- **Zinni's questions to be answered by wargame**
  - **What are key US decision points + conditions for intervention?**
  - **How do US + allies manage Iraq's neighbors + other influential states?**
  - **How does US build + maintain coalition?**
  - **What are major refugee assistance challenges external to Iraq?**
  - **What is appropriate role for co-opted elements of Iraqi military?**
  - **How can coalition contain Shia + Kurdish threats to stability of Iraq + prevent fragmentation?**
  - **What is US role in establishing transnational government in Iraq?**
  - **How can coalition synchronize humanitarian assistance + civil + military activities during combat +/or peace enforcement operations?**
  - **How do allies reestablish civil order in the wake of combat operations?**
  - **What is US exit strategy + long-term presence in Iraq?**

- Mark Herman + Mark Frost + Robert Kurz, Wargaming For Leaders, pp. 44-52

Focused Case Study - Desert Crossing - The Designer's View

- **Lessons Learned**
  - **Planning - The US cannot afford to wait until after intervention begins to orchestrate interagency coordination + planning**
    - **Failing to do so will lose the peace**
  - **Military Action - Should be swift, large-scale, decisive - not only to overwhelm Saddam's military but also to demonstrate show of force to minimize violence + ensure security**
    - **Be prepared for unrest / insurgents**
  - **Political Stability - Regime change may not enhance it, Iraq's neighbors may try to take advantage, particularly if there is internal fragmentation**
    - **Iran was the key player**
  - **Leadership in Iraq - Crucial to identify potential Iraqi leaders well in advance of regime change**
    - **No one could be identified**
  - **Exit Strategy - Preferred end state was unified country with self-reliant political + economic systems, stable security environment free from internal + external threats, respect for human rights + decent treatment of own people, recognition of its international borders + obligations**
    - **Could take years**

- Mark Herman + Mark Frost + Robert Kurz, Wargaming For Leaders, pp. 44-52

Personal Case Study - Simulations Publications, Inc. (SPI)

- **Role - Premier wargame publisher in 1970's**
- **Story - The SPI Way - everything a modern organization strives to be**
  - **A knowledge organization - intellectual capital of its personnel was its most valued asset**
  - **Utilized open source intelligence with customers as sources**
  - **Data driven - everything fed into a computer (in 1972!)**
  - **Customer-centric**
    - **Involved customers in company decisions through feedback cards and convention face-to-face meetings / roasts / seminars**
    - **Let customers be exposed to workings of company through Out Going Mail**
    - **Customers felt they were part of company and were fanatically loyal**
  - **Lean in personnel ~ flattened hierarchy ~ celebrated diversity / eccentricity / geekiness / uniqueness of staff**
  - **Located near, but not too close, to customers**
  - **Outsourced production ~ Just in time getting products to market**

Personal Case Study - The Power of Serious Games - Evan D

- **Role**
  - **Child who plays Serious Games**
- **Story**
  - **In Truman Presidential Library and Museum Postwar Challenges Gallery**
  - **Father begins to explain to 10 year old son how to convert a wartime economy to a peacetime economy**
  - **Son interrupts father, saying "I know all about it Dad, I've done it dozens of time in Civilization. Let me tell you what strategy works best…"**
  - **Truman had just one shot to get it right, the child has studied it multiple times from all angles**

Personal Case Study - Gary M

- **Role - First Sergeant US Army (ret), Specialist Cubic Defense Applications**
- **Story**
  - **License plate = WARGAMR**
  - **Started gaming at age 12, "Tactics" by Avalon Hill**
  - **Saw micro armor for first time in Germany 1973**
    - **Became post go to person for simulation ever since**
    - **Gamed at bases to teach tactics**
    - **Developed his own rule set = The THREAT**
      - **Most important part of game is After Action Review**
  - **"Tactics have not changed since Sun Tzu…Once you have a grounding in tactics you can game and win any time period"**
    - **Remembered wargames as if he lived them**
  - **Now helping Army to virtualize its gaming via portable simulators**
  - **What started as hobby 40 years ago is now standard operating procedure**

Class Simulation

- **Wargaming aspects**

Poem

If you could hear, at every jolt, the blood
Come gargling from the froth-corrupted lungs,
Obscene as cancer, bitter as the cud
Of vile, incurable sores on innocent tongues,-
My friend, you would not tell with such high zest
To children ardent for some desperate glory,
The old Lie: Dulce et decorum est
Pro patria mori.

                          - Wilfred Own, Dulce et Decorum Est, 1917

Questions for Further Discussion

- **Does playing first person shooter videogames desensitize soldiers to violence?**

- **What aspects of war cannot be simulated by wargames?**

Reading Assignments

- **TED Talks for this Topic**
  - **http://www.warstudiesprimer.org/ToLearnMore.html**

Recommended Reading to Learn More

- **Non-fiction**
  - **James F. Dunnigan - The Complete Wargames Handbook**
- **Fiction**
  - **Orson Scott Card - Ender's Game**
- **Movies**
- **Simulations**

Conclusion

"How do you get to Carnegie Hall? Practice!"

- Jascha Heifitz, violinist

Conclusion

"...my idea of what a historical board game should aim for these days...simple, fun, and with some tweaking is broadly reflective, with considerable play depth..."

- Stephen Newberg

Conclusion - Counterfactuals Anyone?

"I was always thinking that one day the right technology would come into my life..." (that would let him set up historical counterfactuals)

(In playing Muzzy Lane's 'Making History')...I found that my scenarios weren't as robust as I thought. And that's really exciting, because normally counterfactuals happen in my head. Now they can happen on the screen.

Serious games are the next big platform..."

- Professor Niall Ferguson

- Clive Thompson, Why a Famous Counterfactual Historian Loves Making History With Games, Wired, May 21, 2007

Topic 5

Follow Me!

Leadership and Personnel and Training

Song

This is the Army Mr. Jones,
No private rooms or telephones,
You had your breakfast in bed before,
But you wont have it there any more.

This is the Army Mr.Green,
We like the barracks nice and clean,
you had a housemaid to clean your floor,
but she wont help you out any more.

Do what the buglers command,
They're in the army and not in a band…

- Irving Berlin, This is the Army Mr. Jones

Thematic Quote

"We few, we happy few, we Band of Brothers, For he to-day that sheds his blood with me shall be my brother; be he ne'er so vile, this day shall gentle his condition;

And gentlemen in England now a-bed shall think themselves accursed they were not here, and hold their manhood's cheap whiles any speaks that fought with us upon Saint Crispin's day."

- Shakespeare, Henry V

Thematic Quote

"Perpetual optimism is a force multiplier"
- Colin Powell

The Painting

George Washington Crossing the Delaware

   - Emanuel Gottlieb Leutze

   (Metropolitan Museum of Art)

The Question

For if the trumpet give an uncertain sound, who shall prepare himself to the battle?

- I Corinthians 14: 8

Why Leadership is Important - Leadership on D-Day

"When you talk about combat leadership under fire on the beach at Normandy, I don't see how the credit can go to anyone other than the company-grade officers and senior NCOs who led the way. It is good to be reminded that there are such men, that there always has been, and always will be. We sometimes forget, I think, that you can manufacture weapons, and you can purchase ammunition, but you can't buy valor and you can't pull heroes off of an assembly line."

- Sgt John Ellery, 16th Inf Reg, 1st Division, USA

What Makes a Good Leader

"The two essentials of command for a leader are to take care of his troops and to execute his mission, while asking no more of subordinates than he asked of himself"

- Rick Atkinson

What Makes a Good Leader

"When pressure mounts and strain increases everyone begins to show weaknesses in his makeup. It is up to the Commander to conceal his: above all to conceal doubt, fear, and distrust"

- Dwight David Eisenhower

What Makes a Good Leader

"As you know, the fortunes of war vary, but if you desire a good outcome, you must keep your courage intact."

- Henry V

What Makes a Good Leader

"I cannot trust a man to control others who cannot control himself."

- Robert E. Lee

Leadership Over Management

"My grandfather, who commanded a carrier task force in the Pacific during World War II…was revered for his gregarious, salty attitude, and for his keen interest in his sailors and their thoughts on just about any subject. He made it a point to talk with pilots after they returned from a strike, asking them, "Do you think we're doing the right thing?" Here was a three-star admiral, taking time during the course of war to receive honest feedback from men under his command. My grandfather knew that if you ever stopped learning, especially from your men, then you also stopped leading. And he knew how to lead.

Today, we hear a lot about "management" and not enough about leadership. That worries me. One thing of which I am certain, there is a great difference between managers and leaders. Good managers are plentiful-in fact, our nation graduates over 150,000 MBAs every year. But true leaders are rare. And believe me, there is a difference:

• Leaders inspire people; managers, well, they "manage" people and assets.• Leaders think about protecting and promoting their people; managers think about protecting their own careers.• Leaders take charge and accept responsibility; managers often pass the buck to higher authority for fear of making a wrong decision.• Leaders take risks when necessary; managers are taught to avoid risks whenever possible."   -Senator John McCain, Speech at Tailhook 2011

What A Good Unit Feels Like

"What is the essence of a 'good climate' that promotes esprit and gives birth to 'high performing units'? It is probably easier to feel or sense than to describe. It doesn't take long for most experienced people to take its measure. There is a pervasive sense of mission. There is a common agreement on what are the top priorities. There are clear standards. Competence is prized and appreciated. There is a willingness to share information. There is a sense of fair play. There is joy in teamwork. There are quick and convenient ways to attack nonsense and fix aberrations in the system. There is a sure sense of rationality and trust. The key to the climate is leadership in general, and senior leadership in particular."

- Lt. General Walter Ulmer

What We Are Looking For

"For from his Mettle, was his Party steel'd"

- William Shakespeare's eulogy for a rebel commander who died in a doomed uprising against King Henry IV

"Once more unto the breech, dear friends"

- King Henry V in William Shakespeare's Henry V

What a Leader Does

"Leadership is the art of getting someone else to do something you want done because he wants to do it."

- Dwight David Eisenhower

What a Leader Does

"A leader is a dealer in hope"
- Napoleon

"The general who does not advance to seek glory, or does not withdraw to avoid punishment, but cares for only the people's security and promotes the people's interests, is the nation's treasure. "

- Sun Tzu

"I used to say of him that his presence on the field made the difference of 40,000 men"

- Duke of Wellington on Napoleon

"An army of deer led by a lion is more to be feared than an army of lions led by a deer."

- Chabrias 410-375 BC

An Officer and a Gentlemen

"It is not the business of generals to shoot one another"

- Duke of Wellington refusing an artillery officer permission to fire on Napoleon during the Battle of Waterloo

Carl von Clausewitz on Leadership

- **Equanimity of character under pressure**
- **Strong constitution to survive campaigning**
- **Ability to see beyond fog of war and to process information rapidly**
- **"Ability to see on the other side of the hill" - understanding of geography**
- **…he felt these traits were all innate**

Zinni on Leadership

"The troops want leaders who understand them, fight for them, and appreciate what they are going through.

Credibility is lost in their eyes if their leaders are silent when things are not right.

To them that silence is either incompetence or careerism. It is not a demonstration of support."

- Anthony Zinni, Battle Ready p. 426

Sandy Woodward on Leadership

"With proper training and good morale and leadership, a unit can accomplish anything"

"Encourage and cultivate eccentricity"

"There is no such thing as a bad soldier, only a bad officer"

"The key to proper management is control"

"One of the keys to success is selection and maintenance of aim"

"Always maintain sight of your objectives"

"Maintaining the initiative is a principle of war"

- Admiral Sandy Woodward, One Hundred Days

One Mark of a Great Commander

"Willingness to support and promote (unconventional or difficult) subordinates who accept danger, demonstrate initiative, take risks, and come up with new ways toward mission accomplishment"

- General Hermann Balck

This Isn't a Democracy

"Armies have always been viewed with suspicion in democratic societies because they are the least democratic of all social institutions. They are, in fact, not democratic at all. Governments which have tried to…blur the distinction between officer and man have not been successful. Armies stand as disturbing reminders that democratic processes are not always the best, living and perceptual proof that, in at least this one area, the caste system works."

- Byron Farwell

What Makes a Good Leader

"Leadership in the infantry remained and still remains at a premium. At some stage in operations, the section, platoon, company, has to leave shelter and hazard itself in the open... The greater the risk of injury or death, the greater the need for leadership. Men do not obey an order in the heat of battle in mortal peril or a state of exhaustion because a man appointed formally to be their superior orders it. They obey only because they have confidence in the judgment and courage of the leader to carry them through the crisis. ... In the end, it is probable that the outcome of battle depends more on this man than any other."

- Anthony Farrar-Hockley, Infantry Tactics 1939-1945, p. 70

Toxic Leadership

"Toxic leaders leave the place worse than they found it. They put themselves ahead of the institution, and they deploy leadership and management tactics that advance their personal interests-even at the expense of colleagues or subordinates."

- James Holmes, The Terrifying Tale of How This U.S. Aircraft Carrier Nearly Sank (and It Was Not a Bomb or Torpedo), The National Interest, Aug. 14, 2017

What Makes a Good Leader - Time Management

"Loss of time cannot be made good in war"

   - Napoleon

"Time is that one quantity of the battlefield that can never be saved, slowed, reversed, or recovered…delays alone cause operations to fail"

   - General Bill Hartzog

"Time is the only thing in battle that is priceless and cannot be replaced…everything else is expendable, even human life…Proper use of time wins battles almost every time…So time management is one of the most important things you can do in modern combat"

   - Will ComOpsCtr

- Given enough time for analysis anyone can make the right decision
- Given limited time for analysis s/he who can make the right decision ends up being a great leader
  - This was what the Germans stressed in World War II

The Commander's Job

"A commander's job is to orchestrate and direct the three major dimensions of combat - space, time and force."

- Jonathan B. Parshall and Anthony P. Tully, Shattered Sword: The Untold Story of the Battle of Midway

"Nobody can actually duplicate the strain that a commander is under in making a decision in combat."

- Admiral Arleigh Burke

Leading From the Front

"Rommel would just disappear in his Storch (aircraft) or command car and they would have no idea where he was. Then they would get a message from him that he was at such and such a location, usually with a forward recon element. Then they would flow as much force as they could lay their hands on to that location. Rommel did the rest."

- General Von Mellenthin, Rommel's G-2 in North Africa, as told to Mark Herman

"The rear of an army is a very bad place to judge what is happening in the front"

- Ulysses S. Grant

On Leadership

"You have to lead men sometimes. As unit commander, you have to put words to the bonds of love they feel but may be too embarrassed to speak of - and to the secret aspirations of their hearts, which are invariably selfless and noble. More important, you have to take those actions yourself, first and alone, that they themselves know they should take, but they just haven't figured it out yet."

- Gentilhomme in The Profession by Steven Pressfield

What a Commander Is Interested In

- **The enemy's**
  - **Locations**
  - **Strength**
  - **Capabilities**
  - **Supply status**
  - **Morale**

The Burden of Command
D-Day Eve

- **Churchill passed the night playing cards with Pamela Digby, his daughter-in-law, so he wouldn't be alone**

- **Eisenhower composed this message in case of failure**

  "Our landings in the Cherbourg-Harve area have failed to gain a satisfactory foothold and I have withdrawn the troops. My decision to attack at this time and place was based upon the best information available. The troops, the air and the Navy did all that bravery and devotion to duty could do. If any blame or fault attaches to the attempt it is mine alone."

The Burden of Command

"In times of war the lives of men don't matter, nor do units matter. The only thing that matters is the accomplishment of the mission and the hardest thing a commander has to do every day is decide how many men he will kill that day to accomplish the mission"

- General Omar Bradley

"Now that sounds as cold as it can be, but if you are a military commander that's how you have to think about casualties. Military commanders sell the lives of their soldiers dearly to buy things, to buy advantage, to buy opportunity, to buy victory, to buy an objective. It is a hard thing for a commander to make that rationale and yet it has to be done because that is the coin of the realm in combat."

- Colonel Len Fullenkamp

Burden of Command

"But war is a ruthless taskmaster, demanding success regardless of confusion, shortness of time, and paucity of tools. Exact justice for the individual and a careful consideration of his rights is impossible. One man sacrifices his life on the battlefield and another sacrifices his reputation elsewhere, both in the same cause. The hurly burly of the conflict does not permit commanders to draw fine distinctions. To succeed, they must demand results, close their ears to excuses, and drive subordinates beyond what would ordinarily be considered the limit of human capacity. Wars are won by the side that accomplishes the impossible. Battles are decided in favor of troops whose bravery, fortitude, and especially, whose endurance surpasses that of the enemy's: the army with the higher breaking point wins."

- General George Marshall

The Burden of Command
USAAF Bomber Offensive Over Germany

Brig Gen Clifton I. Garnet: Casey, what's happened to you?

Brig Gen K.C. 'Casey' Dennis: The same thing that's going to happen to you. And the sooner I get out of here the sooner you'll get to work.

Brig Gen Clifton I. Garnet: Casey you've hated this, every minute of it, haven't you?

Brig Gen K.C. 'Casey' Dennis: Oh I've had worse commands. You can be glad you didn't have to run a Group. That is personal. You see them at meals and you get to know a lot of them. It's rough enough here when you have to start counting in the really bad ones you've ordered yourself. You'll find you'll get their faces all mixed up sometimes. The kids just coming in on the replacement trucks and the ones you've already killed. But then when you start feeling sorry for yourself, think of what they've got to go through. There's only one thing you can really do for them Cliff, make every one of them count. See that they're not used up for nothing. Maybe you can keep their kid brothers from coming over here.

- Command Decision

The Burden of Command Korean War

Mr. Truman,

As you have been directly responsible for the loss of our son's life in Korea, you might just as well keep this emblem on display in your trophy room, as a memory of one of your historic deeds.

Our major regret at this time is that your daughter was not there to receive the same treatment our son received in Korea

Signed

William Banning

[This letter, and the Purple Heart enclosed with it, were found in Harry S. Truman's desk after his death in 1972]

Leadership - Thunder Run

- ## Battle at Curly

  "Officers and senior NCOs are conditioned to bring order to chaos. Soldiers look to them in moments of fear and confusion for some marker of stability, of decisiveness. If the leaders hesitate, they sow panic in the ranks" (p. 227)

  - David Zucchino, Thunder Run

Leadership - Thunder Run

- **Battle at Larry, CAPT Dan Hubbard in command**

  "As the firefight intensified, Hubbard climbed down off his tank several times and made his way to the perimeter…Hubbard had been a Marine machine gunner in the Gulf War, a ground pounder, and he had drawn great inspiration from commanders who joined their men on the lines. Now he had sent his own men into harm's way, and he felt an obligation to expose himself to the same risk…He thought it was a chickenshit move to stay safely buttoned up in a tank while his infantrymen were putting their lives on the line. So he moved from man to man along the perimeter, slapping backs, telling each one he was doing a hell of a job, that he was an American hero. The little forays also gave Hubbard a chance to speak face-to-face with his platoon leaders and platoon sergeants. That was more satisfying, and more productive, than trying to communicate by radio." (p. 234)

  - David Zucchino, Thunder Run

From Where Do We Get Such Men and Women?

"And who are the young men we are asking to go into action against such solid odds? You've met them. You know. They are the best we have. But they are not McNamara's sons, or Bundy's. I doubt they're yours. And they know they're at the end of the pipeline. That no one cares. They know."

- An anonymous General to correspondent Arthur Hadley

Zinni on the Profession of Arms

"I am a Catholic. In my faith, we think of the priesthood as a calling - a 'vocation' - requiring total dedication. I looked at the 'call to arms' the same way. The warrior profession is a calling and requires the same kind of dedication the priesthood does."

- Anthony Zinni, Battle Ready, p. 52

The Warrior

"A warrior, once he reckons his calling and endures its initiation, seeks three things.

First, a field of conflict. This sphere must be worthy. It must own honor. It must merit the blood he will donate to it.

Second, a warrior seeks comrades. Brothers-in-arms, with whom he willingly undergoes the trial of death. Such men he recognizes at once and infallibly, by signs others cannot know.

Last, a warrior seeks a leader. A leader defines the cause for which the warrior offers sacrifice. Nor is this dumb obedience, as of a beast or a slave, but the knowing heart's pursuit of vision and significance. The greatest commanders never issue orders. Rather, they compel by their own acts and virtue the emulation of those they command. The great champions throw leadership back on you. They make you answer: Who am I? What do I seek? What is the meaning of my existence in this life?"

- Gentilhomme in The Profession by Steven Pressfield

Professional Military Education

- **What does it take to make a professional soldier?**

- **How does one join the profession of arms?**

- **The myth of the citizen soldier**

- **Military intelligence is not an oxymoron**

The Sandhurst Way

"The job of an officer is to put himself between his men and his enemy by thinking"

- Major-General Phillip Trousdell, Sandhurst Commandant

- 85% of cadets are college graduates
  - Believes extra maturity of its intake contributes to its success
  - 1 year vocational postgraduate degree
    - Focuses on defense and international affairs, war studies, communication and management studies

    "Far from the Hollywood image of the officer shouting at his men in action, we take the view that in battle the mind should be at peace." - Dr. Duncan Anderson, Head of War Studies

  - Quite different from West Point 4 year undergrad degree

    - John Crace, War and Peace, Guardian, July 23, 2002

The Sandhurst Way

- It is important that a platoon commander understands his men and women, that they have shared beliefs, mutual respect and trust. He has to have that spirit which inspires soldiers to fight.

- It is important that a distinction is made between an officer and a soldier, and it has nothing to do with class. It is because that officer may one day have to order his men to attack a machine gun nest, and if one soldier says, 'You do it, why should I do it?', then you are in trouble.

- Officership is about what it takes to be an officer: to take responsibility for your men and to lead by example.

- We expect all our officers to have loyalty, integrity, and courage, both moral and physical…Our values…are a means to an end, namely operational effectiveness.

- The best officers should inspire their soldiers and command respect, they should also underplay the dangers posed to themselves.

- Major-General Andrew Ritchie, Commandant Sandhurst

- Nigel Farndale, I Don't Treat Harry Like Dirt, Daily Telegraph, Feb. 10, 2005

Who Is Really In Charge

"It was always said in the British army that the duties of the infantry platoon sergeant were to:

1) Run the platoon.

2) Keep the platoon commander out of trouble.

3) Keep the men steady when things go wrong.

The duties of the platoon commander were to:

1) Sign for things.

2) Carry the can when things went wrong.

3) Walk in front and get shot first."

- Phil Barker, Wargames Research Group and former British Army armour crewman

Differences Between British Army and US Army

- **British enlisted**
  - **Join army for military experience - often runs in family**
  - **Choose regiments due to strong regional connection**
  - **Rapidly acquire air of worldly experience**
    - **Produced by army's folk culture of frequent campaigning, overseas travel, imperial experience**
    - **Fall naturally into hearts + minds operations, picking up threads their grandfathers laid down**
- **US enlisted**
  - **Seem young - few have been away from home**
  - **Those from South will have family military connections**
  - **Join to get work…and ultimately to get an education**

- John Keegan, Let the Infighting Begin: British and US Rivalry Resumes, Daily Telegraph, Apr 17, 2003

Differences Between British Army and US Army

- **British officers**
  - **Exhibit unhurried + amateur manner**
  - **Wear odd clothes**
  - **Use Christian names to other officers (unserious)**
- **US officers**
  - **Formal + conscious of rank**

- John Keegan, Let the Infighting Begin: British and US Rivalry Resumes, Daily Telegraph, Apr 17, 2003

US View of British Way of War

- **More map-centric…battle updates took place around "bird-table" - table covered with maps + overlays**
  - **No one used PowerPoint**
- **Demeanor of British officers seemed informal, even casual**
  - **Little consciousness of rank, first names used freely**
- **Little doubt about their professionalism**
  - **Officers had strong ability to visualize situation, enter into creative debate about possible courses of action, issue clear mission orders which were less detailed than US operational orders and focused first on desired effect**
  - **British briefs were straightforward, person to person, not cluttered with detail - "a nice change of pace"**

- Nicholas E. Reynolds, Basrah, Baghdad, and Beyond: The US Marine Corps in the Second Iraq War, p. 136

What Makes a Good Soldier

- **Ingenuity - John Hill on US soldier in WWII**

- **Mechanical literacy - Erhard Dabringhaus on US soldier vs. German soldier in WWII**

"Ingenuity via education, training, exposure, experience…"

   - Admiral Arthur Cebrowski, Director of Force Transformation

"The spirit the individual has that motivates him in the middle of danger to take every risk and do the right thing is far more important to us than all the equipment we can buy."

   - General James Gavin, USA

Contradiction Between Military Culture of Order + Disorderliness of War

"Non-commissioned officers…assume responsibility for imbuing the (Spartan) Way's sacred tenets of Order and Disorder into every young boot that crosses their path. Finding the balance within this dichotomy is tricky; both cultures exert a strong pull on Marines. The twins call like sirens from opposite banks of a river, singing for the Marine to listen to their virtues and ignore their vices.

The culture of Order is the Marine in dress blues, spotless and pristine, medals perfectly measured, hair perfectly trimmed…these types of things comprise the culture that is Orderly, functional, prepared and disciplined.

However,…combat is filled with uncertainties, half-truths, bad information, changing directives from seemingly incompetent higher headquarters, and unexplained explosions. War is chaos, the ultimate form of Disorder."

   - David Danelo, Blood Stripes

Training

"They do not wait for war to begin before handling their arms, nor do they sit idle in peacetime, but as if born ready-armed, they never have a break from training...It would not be far from the truth to call their drills bloodless battles, their battles bloody drills"

- Josephus, Jewish historian on Roman Army

"Train like you fight, and fight like you train"

- Anonymous

"The best form of welfare for the troops is first-class training"

- Erwin Rommel

"A pint of sweat will save a gallon of blood"

- General George S. Patton, Jr.

"The sinews of war are not gold, but good soldiers; for gold alone will not procure good soldiers, but good soldiers will always procure gold."

- Machiavelli

"Never tell people *how* to do things. Tell them *what* to do and they will surprise you with their ingenuity."

- General George S. Patton, Jr.

Battle Cry?

"Cut it out! Cut it out! The hell's the matter with you? Stupid! We're all very different people; we're not Watoosie, we're not Spartans. We're Americans, with a capital A, huh? You know what that means? Do ya? That means that our forefathers were kicked out of every decent country in the world. We are the wretched refuse. We're underdogs, we're mutts! Here's proof: his nose is cold. But there's no animal that's more faithful, that's more loyal, more loveable than the mutt. Who saw "Old Yeller?" Who cried when Old Yeller got shot at the end? Nobody cried when Old Yeller got shot? (hands are reluctantly raised) I cried my eyes out. So we're all dog faces, we're all very, very different, but there is one thing that we all have in common: we were all stupid enough to enlist in the Army. We're mutants, there's something wrong with us, there's something very, very wrong with us. Something seriously wrong with us. We're soldiers, American soldiers! We've been kicking ass for 200 years, we're 10 and 1. Now we don't have to worry about whether or not we practiced. We don't have to worry about whether Captain Diller wants to have us hung. All we have to do-oo is to be the great American fighting soldier that is inside each one of us. Now do what I do, and say what I say. And make me proud."

- Bill Murray as John Winger, Stripes

Focused Case Study - Training For Desert Warfare WWII

- **US**
  - **Desert training in Arizona + California**
- **Germany**
  - **Constructed huge hothouse buildings filled with sand and gravel that mimicked desert conditions from sand dunes to temperature swings**
  - **Lived there for weeks at a time**
    - **Swain Scheps, The Wehrmacht's Ersatz Desert, Strategy & Tactics 226, Jan/Feb 2005**

Focused Case Study - Training - Thunder Run - Battle of Curly

(Sergeant First Class) "Phillips kept wondering: Did these guys have any training, any tactics, any common sense? They seemed to be the very opposite of his soldiers, who had trained endlessly on how to move and clear an area." (p. 183)

"It did not occur to him to be afraid - in fact, it was an invigorating experience, almost thrilling. Combat was different than he had anticipated. It was…*interesting*…He was intrigued by the way he was able to subsume himself to his training, and how straightforward it all was. It was like his NCOs had always told him: pay attention, do it like you were trained, and things will take care of themselves. (Specialist) Agree glanced over at one point and made eye contact with (Private First Class) Gregory. He could tell from the transfixed look on Gregory's face that he felt the same thing. He was enjoying himself too."

- David Zucchino, Thunder Run, p. 183-184

The Importance of Professional Military Education

"Usually everybody starts even and everybody starts wrong. In 1914 every army of all the belligerent Powers shared a common doctrine, of the dominance of the offensive and the inevitability of rapid and decisive campaigns. All navies believed in the dominant role of the capital ship. In these circumstances, when everybody starts wrong, the advantage goes to the side which can most quickly adjust itself to the new and unfamiliar environment and learn from its mistakes.

Here again, in 1914, it was the Germans who showed their superiority. By land they were the first to exploit the capabilities of defence and of trench warfare, as later they were the first army who learnt how to break this deadlock. By sea the developed the ocean-going submarine which nearly brought Britain to surrender with the Grand Fleet still intact in Scapa Flow. Trench warfare and a submarine guerre de course were unthought of by any general or Naval Staff before 1914. What counted in 1914 and thereafter was the ability to think about it and develop the capacity to conduct it, or counter it, in time. It is this flexibility both in the minds of the Armed Forces and in their organisation, that needs above all to be developed in peacetime."

- Sir Michael Howard, "Military Science in an Age of Peace," Chesney Memorial Gold Medal lecture, 3 October 1973, reprinted in *Journal of the Royal United Services Institute* 119 (March 1974): 3-11.

The Importance of Professional Military Education

"This is an aspect of military science which needs to be studied above all others in the Armed Forces: the capacity to adapt oneself to the utterly unpredictable, the entirely unknown.

I am tempted indeed to declare dogmatically that whatever doctrine the Armed Forces are working on now, they have got it wrong. I am also tempted to declare that it does not matter that they have got it wrong. What does matter is their capacity to get it right quickly when the moment arrives."

- Sir Michael Howard, "Military Science in an Age of Peace," Chesney Memorial Gold Medal lecture, 3 October 1973, reprinted in *Journal of the Royal United Services Institute* 119 (March 1974): 3-11.

The Learning Organization

"Combat in many ways is a learning race. The opponent who is able to learn, adapt, and share that learning most rapidly will have an advantage."

- Nancy Dixon et.al., Company Command - Unleashing the Power of the Army Profession, p. 189

Learning From Your Mistakes

"Winners of conflict rarely learn - it is the loser and the less powerful, potential adversary that learns"

- Anonymous

Importance of Professional Military Education

"The nation that will insist upon drawing a broad line of demarcation between the fighting man and the thinking man is liable to find its fighting done by fools and its thinking by cowards"

- Sir William Francis Butler

- Part of what the soldier needs to learn is found on the battlefield
- Part of what the soldier needs to learn is found in the classroom

Zinni on How to Master the Combat Arts

- **The day in, day out experience of the firefights themselves**

- **Learning from more seasoned and experienced advisors**

- **Figuring out what gives you the advantage means imagining how somebody on the other side decides how they could get the advantage**

  - **Combat is a contest of wills, intellects, and experience**

  - **What is he thinking? / What is he trying to do?**

  - **What do I need to do to outguess him, to outplay him on this field?**

        - Anthony Zinni, Battle Ready, p. 43-44

On Reading

"The problem with being too busy to read is that you learn by experience (or by your men's experience), i.e. the hard way. By reading, you learn through others' experiences, generally a better way to do business, especially in our line of work where the consequences of incompetence are so final for young men.

Thanks to my reading, I have never been caught flat-footed by any situation, never at a loss for how any problem has been addressed (successfully or unsuccessfully) before. It doesn't give me all the answers, but it lights what is often a dark path ahead."

- General James Mattis, USMC

What Makes a Good Unit

- **The British Army's regimental system**
    - **Basic unit was regiment**
    - **Recruited into it, spent entire career in it**
        - **Loyalty to crown and regiment (their family) ~ esprit de corps**
    - **Officers were gentlemen**
        - **From public (private) schools which concentrated on developing character rather than educated men**
            - **"Battle of Waterloo was won upon the playing fields of Eton"**
                - **- Duke of Wellington**
        - **Bought commissions, needed outside income**
    - **Lack of military professionalism made up for by acts of incredible bravery**
        - **Epitomized bravery, chivalry, discipline**
        - **Set standards of honor, courage, loyalty seldom equaled**
            - **- Byron Farwell, Mr. Kipling's Army**

Focused Case Study - Infantry Training/Tactics in WWII

- **90% of the time plans go awry and you must improvise**
  - **How do you train for this?**

Focused Case Study - Infantry Training/Tactics in WWII

- **German**
  - **Start with strosstruppen tactics of WWI - well trained leaders lead squads who infiltrate trench lines causing weakness and sowing confusion**
  - **Concentrated on small group and maximizing its effectiveness**
  - **Leadership training consisted of devising quick solutions to tactical problems**
  - **Do it now mentality maximized misunderstanding in their own ranks but minimized time and casualties**
  - **Attack on a narrow front**
    - **John Hill, The Evolution of Small Unit Tactics, The General, Vol 14 No 5 p. 3-6**

Focused Case Study - Infantry Training/Tactics in WWII

- **English**
  - **Leadership training consisted of devising considered and conservative solutions to tactical problems**
  - **Minimized misunderstanding in their own ranks but maximized time to attack but minimized casualties**
  - **To solve a tactical problem - first identify it, select correct solution, implement the solution using a drill**
  - **Drill decreased tactical creativity, but fit a cultural trait of neatness**
    - **John Hill, The Evolution of Small Unit Tactics, The General, Vol 14 No 5 p. 3-6**

Focused Case Study - Infantry Training/Tactics in WWII

- **Russia**
  - **You do what you are told - you attack or defend - you defeat the enemy or you die**
  - **Attack on a broad front**
  - **Human wave assaults maximized own casualties but maximized demoralization of enemy**
    - **John Hill, The Evolution of Small Unit Tactics, The General Vol 14 No 5 p. 3-6**

Focused Case Study - Infantry Training/Tactics in WWII

- **US**

  "No one is more incompetent in battle than an American, at first, but no one learns faster." - Erwin Rommel

  - Philosophy - Try anything, try something; it might work

  - Drills would not be embraced by individualistic Americans

  - Soldiers ingenious, loved gadgets, disrespected rank, did things their way

  - Published tactical guidelines in pamphlets presented as "tricks of the trade"

  - Not good at taking it - quick to run but quick to rally

    - John Hill, The Evolution of Small Unit Tactics, The General, Vol 14 No 5 p. 3-6

Focused Case Study -
Infantry Training/Tactics in WWII

- **In regards to initiative, the Germans encouraged it, the West forgot it, the Russians condemned it**

    - John Hill, The Evolution of Small Unit Tactics, The General, Vol 14 No 5 p. 3-6

Focused Case Study - Band of Brothers

- **Currahee**
  - **Importance of physical conditioning and training**
  - **Unification of men through hatred of their leader**
- **Day of Days**
  - **Train like you fight, fight like you train**
- **Carentan**
  - **Absolute randomness of death in combat**
- **Replacements**
  - **Once the band is forged in combat, it is tough for others to gain entry**

Focused Case Study -
Band of Brothers

- ## Crossroads
  - ### Capt. Winters leadership on the dike in Holland
  - ### Capt. Winters combat stress on leave in Paris via flashbacks
- ## Bastogne
  - ### Importance of random acts of kindness seen through eyes of medic Eugene Roe
  - ### Why morale is so important - compare behavior of elite unit (101st) advancing while regular units retreating
- ## Breaking Point
  - ### What makes a great leader as told through the eyes of Sgt. Carwood Lipton
  - ### Combat stress of Lt. Buck Compton
  - ### What makes a bad leader like Lt. Dike
  - ### What makes a great leader like Lt. Speirs

Focused Case Study - Band of Brothers

- ## Last Patrol
  - ### Lt. Jones from West Point - here is your war
    - #### War from theory to reality
- ## Why We Fight
  - ### Explains succinctly why we fight
  - ### …and why the men don't want to fight anymore (Perconte to O'Keefe - he has seen enough "action")
- ## Points
- ## We Stand Alone Together
  - ### Modesty of their accomplishments
  - ### The true heroes are dead
  - ### Memories that still hurt 50 years later - combat stress never ends

Band of Brothers Leadership Lessons Learned

- **What makes a good soldier?**
  - **Discipline**
  - **If individual is accepted by other men**
- **What a leader must do for the people you lead**
  - **You have to give to them in every way**
  - **You must be consistent in your treatment of them**
  - **You must never take from them**
- **What you look for in a leader**
  - **Does individual have respect of the men?**
    - Christopher J. Anderson, Dick Winters' Reflections on His Band of Brothers, D-Day, and Leadership, American History, Aug 2004

Band of Brothers
Leadership Lessons Learned

- **How do you get the respect of the men?**
  - **By living with them, understanding what they are going through**
  - **By knowing your men and gaining their confidence**
    - **Way to gain confidence of men is to be honest, be fair, be consistent**
      - **Once you achieve this you will be a leader and they will trust in you, have faith in you, and obey right now no questions asked**
- **A leader maintains close relationships with your men, but not friendships**
  - **If you are too friendly it works in a negative way when you need to discipline men**
  - **To lead effectively you must rise above camaraderie and be fair to everyone**
    - **Christopher J. Anderson, Dick Winters' Reflections on His Band of Brothers, D-Day, and Leadership, American History, Aug 2004**

Band of Brothers
Leadership Lessons Learned

- **The most effective leader will have quiet self-confidence and self-awareness that ultimately commands the respect of the men**

- **If you take advantage of the opportunities for self-reflection, and honestly look at yourself, you will be able to be a better leader**

    - Christopher J. Anderson, Dick Winters' Reflections on His Band of Brothers, D-Day, and Leadership, American History, Aug 2004

Focused Case Study - The Way We Went

- **Joined British Army 1939 ~ older at 31 years**
  - **Company commander in motorized infantry - 12th Battalion KRRC (Territorials)**
  - **Landed in Normandy June 13, 1944**
- **Rewalked battlefields in 2005, reread letters home**
- **Findings**
  - **War is 10% excitement, 90% boredom**
  - **Attrition was high**
    - **All company commanders (except him) were killed, wounded or cross-posted**
    - **All platoon commanders were killed**
  - **Try to take death seriously and not get used to it**
  - **Battle exhaustion - treated by medical officer who gave them knock out drops for 48 hours**

- WF Deedes, The Way We Went (5 Parts), Daily Telegraph July 4, 2005 - July 9, 2005

Focused Case Study - The Way We Went

- **Findings**
  - **Establishing a battle rhythm was important**
  - **Germans fought tenaciously**
  - **American way of war was firepower over all**
  - **Importance of lines of communication - mail + food**
  - **Simplest of pursuits, taken for granted at home, gave pleasure**
- **Impressions**
  - **Devastation of civilian landscape**
  - **MOOTW - Reconstruction - Discipline of the captured**
  - **Peacetime soldiering more difficult than wartime soldiering, makes one look forward to return to war**
  - **Difficulties of readaptation to civilian life**

- WF Deedes, The Way We Went (5 Parts), Daily Telegraph July 4, 2005 - July 9, 2005

Focused Case Study - Military Experience/Service of WWII Leaders

- **Theodore Roosevelt**
  - **1897 - Speech at US Naval War College - "The greatest triumphs of peace pale besides the triumphs of war. War is the test of an individual's character and the nation's soul."**
  - **1897 - Assistant Secretary of the Navy - sends US Asiatic Fleet under Admiral Dewey to Manila Bay in anticipation of Spanish American War**
  - **1898 - Once war is declared, leaves Navy and forms First US Volunteer Cavalry Regiment, leads charge up San Juan Hill, his "crowded hour"**
  - **Why did he leave Navy? "I have spent 30 years of my life saying that war is the test of a man's courage, a man's soul and if I don't step up, well I will never know if I had passed the test."**

Focused Case Study - Military Experience/Service of WWII Leaders

- **Theodore Roosevelt**
  - **1906 - As President, wins Nobel Peace Prize for negotiating end to Russo - Japanese War**
  - **Glorifies war before Spanish American War; becomes somewhat of a pacifist after it**
  - **1944 - His oldest son, Brigadier General Theodore Roosevelt Jr. wins Medal of Honor for landing on Utah Beach with first wave of troops on D-Day and personally commanding the battle from there**

    "The bravest thing I ever saw." - General Omar Bradley
  - **2001 - Theodore Roosevelt Sr. posthumously awarded Medal of Honor for Battle of San Juan Hill**
    - **The only other father and son to win Medal of Honor are Arthur + Douglas MacArthur**

Focused Case Study - Military Experience/Service of WWII Leaders

- **Franklin Delano Roosevelt**
  - **1913-1920 Assistant Secretary of the Navy**
- **Mussolini**
  - **1915-1917 Enlisted man in Italian Army**
- **Hitler**
  - **1914-1918 Private in German Army, messenger for Regimental Headquarters, awarded Iron Cross 1st Class**
- **Stalin**
  - **1918-1921 Political Commissar (Zampolit) in Red Army in Russian Civil War + Polish-Soviet War**
- **Tojo**
  - **1905 graduates Imperial Military Academy, rises through ranks becoming General in 1935, fights in Second Sino-Japanese War**

Focused Case Study - Military Experience/Service of WWII Leaders

- **Churchill**
    - **1894 Attends Royal Military Academy Sandhurst**
    - **1895 Commissioned as 1st Lieutenant in 4th Hussars Cavalry Regiment**
    - **1895 As correspondent goes to Cuba to observe Spanish battling Cuban guerillas, won Spanish Order of Red Cross**
    - **1896 4th Hussars goes to India ~ Helps put down (and covers) Pathan Revolt in Northwest Frontier ~ Mentioned in Despatches**
        - **"Nothing in life is so exhilarating as to be shot at without result."**
    - **1898 With 21st Lancers participates in (and covers) Battle of Omdurman in Sudan (last British cavalry charge)**
        - **"These things made me anxious and worried during the night and I speculated on the shoddiness of war. You cannot guild it, the raw comes through."**
    - **1899 Leaves army, runs for Parliament but not elected**
    - **- Douglas S. Russell, Winston Churchill Soldier: The Military Life of a Gentleman at War, Lecture at Pritzker Military Library April 27, 2006**

Focused Case Study - Military Experience/Service of WWII Leaders

- **Churchill**
  - **1899 Becomes correspondent covering Boer War, is captured while defending armored train, escapes, joins South African Light Horse Regiment + helps capture Pretoria**
  - **1900 Elected Member of Parliament**
  - **1902-1924 Reserve officer in cavalry regiment**
  - **1911-1915 First Lord of the Admiralty**
  - **1916 Commanding Officer 6th Battalion Royal Scots Fusiliers on Western Front**
  - **1918 Minister of Munitions**
  - **1919 Secretary for War + Air**
  - **1939-1940 First Lord of the Admiralty**
  - **- Douglas S. Russell, Winston Churchill Soldier: The Military Life of a Gentleman at War, Lecture at Pritzker Military Library April 27, 2006**

Focused Case Study - Military Experience/Service of WWII Leaders

- **Truman**
  - **Dreamed as a youth to become a military leader**
  - **1905-1911 - Private in Missouri National Guard**
  - **1917 - Re-enlists in Missouri National Guard, commissioned as Captain Truman, commander Battery D, 129th Field Artillery, 35th Division in France**
  - **Post World War I - Rejoins Officer Reserve Corps**
  - **1932 - Colonel**
  - **1933 - Last stint of active duty. Appointed Commanding officer 379th Field Artillery + attends summer training 1936-1938 at own expense while US Senator**
  - **1941 - Tried to return to active duty, declined by General Marshall**

Case Study Summary - Battle of Goose Green May 27-28, 1982

- **Goal**
  - **British - raise UK strategic will at home to divert attention from losses at sea ~ Argentina - engage British on land**
- **Center of Gravity (Strategy)**
  - **British - envelopment ~ Argentina - hold in place**
- **Equipment**
  - **British - 2 Bn The Parachute Regiment - 3 companies (600 men) - 3 105 mm howitzers ~ Argentina - reinforced infantry regiment (1200 men) - artillery + mortars**
- **Training / Leadership / Morale**
  - **This is why British win**
  - **British - Red Devils - Lt Col H Jones VC ~ Argentina - conscript nationalists**
  - **- Robert Bolia, The Battle of Darwin-Goose Green, Military Review, July-Aug 2005**

Case Study Summary - Battle of Goose Green May 27-28, 1982

- **Tactics**
  - **Attacker should have 3:1 odds over defenders, British have 1:2 odds**
- **Intangibles**
  - **Civilian hostages ~ Argentines not used to cold weather, poorly supplied**
- **Mistakes**
  - **British - poor artillery support**
- **Outcome**
  - **British win in a near run thing, raise strategic morale at home, crush Argentine morale on Falklands**

  "I believe the Argentines lost the battle rather than the Paras winning it. In fact I suspect that is how most conflicts are resolved." - Major Chris Keeble, acting CO 2 Para

  - Robert Bolia, The Battle of Darwin-Goose Green, Military Review, July-Aug 2005

Computing Case Study Summary - Full Spectrum Warrior 2004

- **Goal**
  - **Provide training in fire team + squad tactics**
- **Center of Gravity (Strategy)**
  - **To win, player must learn to think + act like a professional soldier**
- **Technology / Equipment**
  - **XBox + Playstation 2**
- **Training ~ Leadership ~ Morale**
  - **First person thinker**
- **Tactics**
  - **Uses distributed authentic professionalism - "skills, knowledge, and values are distributed between the virtual characters and the real-world player in a way that allows the player to experience first-hand how members of that profession think, behave, and solve problems."**
  - **Just in time learning ~ Non player character teachers**

- James Gee, What Would a State of the Art Instructional Video Game Look Like?, Innovate 1(6), 2005

Computing Case Study Summary - Full Spectrum Warrior 2004

- **Intangibles ~ Mistakes**
- **Outcome**
  - **This is what a state of the art instructional video game would look like**
  - **Teaches player how to be professional soldier**
  - **Demands the player thinks, values + acts like a professional soldier to win the game**
  - **"With authentic professionalism, 'knowing' is not merely the mastery of the facts; rather knowing involves participation in the complex relationships between facts, skills, and values in the service of performing a specific identity. Here…the knower is a knower of a specific kind - a type of active professional, not just a generic recipient of knowledge."**
- **James Gee, What Would a State of the Art Instructional Video Game Look Like?, Innovate 1(6), 2005**

Personal Case Study - Admiral H. Edward Phillips

- **Role - Commander, Medical Service Corps, US Navy**

- **Story**

  "My most important job is to train my replacement"

  - **Dinner with the Admiral…**

Class Simulation

- **Leadership aspects**

Poem

"I Think I Am Becoming A God"

The noble horse with courage in his eye
clean in the bone, looks up at a shell burst:
away fly the images of the shires
but he puts the pipe back in his mouth.

Peter was unfortunately killed by an 88:
it took his leg away, he died in the ambulance.
I saw him crawling on the sand, he said
It's most unfair, they've shot my foot off.

(continues)

Poem

How can I live among this gentle
obsolescent breed of heroes, and not weep?
Unicorns, almost,
for they are fading into two legends
in which their stupidity and chivalry
are celebrated. Each, fool and hero, will be an immortal.

These plains were their cricket pitch
and in the mountains the tremendous drop fences
brought down some of the runners. Here then
under the stones and earth they dispose themselves,
I think with their famous unconcern.
It is not gunfire I hear, but a hunting horn.

- Keith Douglas, Aristocrats, Tunisia, 1943

Questions for Further Discussion

- **Who would you follow into battle?**
  - **What defines a good leader?**
  - **What defines a bad leader?**

Reading Assignments

- **How to Make War Chapter 13, 17**
- **TED Talks for this Topic**
  - **http://www.warstudiesprimer.org/ToLearnMore.html**

Recommended Reading to Learn More

- **Non-fiction**
  - **Stephen Ambrose - Band of Brothers**
- **Fiction**
  - **Anton Myrer - Once an Eagle**
- **Movies**
  - **Band of Brothers**
  - **Mr. Roberts**
  - **Saving Private Ryan**
  - **Thin Red Line**
- **Simulations**
  - **Full Spectrum Warrior - XBox**

Conclusion - Sukhomlinov Effect

- **Military historians have long observed that the army most likely to win a war is the one with the least attractive or extravagant uniforms**
  - **Examples - Barbarian invasions, American Revolution, Russian Revolution, Arab-Israeli wars, Vietnam War, Afghan War**
  - **Cause - in peacetime, armies tend to concentrate more on style than substance**
    - **Sharper uniforms more important that better fighting skills**
  - **Corrected by getting rid of peacetime leadership once war begins**
    - **Sukhomlinov Invades Israel, StrategyPage, Nov 11, 2005**

Conclusion

"The problem with the generals is that we select them from among the colonels"

- Old French saying

"An army of rabbits led by a lion, will beat an army of lions led by a rabbit"

- Napoleon

Conclusion

- **Generalship is about three things - character, competence, and communication.**
  - General Graeme Lamb, British Army

"So do we select our generals on such criteria? Don't be daft, of course we don't. We pull them up through patronage, misplaced loyalty, self-promotion and a host of other rather tawdry reasons and, occasionally, on ability; but it is not always the brightest and the best that are selected for high office."

- General Graeme Lamb, British Army

Conclusion

"...one day you will come to a fork in the road and you're going to have to make a decision about which direction you want to go. If you go that way you can be somebody. You will have to make compromises and you will have to turn your back on your friends. But you will be a member of the club and you will get promoted and you will get good assignments.

Or you can go that way and you can do something - something for your country and for your Air Force and for yourself. If you decide you want to do something, you may not get promoted and you may not get the good assignments and you will certainly not be a favorite of your superiors. But you won't have to compromise yourself. You will be true to your friends and to yourself. And your work might make a difference....

...To be somebody or to do something. In Life there is often a roll call. That's when you will have to make a decision. To be or to do? Which way will you go?"

- John Boyd

Conclusion

"In the last analysis, luck benefits only the well prepared."

- Count Helmuth von Moltke (the Elder)

Conclusion

"War is for the participants a test of character. It makes bad men worse and good men better."

- Joshua Chamberlain, Professor and President of Bowdin College, Colonel + commander of 20th Maine Infantry at Little Round Top

Topic 6

Poor Bloody Infantry

Weapons, focusing on armies

Song

Over hill, over dale
As we hit the dusty trail,
And those caissons go rolling along.
In and out, hear them shout,
Counter march and right about,
And those caissons go rolling along.

Then it's hi! hi! hee!
In the field artillery,
Shout out your numbers loud and strong,
For where e'er you go,
You will always know
That those caissons go rolling along.
    - Edmund L. Gruber, The Caissons Go Rolling Along

Thematic Quote

"There are really two wars and they haven't much to do with each other. There is the war of maps and logistics, of campaigns, of ballistics, armies, divisions, and regiments - and that is General Marshall's war. Then there is the war of the homesick, weary, funny, violent, common men who wash their socks in their helmets, complain about the food, whistle at the Arab girls, or any girls for that matter, and bring themselves through as dirty a business as the world has ever seen and do it with humor and dignity and courage - and that is Ernie Pyle's war."

- John Steinbeck, Time, July 17, 1944

Thematic Quote

"The Mud, Rain, Frost and Wind Boys"

- Ernie Pyle

"There are none of the little things that make life normal back home. There are no chairs, lights, floors, or tables. There isn't any place to set anything or any store to buy things. There are no newspapers, milk, beds, sheets, radiators, beer, ice cream, or hot water...A man just sort of exists."

- Ernie Pyle in Tunisia 1943

"Embrace the suck!"

- 101st Airborne Division, Iraq, 2003

Thematic Quote

"Mass has a quality all its own"

- Anonymous US Army adage

"God is on the side of the biggest battalions"

- Napoleon

"Morale makes up three quarters of the game; the balance of manpower accounts only for the remaining quarter"

("The moral is to the physical as three to one")

- Napoleon

"Neither numbers nor strength bring victory in war; but whichever army goes into battle stronger in soul. Their enemies generally cannot withstand them."

- Xenophon, 4th Century B.C.

The Painting

Willie and Joe
- Bill Mauldin

The Question

Is Infantry the Queen of Battle?

Romanticism of War

"I have heard the bullet's whistle and there is something charming in the sound"

- George Washington

"There is nothing more exhilarating to be shot at without result"

- Winston Churchill

"I am hard pressed on my right; my center is giving way; situation excellent; I am attacking"

- General Ferdinand Foch

"I hope that God will have pity for our enemies, because I will have none"

- General George S. Patton Jr.

Fatalism of War

"Theirs not to reason why / Theirs but to do and die"

    - The Charge of the Light Brigade, Lord Tennyson

Reality of War

"I think people have forgotten the fact that war is a nasty, messy, brutal business. I think the average civilian nowadays thinks that you have a war and nobody gets hurt. That worries me."

- Peter Babbington, Commanding Officer of K Company 42nd Commando Royal Marines in Falklands War

Reality of War

"First casualty in war is the truth"

- Magnus B Marks

"In war, the real heroes are dead"

- Magnus B Marks

"It is well that war is so terrible - otherwise we would grow too fond of it"

- Robert E. Lee

"Nothing except a battle lost can be half so melancholy as a battle won"

- Duke of Wellington

Reality of War

"We're in the business of managing violence"
- Major Mark Rasins
- David Zucchino, Thunder Run, p. 327

(in reference to the battle for the Fourteenth of July traffic circle) "Afterward…a tank driver, saw one of the tank commanders taking photographs of mutilated bodies in the vehicles. He was appalled. He asked the commander why he wanted to capture such horrible images. The man had his reasons. 'If my son says he wants to join the army, I'll show him this and tell him: *This* is what the army does'."
- David Zucchino, Thunder Run, p. 125

Reality of War

"The profession for which he had prepared his life was organized murder. He sent boys with pimples on their faces into a landscape rained on with steel and watered with blood."

- General Alekseyev, Red Storm Rising, p. 461

"Sweet is war to him who knows it not, but to those who have made trial of it, it is a thing of fear."

- Pindar

Reality of War

"I am clearly no pacifist. It is very difficult to be a pacifist and a Marine at the same time. But I don't want romantics going into the Army or Marine Corps or Navy or Air Force. I want people to go in there to understand exactly what they are going to be doing and what the real purpose of these organizations are, which is to defend our country by using violence against people who would use violence against us and that involves killing people…and often we tend to shove this under the rug."

- Karl Marlantes

Reality of War

"Combat experience is a valuable thing, but it also robs a young warrior of his fantasies about the romance of combat, and along with it, much of his enthusiasm."

- Lt. John Moody in Rising Wind by Dick Couch

Active Service
The Six Aspects of Battle

- **Facing the enemy**
- **Facing death**
- **Leadership**
- **Morale**
- **Victory and Defeat**
- **Loss and Commemoration**

- National War Museum of Scotland

What is War

"You cannot qualify war in harsher terms than I will. War is cruelty, and you cannot refine it."

- William Tecumseh Sherman

"I am tired and sick of war. Its glory is all moonshine. War is hell"

- William Tecumseh Sherman

"War is organized confusion"

- Air Marshall Sir Arthur Tedder, Eisenhower's 1944-45 deputy

"War is a series of catastrophes that results in victory"

- Clemenceau

The Horror of the Trenches

"As soon as you got over the top, fear has left you and it is terror. You don't look, you see. You don't hear, you listen. Your nose is filled with fumes and death. You taste the top of your mouth... You're hunted back to the jungle. The veneer of civilization has dropped away." - Richard Tobin, Royal Naval Division, describing the moment the men left the trenches and went over the top

"It was just like a flock of sheep lying in the middle of a field. Quite a number of the men were still alive and they were crying out and begging for water. They plucked at our legs as we went by. One hefty chap did grab me round both legs and held me. In the years that have passed, that man's pleadings have haunted me." - Edward W. Glendinning, Sherwood Foresters, describing the aftermath of a battle

"It was quite common to see people... get up and run round in circles like sheep, and they ran round until they met shell fire which finally finished them." - Benjamin Richards, sapper in the Royal Engineers, describing intense artillery bombardments

"I was quicker than he was. I thrust his rifle away and I ran my bayonet through his chest. I nearly vomited. My knees were shaking and I was quite frankly ashamed of myself. How I would have liked him to have raised his hand. I would have shaken his hand and we would have been the best of friends. What was it that we soldiers stabbed each other, strangled each other, went for each other like mad dogs? What was it that we who had nothing against them personally fought with them to the very end in death. We were civilized people after all." - Stefan Westmann, German fdd in the 29th Infantry Division, recalling bayonetting a French corporal to death

- All from the BBC television series The Great War

What is War Like

"I've tried to do that in my drawings and I know that many thousands of guys who have gone back have tried to do it, too. But no matter how much we try we can never give the folks at home any idea of what war really is. I guess you have to go through it to understand its horror. You can't understand it by reading magazines or newspapers or by looking at pictures or by going to newsreels. You have to smell it and feel it all around you until you can't imagine what it used to be like when you walked on a sidewalk or tossed clubs up into horse chestnut trees or fished for perch or when you did anything at all without a pack, a rifle, and a bunch of grenades."

- Bill Mauldin, Up Front, pp.129-130

What An Infantryman's Life Is Like

"Dig a hole in your back yard while it is raining. Sit in the hole until the water climbs up around your ankles. Pour cold mud down your shirt collar. Sit there for forty-eight hours, and, so there is no danger of your dozing off, imagine that a guy is sneaking around waiting for a chance to club you on the head or set your house on fire.

Get out of the hole, fill a suitcase full of rocks, pick it up, put a shotgun in your other hand, and walk on the muddiest road you can find. Fall flat on your face every few minutes as you imagine big meteors streaking down to sock you.

- Bill Mauldin, Up Front, pp. 143-144

What An Infantryman's Life Is Like

After ten or twelve miles (remember - you are still carrying the shotgun and suitcase) start sneaking through the wet brush. Imagine that somebody has booby-trapped your route with rattlesnakes which will bite you if you step on them. Give some friend a rifle and have him blast in your direction once in a while.

Snoop around until you find a bull. Try to figure out a way to snake around him without letting him see you. When he does see you, run like hell all the way back to your hole in the back yard, drop the suitcase and shotgun, and get in.

If you repeat this performance every three days for several months you may begin to understand why an infantryman sometimes gets out of breath. But you still won't understand how he feels when things get tough."

- Bill Mauldin, Up Front, pp. 143-144

What a Marine's Life is Like

"War is brutish, inglorious, and a terrible waste. Combat leaves an indelible mark on those who are forced to endure it. The only redeeming factors were my comrades' incredible bravery and their devotion to each other. Marine Corps training taught us to kill efficiently and to try to survive. But it also taught us loyalty to each other-and love. That esprit de corps sustained us."

- Eugene Sledge, With the Old Breed at Peleliu and Okinawa

The Randomness of Death

"And what he had learned in those ten or twenty or thirty minutes of hell is that death does not discriminate between the good and the bad, the noble and the cowardly, the friendly and the unfriendly, the pessimistic and the optimistic. It does not care whether you belong to Herr Hauptsturmfuhrer Grabner's Reconnaissance Battalion or the most miserable unit of conscripted Ukrainians. When your time is up, it will destroy you with no more compunction than a schoolboy squashing a snail beneath his boot."

- James Delingpole, Coward on the Bridge, p. 149

Poor Bloody Infantry

- **In World War II US infantry division of 14,000 men, only 3,240 were riflemen**

- **1/15 of US soldiers in Europe were riflemen**

- **75% of all casualties came from rifle platoons**

- **Rate of loss in rifle platoons was 90%**

- **By December 1944 there was a severe infantry shortage in US Army in Europe so began assigning anti-aircraft artillery crews as infantry**

- Commanding General United States Army, Senior Leader Battlebook for The Battle of the Bulge

What Is Battle

"What battles have in common is human: the behaviour of men struggling to reconcile their instinct for self-preservation, their sense of honour and the achievement of some aim over which other men are ready to kill them. The study of battle is therefore always a study of fear and usually of courage, always of leadership, usually of obedience; always of compulsion, sometimes of insubordination; always of anxiety, sometimes of elation or catharsis; always of uncertainty and doubt, misinformation and misapprehension, usually also of faith and some times of vision; always of violence, sometimes also of cruelty, self-sacrifice, compassion; above all, it is always a study of solidarity and usually also of disintegration - for it is toward the disintegration of human groups that battle is directed."

- John Keegan, The Face of Battle, p. 83

The Battlefield from the Soldier's Perspective

"Even in daytime fighters do not perceive anything; indeed, nobody knows anything more than what is going on right around himself."

- Thucydides

"War is the realm of uncertainty; three quarters of the factors on which action is based are wrapped in a fog of greater or lesser uncertainty."

- Clausewitz

- …war is chaos…

The Fog of Battle…

- …therefore leads to the fog of memory
- …which leads to conflicting accounts provided by veterans of battles
- …Makes the military historian's job very difficult
  - Victor Davis Hanson, The Fog of Battle, National Review Online, Aug. 27, 2004

The Fog of Battle

"Very few things happen at the right time, and the rest do not happen at all. The conscientious historian will correct these defects."

- Mark Twain

Rumors of War

"The veteran's inclination [is] to remember things the way he would like them to have been rather than the way they were."

- Philip Caputo, A Rumor of War

Zinni on Combat

"…it was all about facing an enemy, trying as hard as he could to do to us what we wanted to do to him…There's an enemy somewhere in there, and here you are trying to use everything you know, have learned, have trained for, in order to reach your aims, and stop him from reaching his."

- Anthony Zinni, Battle Ready, p. 51

Zinni on Combat

"The biggest lesson, in fact, is learning how to be open to surprising new experiences and then turning that openness into resourceful and creative ways of dealing with the challenges you face…You have to be open to each new and very different reality. It's wrong to use models and to think stereotypically about problems and issues."

- Anthony Zinni, Battle Ready, p.37

Junger on Combat

"Stripped to its essence, combat is a series of quick decisions and rather precise actions carried out in concert with ten or twelve other men. In that sense it's much more like football than, say, like a gang fight. The unit that choreographs their actions best usually wins. They might take casualties, but they win.

That choreography - you lay down fire while I run forward, then I cover you while you move your team up - is so powerful that it can overcome enormous tactical deficits. There is choreography for storming Omaha Beach, for taking out a pillbox bunker, and for surviving an L-shaped ambush at night on the Gatigal. The choreography always requires that each man make decisions based not on what's best for him, but on what's best for the group. If everyone does that, most of the group survives. If no one does, most of the group dies. That, in essence, is combat. "

- Sebastian Junger, War

A Near Run Thing

"At some moment between the time when the two Americans were used as a trampoline and their observation of the recessional in which the enemy dead were being hooked and carried away, the fight at Bird must have been in perfect equipoise. We cannot fix the moment precisely. We may only state it as the time when the flux in one side equaled that of the other.

In that moment, solemn above all others, decision had no favorites. It would tilt toward the side that would regather itself most quickly. Whether that would come about through sheer luck and circumstance or in consequence of greater human striving is perhaps unimportant. The point is that the small fight at LZ Bird illuminates more perfectly than many major battles the uncertainties, forfeits, and swift reversals that attend combat."

- SLA Marshall, Bird, p.98-99

Who Dares Wins

"I have found again and again that in encounter actions, the day goes to the side that is the first to plaster its opponent with fire. The man who lies low and awaits developments usually comes off second best."

- Erwin Rommel

Land Philosophers

- **Fuller**
- **Liddell-Hart**
- **Guderian**

Plan 1919

- **Developed in 1918 by Colonel JFC Fuller, Chief Staff Officer British Tank Corps**

- **Two components**

  - **Infantry support tanks breach front line**

  - **Fast tanks strike swiftly and deeply into enemy rear, supported by infantry in trucks, motorized artillery and aircraft**

- **British experimented with it in 1920's and 1930's but continued to use tank for direct infantry support**

  - Kenneth Macksey, Tank Tactics 1939-1945, p. 8

Basil Liddell-Hart

- **During inter-war years was leading exponent of using tanks as independent striking force to make deep penetrations into enemy territory, cutting off enemy troops from their supplies and high command**

- **Was ignored by British but revered by Germans**

Genesis of the Panzer Division

- **Heinz Guderian adopted Fuller's work and created the panzer division**
  - **Integrated tank, infantry, artillery, engineer, administrative units**
  - **Built upon rock of a radio based system of command and control**
  - **- Kenneth Macksey, Tank Tactics 1939-1945, p. 11-12**

Blitzkrieg

- **The key to success was to use fast moving armored forces to achieve**
  - **Concentration in time**
    - **Means speed and mobility**
  - **Concentration in space**
    - **Local superiority of forces at Schwerpunkt (point of main effort)**
- **Thus you punch through the enemy's line and quickly exploit the breach, leaving slower moving follow-on forces to mop up**
- **This keeps the enemy off balance**

- Christopher Chant, Ground Attack, p. 15

Components of Blitzkrieg

- **Auftragstaktik - mission oriented orders**
  - **Once everyone understands commanders' intent, people are free to + duty-bound to use their creativity + initiative to accomplish their missions within the intent**
  - **Centralized vision + decentralized decision making**
- **Schwerpunkt - focus of effort**
- **Fingerspitzengefuhl - (fingertip feel) Extraordinary, intuitive competence at all levels so that when units get to where the decisive point is, they get the job done**

  - Chet Richards, Review of The Virtues of War

Thematic Quote

"In war, valor is more useful than strength of arms, but even greater than valor is timing"

- Vegetius

Zinni on Maneuver Warfare

"'Maneuverists'…was a mind-set, where you weren't necessarily looking to apply brute force and then grind your enemy into submission. The idea was to find innovative - and unexpected - ways to checkmate the other guy…In history, there have been many cases where small forces have defeated much larger ones after creating a situation that convinced the opposing commander that he had lost, or that made the larger force's situation untenable, by out positioning it or by disrupting, dislodging, or destroying…'a center of gravity'…"

- Anthony Zinni, Battle Ready, p. 145

Zinni on Maneuver Warfare

"Maneuver Warfare advocates looked to discover an enemy's centers of gravity, pick on what would cause the enemy's eventual unraveling, and focus on it…The primary objective was to get inside the enemy commander's decision cycle and mess him up - gaining both a psychological and a physical advantage by gaining control of the tempo of operations, conducting relevant actions faster and more flexibly than the other guy can."

- Anthony Zinni, Battle Ready, p. 145

Women In the US Army

- **In June 2005 comprise 15% of active force**
- **Pentagon policy excludes women from being <u>assigned</u> to units at level of battalion and below that engage in direct ground combat**
  - **So women serve in logistic / military police / military intelligence / civil affairs units**
- **But 360 degree nature of Iraq war, with no rear area, has rendered the policy obsolete**
  - **Women are <u>attached in direct support</u> of ground combat battalions**
  - **Women have pushed back barriers against women in combat**
  - **Women man checkpoints, patrol highways, raid homes**
  - **- Ann Scott Tyson, For Female GIs, Combat is a Fact, Washington Post, May 13, 2005**

Women in Combat

- **In Iraq, women have not shirked from fight, and have won medals for valor**

- **Sergeant Leigh Ann Hester, an MP, given Silver Star (first Silver Star for women since WW II)**

  - **For leading her team of 10 soldiers in a counterattack against 50 insurgents who ambushed her supply convoy, personally killing 3 in the process**

  - Ann Scott Tyson, Soldier Earns Silver Star for Her Role in Defeating Ambush, Washington Post, June 17, 2005

Women and Killing

"Women give life. Sustain life. Nurture life. They don't take it."

- General Robert Barrow, former Commandant US Marine Corps

- Today women have begun to participate in military's central mission: break the will of the enemy by killing him or convincing him he will be killed

  - French, German, Danish, Canadian women are serving in direct combat ground forces - infantry, tanks, artillery

- Kristin Henderson, Ready to Kill, Washington Post, Feb. 24, 2008

Women in Arms

"Iraq has advanced the cause of full integration for women in the Army by leaps and bound. They have earned the confidence and respect of male colleagues."

- Colonel Peter R. Mansoor

"We literally could not have fought this war without women."

- Lt. Col. John Nagl

- Women comprise 11% of those who have fought in Afghanistan + Iraq
  - Their successes are hidden from public view
- While women are barred from joining combat branches - they can be "attached" to them rather than "assigned" to them
- Hostility towards women in military is fading as more + more young men grow up around female athletes, tough sisters and successful women

- Lizette Alvarez, G.I. Jane Breaks The Combat Barrier, Washington Post, Aug. 16, 2009

Case Study Summary - Battle of the Somme
July 1, 1916 - November 17, 1916

- **Goal**
  - **British take pressure off German main attack at Verdun**
  - **British + French fight side by side at last**
  - **Kitchener's "New Armies" of British volunteers begin to carry Britain's weight on Western Front**
- **Center of Gravity (Strategy)**
  - **British - explode 21 mines under German lines, use huge artillery barrage, then begin the Big Push, battle of attrition vs. breakthrough**
  - **German - use forward, reserve, support trenches**

- Richard Holmes, Complete War Walks: British Battles from Hastings to Normandy, pp. 264-297

- A.J.P. Taylor, Illustrated History of The First World War, pp. 89-105

Case Study Summary - Battle of the Somme
July 1, 1916 - November 17, 1916

- **Equipment / Training**
  - **British - received very little training**
- **Leadership**
  - **British - Lions led by donkeys (General Haig)**
- **Morale**
  - **British - going in was very high due to Pals Battalions - are volunteers not conscripts**
- **Tactics**
  - **British - in initial assault simply march forward into German trenches rather than use fire + movement, last use of cavalry as breakthrough force in initial attack, first use of tank as breakthrough force on Sept. 15**
  - **German - machine gun**

- Richard Holmes, Complete War Walks: British Battles from Hastings to Normandy, pp. 264-297

- A.J.P. Taylor, Illustrated History of The First World War, pp. 89-105

Case Study Summary - Battle of the Somme July 1, 1916 - November 17, 1916

- **Intangibles**
  - **First indirect meeting between Hitler (who was wounded as corporal in battle) and Churchill (his tanks were used in battle)**
- **Mistakes**
  - **German dug-out shelters impervious to British artillery**
- **Outcome**
  - **20,000 British killed + 40,000 wounded in first attack on first day out of force of 100,000**
  - **> 1 million killed + wounded on both sides during whole battle**
  - **Total British advance was 6.5 miles**

  "Idealism perished on the Somme. The enthusiastic volunteers were enthusiastic no longer. They had lost faith in their cause, in their leaders, in everything except loyalty to their fighting comrades. The war ceased to have a purpose. It went on for its own sake, as a contest in endurance." - A.J.P. Taylor

- Richard Holmes, Complete War Walks: British Battles from Hastings to Normandy, pp. 264-297
- A.J.P. Taylor, Illustrated History of The First World War, pp. 89-105

Focused Case Study - AK-47 vs. M-16

- ## Heritage
  - ### AK
    - WW II Eastern Front - Germans want to give every soldier a machine pistol / light machine gun -> MP-44
    - Kalashnikov designs AK for Soviets to kill Germans
  - ### M-16
    - Comes from ArmaLite Division of Fairchild
- ## Designers
  - ### Mikhail Kalashnikov
    - Peasant soldier-engineer / Got $0 per rifle / duty over money
  - ### Eugene Stoner
    - Professional engineer / Got $1 per rifle / capitalist millionaire
  - ### …in 1990's they met face-to-face and bonded
- Larry Kahaner, AK-47 The Weapon That Changed the Face of War

Focused Case Study - AK-47 vs. M-16

- **Materials**
  - **Metal and wood (AK) vs. Plastic (M-16)**
  - **Intermediate round between pistol + rifle**
- **Method of Use**
  - **Pray and Spray (AK) vs. Single aimed shots (M-16)**
- **Wounds**
  - **Gaping (AK) vs. Small (M-16)**
- **Reliability**
  - **AK - Loose tolerances require little maintenance, always fires + never jams**
  - **M-16 - Fine tolerances require maintenance, jammed due to wrong powder in Vietnam**

- Larry Kahaner, AK-47 The Weapon That Changed the Face of War

Focused Case Study - AK-47 vs. M-16

- **Pop culture**
  - **AK is symbol of revolution**
  - **M-16 is sexy**
- **Kalashnikov Culture**
  - **Happens in society awash in weapons**
  - **Economic and social reliance on AKs in Pakistan and Afghanistan**
- **African Credit Card**
  - **Having an AK is necessary for everyday existence**
  - **Don't leave home without it**
  - **Is a form of currency**

- Larry Kahaner, AK-47 The Weapon That Changed the Face of War

Focused Case Study -
AK-47 vs. M-16

- **Reputation**
  - **"AK-47. The very best there is. When you absolutely, positively got to kill every motherf*cker in the room."**
    - **- Samuel L. Jackson in Jackie Brown**
  - **M-16 - An acquired taste**
- **AK is a Weapon of Mass Destruction**
  - **There are 75-100 million AKs world-wide**
  - **No tool has spread so much power to so many people**
  - **Cheap, easy to use without training, allows anyone to be a warrior**
  - **Gives every man ability to be mass murderer**
  - **Has killed millions world wide**

- Larry Kahaner, AK-47 The Weapon That Changed the Face of War

Focused Case Study - AK-47 vs. M-16

"In some places, an AK-47 assault rifle can be bought for as little as…a bag of grain. They are easy to use: with minimal training, even a child can wield one. They are easy to conceal and transport. Since they require little maintenance, they can last for decades."

- UN Secretary-General Kofi Annan

"I'm proud of my invention, but I'm sad that it is used by terrorists. I would prefer to have invented a machine that people could use and that would help farmers with their work - for example, a lawnmower."

- Mikhail Kalashnikov

- Larry Kahaner, AK-47 The Weapon That Changed the Face of War

"Better is the enemy of good enough"
- Russian proverb

Case Study Summary - Grozny (12/31/94 - 1/3/95)

- **Goal**
  - Retake capital of runaway Chechen Republic by show of force of Russian military (Prague type operation)
- **Center of Gravity (Strategy)**
  - Presidential Palace ~ kill the president
- **Equipment**
  - Russian vehicles poorly armored ~ Not combat ready
  - Chechens had 5,000 men (800 organized in military units)
  - Russians had 25,000 - 38,000 men, 80-230 tanks, 200-353 armored personnel carriers, 180-388 artillery tubes, air cover
- **Training**
  - Russian conscripts undertrained~Chechens had combat experience
- **Leadership**
  - Russian leaders refused to fight
    - Perry Moore, Into a Beartrap - The Battle for Grozny January 1995, Against the Odds, December 2004 Vol 3 No 2

Case Study Summary - Grozny (12/31/94 - 1/3/95)

- **Morale**
  - **Russians unmotivated**

- **Tactics**
  - **Chechens had 3-20 men fight in area where they live armed with rocket propelled grenade / light machine gun / sniper ~ used roaming wolf packs and classic ambushes**

- **Intangibles**
  - **For Russians - poor intelligence, communications not secure, no maps of city, poor supplies**

- **Mistakes**

- **Outcome**
  - **2 Russian divisions attacked 2 Chechen battalions and Russians were annihilated**

  - Perry Moore, Into a Beartrap - The Battle for Grozny January 1995, Against the Odds, December 2004 Vol 3 No 2

Case Study Summary - Battle of Fallujah

- **Goal**
  - **Clear Fallujah (capital of Iraq insurgency) of insurgents**
- **Center of Gravity (Strategy)**
  - **Insurgents**
- **Equipment**
  - **US - 5,000 infantry + armor ~ Insurgents - 4,000 with small arms**
- **Training**
  - **US - superb ~ Insurgents - none**
- **Leadership**
  - **US - great ~ Insurgents - Allah**
- **Morale**
  - **US - high ~ Insurgents - martyrdom**
  - **- Why the Future is Fallujah, StrategyPage, March 23, 2006**

Case Study Summary - Battle of Fallujah

- **Tactics**
  - **US - move quickly + methodically clear ~ Insurgents - stand + die**
- **Intangibles**
  - **US - excellent intelligence from UAV's, excellent body armor and communications**
- **Mistakes**
- **Outcome**
  - **500 US casualties ~ 1,200 insurgents captured or killed**
  - **Compare Battle of Fallujah to Battle of Grozny**
    - **Similar battlefields with different outcomes**
      - **Extremely low US casualty rates**
  - **This is where all the training and simulation pays off**
    - **- Why the Future is Fallujah, StrategyPage, March 23, 2006**

Communications Case Study Summary - Blue Force Tracker

- **Goal**
  - **Provide common operating picture of location of friendly + enemy forces**
- **Center of Gravity (Strategy)**
  - **Global Positioning System (GPS)**
- **Technology / Equipment**
  - **GPS for location, satellites for communication, Geographical Information System (GIS) for display**
- **Training / Leadership**
  - **Enhances leadership by giving leaders god-like view of battlefield**
- **Morale**
  - **Raises morale by decreasing surprises on battlefield**
- **Tactics**
  - **Each vehicle broadcasts via satellite its GPS-determined position to headquarters which processes all positions of friendlies (blues) + intelligence it has on enemies (reds) and sends them back to all blue units**
- **Intangibles / Mistakes**
  - **Increases leader's micromanagement of troops**
  - **How easily can it be spoofed or jammed, leading to increased fog of war**
- **Outcome**
  - **Makes battlefield more transparent, reducing fog of war**

Personal Case Study - Bruce Fyfe

- **Role - Chindit in China Burma India Theater in World War II**
- **Story**
  - **Was a quiet man ~ a fierce fighter**

Class Simulation

- **Ground warfare aspects**

Poem

You may talk o' gin and beer
When you're quartered safe out 'ere,
An' you're sent to penny-fights an' Aldershot it;
But when it comes to slaughter
You will do your work on water,
An' you'll lick the bloomin' boots of 'im that's got it.
Now in Injia's sunny clime,
Where I used to spend my time
A-servin' of 'Er Majesty the Queen,
Of all them blackfaced crew
The finest man I knew
Was our regimental bhisti, Gunga Din.
He was "Din! Din! Din!
You limpin' lump o' brick-dust, Gunga Din!
Hi! slippery hitherao!
Water, get it! Panee lao!
You squidgy-nosed old idol, Gunga Din."
            - Rudyard Kipling, Gunga Din

Questions for Further Discussion

- **What is the experience of war like for those on the ground?**

- **Can a war be won with ground forces alone?**

- **Can a war be won without ground forces?**

Reading Assignments

- **How to Make War Chapters 2, 3, 4, 5, 6, 22**
- **TED Talks for this Topic**
  - **http://www.warstudiesprimer.org/ToLearnMore.html**

Recommended Reading to Learn More

- **Non-fiction**
  - **Ernie Pyle - Brave Men**
- **Fiction**
  - **Robert Heinlein - Starship Troopers**
- **Movies**
  - **Glory**
- **Simulations**
  - **Castle Wolfenstein - Apple II**

Conclusion

"Infantry combat is the most extreme experience a human being can go through"

- Steven Ambrose

"The life of man is 'solitary, poor, nasty, brutish, and short'"

- Thomas Hobbes on the Hobbesian state of nature

- ..but this isn't necessarily the life of an (infantry) man in 2004...

Topic 7

Planning and Logistics

Song

Pack up your troubles in your old kit-bag,
And smile, smile, smile,
While you've a lucifer to light your fag,
Smile, boys, that's the style.
What's the use of worrying?
It never was worth while, so
Pack up your troubles in your old kit-bag,
And smile, smile, smile.

- George Henry Powell, Pack Up Your Troubles in Your Old Kit-Bag

Thematic Quote

"Expect the best, plan for the worst"

- Anonymous

"In preparing for battle I have always found that plans are useless, but planning is indispensable"

- Dwight David Eisenhower

Thematic Quote

"No plan of operation extends with any certainty beyond first contact with the main hostile force"

("No plan survives first contact with the enemy")

  - Count Helmuth von Moltke (the Elder)

"We'll start the war right here"

  - Brigadier General Theodore Roosevelt Jr, 0610 June 6 1944 on Utah Beach, upon realizing he had landed 1 kilometer south of their landing zone

Thematic Quote

"Amateurs talk tactics, generals talk logistics"

- Anonymous

"Contingency planning is about running failures to ground…serious strategic planning is about exploiting successes for all they're worth."

- Thomas P.M. Barnett

Thematic Quote

- **The line between disorder and order lies in logistics**
  - **- Sun Tzu**

- **Logistics is the bridge between the economy of the nation and the tactical operations of its own combat forces**
  - **- Admiral Henry Eccles**

Thematic Quote

"My logisticians are a humorless lot...they know if my campaign fails, they are the first ones I will slay."

- Alexander the Great

"It is no easy matter in a global war to have the right materials in the right place at the right time in the right quantities."

- Fleet Admiral Ernest King

Thematic Quote

"The horse, the saddle, the man"
- Old Cavalry principle

The Painting

The Roads of France (A-D)
- Christopher Richard Wynne Nevinson
(Canadian War Museum)

The Question

Does ignoring planning and logistics put a commander in a perilous position?

Logistics 101

- **Force projection**
  - **Preparations for deployment**
  - **Getting fighting force to area of operations with their equipment and support**
- **Sustainment of forces**
  - **Continuous maintenance of forces in theater**
    - **Sustainment of people**
      - **Nutrition, water, clothing, shelter, WMD protection, preventing disease + injury**
    - **Sustainment of weapons and support systems**
      - **- William G.T. Tuttle Jr., Defense Logistics for the 21st Century**

Focused Case Study - Napoleon and Strategic Consumption

- **Strategic consumption is as an army marched away from its base, it had to leave detachments to guard bridges and cross-roads. Soldiers, out-pacing their slow-moving supply wagons, began marauding in search of food. Without food, the warrior's body is less able to fend-off disease. Rolled altogether, these causes are called 'attrition'…the impact of attrition on Napoleonic warfare was critical.**

  - David Chandler, The Campaigns of Napoleon

Focused Case Study - Napoleon and Strategic Consumption

"Understand that the foundation of an army is the belly. It is necessary to procure nourishment for the soldier wherever you assemble him and wherever you wish to lead him. This is the primary duty of a general."

-Frederick the Great

"An army marches on its stomach"

- Napoleon

Focused Case Study - Napoleon and Strategic Consumption

- **In fact, a major theme of strategy in the Napoleonic era was the objective of maneuvering against the enemy's Line of Communications. Napoleon is quite insistent on this point, as his 'maxims' show. As Petre says, "His first thought was always for his own line of communications." If you study Napoleon's correspondences, you will see that a quarter of them are concerned with administration, communications and supply. This is not some poor commissary or clerk somewhere, this is the Emperor himself!**

  - Kevin Zucker

Focused Case Study - Napoleon and Strategic Consumption

- **If you want to experience the problem of commanding a Napoleonic Army, you cannot ignore a consideration that absorbed so much of the Army Commanders' own time; particularly because a principle objective of all operations was to threaten the Line of Communication of the enemy army, either to induce him to give battle on unfavorable ground, or to abandon his ground and retreat. The goals of Napoleonic Strategy are firmly linked together with issues of supply.**

    - Kevin Zucker

Why Study Railroads?

- "Just as railroads shaped 19th century ground warfare

- and aviation refocused combat during the last 100 years,

- the technology of intelligence, surveillance and reconnaissance, the rapid introduction of cyber operations and the proliferation of unmanned aircraft are defining combat in the 21st century."

- David A. Fulgham and Bill Sweetman, Future ISR, Aviation Week, Sept. 5, 2011

Focused Case Study: Railroad Generalship

- **Calculus of logistics**
  - **Distance, time, transport capacity, consumption**
- **Up until 1830 the muscles of men + animals carried every army + its supplies to battle**
  - **Food for animals ~ 1/2 an army's supply requirements**
  - **Army relying on muscle bound transport carried 10 days of supplies**
  - **Therefore these armies were hungry, ragged, exhausted**
    - **Scavenging for food took more time than fighting**

- Christopher R. Gabel, Railroad Generalship: Foundations of Civil War Strategy

Focused Case Study: Railroad Generalship

- **What steam power / trains did for logistics**
  - **Could haul more supplies farther on a given amount of fuel by factor of 10**
  - **Five times faster than mules**
  - **Cargo arrived in better condition (men + supplies)**
  - **Increased geographic scale of military operations**
  - **Permitted armies to be larger**
- **But reliance on railroad lines of communication**
  - **Channeled offensive operations along clearly defined axes of advance**
  - **Caused rail centers to become centers of gravity**

- Christopher R. Gabel, Railroad Generalship: Foundations of Civil War Strategy

Focused Case Study: Railroad Generalship

- **Railroad Generalship**
  - **Strategic level - deals with long distance movement of troops and supplies**
    - **True experts were civilian executives who managed railroads as profession**
      - **They were commissioned**
  - **Tactical level - deals with providing and maintaining supply lines for front line troops**
    - **Established 5 logical principles for this based on hands-on expertise from their work**
  - **Union railroad system succeeded because it granted authority to individuals who knew how to make trains run**

- Christopher R. Gabel, Railroad Generalship: Foundations of Civil War Strategy

Focused Case Study: Confederate Civil War Railroads

- **Southern railroads were sufficient for Confederacy to win a war**
  - **Had very good rail net that was well supported investment-wise**
- **Southern railroads had deficiencies**
  - **Really a collection of short feeder lines that did not interconnect**
    - **North's lines were more consolidated with more East-West routes**
  - **Were not centrally coordinated**
    - **…as the railroads were in the North**

- Christopher R. Gabel, Rails to Oblivion: The Decline of Confederate Railroads in the Civil War

Focused Case Study: Confederate Civil War Railroads

- **Southern railroads had deficiencies (cont)**
  - **Confederacy got the service from their railroads that they paid for (very little)**
    - **Therefore Confederate railroads not committed to the cause**
  - **Northern railroads paid better by Union, gave better service, and if Union was unsatisfied with service they could be taken over by US military railroads**
    - **Therefore, Northern railroads were committed to the cause**

- Christopher R. Gabel, Rails to Oblivion: The Decline of Confederate Railroads in the Civil War

Focused Case Study: Confederate Civil War Railroads

- **Nonetheless Confederate railroads performed well from 1861-1863**
  - **Why did it ultimately fail? War lasted too long**
    - **Wear and tear on physical plant**
      - **Rail wore out -> Trains ran slow -> More trains needed to maintain delivery rates -> Not enough locomotives and railroad cars to do it -> Decreased cargo delivery**
    - **No rail available for new lines**
      - **Not equipped to maintain locomotives and railroad cars**
      - **No new locomotives available**
    - **Skilled railroad personnel were drafted or went to armaments industry**
      - **Unskilled personnel caused accidents**
    - **Union raiders were icing on the cake**
  - **- Christopher R. Gabel, Rails to Oblivion: The Decline of Confederate Railroads in the Civil War**

Focused Case Study: Confederate Civil War Railroads

- **Bottom line**
  - **Railroads were a logistics system that was neglected and allowed to deteriorate in the Confederacy which contributed significantly to the outcome of Civil War**

  - Christopher R. Gabel, Rails to Oblivion: The Decline of Confederate Railroads in the Civil War

Case Study Summary - Transcontinental Railroad

- **Goal**
  - **Link East + West Coasts of US by rail to**
    - **1) Allow (near) instant travel + transport across nation (from 6 months to 6 days)**
    - **2) Deny sanctuary to Native Americans by encouraging settlement along rail lines**
- **Center of Gravity (Strategy)**
  - **Ribbon of rails - lay down, settle around, defend, maintain**
- **Equipment / Training**
  - **A hand-built railroad - cut / blast / fill**
- **Leadership**
  - **In the field Central Pacific had Crocker, Union Pacific had Dodge**
- **Morale**
  - **Central Pacific used Chinese workers, Union Pacific used Irish workers and Civil War veterans**
  - **- National Park Service, Golden Spike Historical Handbook, 1969**

Case Study Summary - Transcontinental Railroad

Tactics / Intangibles

> "In the history of the frontier the Union Pacific Railroad marks the beginning of the end." - Frederick L. Paxson

- Process by which end was obtained
  - First - the railroad pierced Indian barrier + gradually ate into it on each side of right of way
  - Second - the railroad brought immigration, settlement, development, industry, agriculture
  - Frontier gradually disappears…and this was repeated along all other transcontinental railroad lines

- **Mistakes**
  - **Corruption**

- **Outcome**
  - **4 decades of discussion + planning ~ 4 years to build**
  - **Iron rails tie US together geographically, economically, politically in 1869**
  - **Native Americans forced onto reservations**
  - **Frontier no longer exists as of 1890 according to 1890 US Census**
  - National Park Service, Golden Spike Historical Handbook, 1969

Communications Case Study Summary - Khyber Railway

- **Background**
  - **Great Game - strategic rivalry between British Empire + Tsarist Russian Empire for supremacy in Central Asia with Afghanistan at center**
  - **British fear "Jewel in the Crown" India vulnerable to Russian invasion via Kabul through Khyber Pass**
  - **Third Afghan War in 1919 convinces British to build railway**
- **Goal**
  - **Build railway to provide secure, capacious, rapid line of communication to British troops at top of Khyber Pass (Landi Kotal) in Northwest Frontier on Afghan border**
    - **Khyber Pass felt to be impregnable**
  - **- JN Westwood, By Rail Through the Khyber, Trains, Jan 1965**
  - **- Victor Bayley, Permanent Way Through the Khyber**

Communications Case Study Summary - Khyber Railway

- **Center of Gravity (Strategy)**
  - **Convince Pathan tribesman to allow railway to pass through their tribal territories and then enlist them in helping to construct it**
    - **Railway located in Tribal Territory governed by tribal customs**
- **Equipment / Training / Leadership / Morale**
  - **Constructed 1920-1925 from Peshawar to Landi Kotal**
- **Tactics**
  - **Heroic engineering - 42 km route with 34 tunnels + 92 bridges climbing 3,000 feet taking 3.5 hours to traverse**
  - **Railway covered by forts (stations) and watchtowers to guard railway from tribesmen**
    - **"Combined Booking Office Window and Machine Gun Loophole" in blueprints**
  - **- JN Westwood, By Rail Through the Khyber, Trains, Jan 1965**
  - **- Victor Bayley, Permanent Way Through the Khyber**

Communications Case Study Summary - Khyber Railway

- **Intangibles**

  "There are two places in the world where, if you wait long enough, you can see everyone of any importance. One is Victoria Station and the other is Landi Kotal" - Victor Bayley

- **Mistakes**

  - **Great Game ends ~ 1926**

- **Outcome**

  - **Makes India "impregnable for the cost of a single battleship" - Victor Bayley**

  - **Ultimately only 1 train / week traverses the railway, carrying tribesmen to bazaars**

  - JN Westwood, By Rail Through the Khyber, Trains, Jan 1965

  - Victor Bayley, Permanent Way Through the Khyber

Case Study Summary - Shetland Bus

- **Goal**
  - **Covertly supply Norwegian resistance with arms, supplies, information, agents right under Nazi's noses**

- **Center of Gravity (Strategy)**
  - **Provide ferry service between Scotland's isolated Shetland islands + Nazi-occupied Norway**

- **Equipment**
  - **Initially 50-75 foot indestructible Norwegian fishing boats that were lightly armed ~ Later US submarine chasers that were faster + better armed**
  - **Had their own shipyard to maintain the fishing boats**

- **Training**
  - **Experienced volunteer Norwegian fisherman required no training in ways of sea**

- **Leadership**
  - **As part of Special Operations Executive (SOE), operated separate from but with assistance of British military**
  - **Norwegian crews elected their own leaders**
  - **British officers in charge of unit but were not allowed to go on missions because if captured would compromise the network and could not pass as Norwegians…so since they could not assume the risks their men took they never gave orders but lead by persuassion**

- David Howarth, The Shetland Bus

Case Study Summary - Shetland Bus

- **Morale**
  - **Very high for Norwegians as they were able to do their part for the war, unlike most of their countrymen**
  - **Shetlanders heritage is more Norwegian than Scottish, so Norwegians felt somewhat at home away from home**
- **Tactics**
  - **Voyage in winter when nights are longest, blend in as normal fishermen amongst the many Norwegian islands, take advantage of friendly locals + families when possible**
- **Intangibles**
  - **Who are the quislings (collaborators / traitors) in each town?**
- **Mistakes**
  - **Using fishing boats to do warship's tasks on raids**
  - **Not realizing that after 2 years using the fishing boats was no longer safe as the Germans had markedly increased their patrols to look to for them**
- **Outcome**
  - **Operations of 100 men in Lunna and then Scalloway tied up 284,000 Germans in Norway for whole war**
  - **Aided Norwegian morale + sabotage operations, Norwegians agents gave invaluable intelligence**

- David Howarth, The Shetland Bus

Focused Case Study - Normandy

- **Necessary prerequisites**
  - **Defeat of U-boat to allow build up, defeat of Luftwaffe for air superiority, strong Eastern Front to pin down Germans**
- **Could be thought of as a naval, rather than land battle**
  - **Everything hinged on Operation Neptune's success**
- **Logistics was everything**
  - **Mulberries were the basis of Allied logistics**
  - **Pre invasion air campaign destroyed German logistics and continued post invasion**
- **Deception campaign (Operation Fortitude) effectively divided German forces**
    - **Richard Overy, Why the Allies Won, Chapter 5**

Focused Case Study - Pacific Theater WWII

"I fear all we have done is waken a sleeping giant and fill him with a terrible resolve."

- Admiral Yamamoto

- **US**
  - **The Arsenal of Democracy, large population**
- **Japan**
  - **Much smaller industrial base, small population**
  - **Could mobilize more men but couldn't arm them, callups crippled their industry**
  - **- John W. Whitman, The Japanese Army in WWII, S&T No. 218 pp 34-45**

Focused Case Study - Pacific Theater WWII

- **Production numbers**
  - **Field artillery 1941-1945**
    - **Japan - 604; US - 7,800**
  - **Tanks 1942**
    - **Japan - 1,000; US - 25,000**
- **Limited industrial output leads to Japanese soldier going into battle with poor support and supply**
  - **Substituted manpower for material - expected soldiers to sacrifice themselves for good of country**
  - **- John W. Whitman, The Japanese Army in WWII, S&T No. 218 pp 34-45**

Focused Case Study - Pacific Theater WWII

- **For every American soldier in Pacific there were 4 tons of supplies; for every Japanese there were 2 pounds of supplies**
  - **Richard Overy, Why the Allies Won, p. 210**

- **For every American serviceman at the front there were 18 American personnel; for every Japanese serviceman at the front there was 1 Japanese personnel**
  - **Richard Overy, Why the Allies Won, p. 319**

What Was it Like in the Pacific in World War II?

For more than an hour a major told us about his experiences with Patton in Africa, in Sicily, and in France. He used great phrases such as "vast deployment to the east," "four crushing days into Palermo," "a sweeping thrust toward the open land south of Paris," "a gigantic pincers movement toward the heart of Von Rundstedst's position."

When he had won the war, he turned to me and asked, "What was it like in the Pacific?" I started to reply as honestly as I could. But somehow or other I got mixed up with that kid I knew on a rock out there. Twenty-seven months on one rock. Heat itch all the time. Half a dozen trees. Got involved in the bootlegging scandal. Helped repair a ship bound for the landing at Kuralei. And then he got a cablegram from home.

"Why, hell!" the major snorted. "Seems all he did was sit on his ass and wait."

"That's exactly it!" I cried, happy to find at last someone who knew what I was talking about.

"That's a hell of a way to fight a war!" he grunted in disgust, and within the moment we had crossed the Rhine and were coursing the golden tanks down the autobahn.

But our war was waiting. You rotted on New Caledonia waiting for Guadalcanal. Then you sweated twenty pounds away in Guadal waiting for Bougainville. There were battles, of course. But they were flaming things of the bitter moment. A blinding flash at Tulagi. A day of horror at Tarawa. An evening of terror on Kuralei. Then you relaxed and waited. And pretty soon you hated the man next to you, and you dreaded the look of a coconut tree."

- James A. Michener, Tales of the South Pacific, pp.9-10

Focused Case Study - Ulithi

- **Invasion of Okinawa involved more men, ships and supplies than Normandy**
- **For Normandy, Britain was the Allies' base**
  - **What would be the Allies' base for the invasion of Okinawa?**
- **Ulithi atoll**
  - **US Navy arrives Sept 1944 finding 400 natives and 3 Japanese**
  - **4 largest islands turned into world's largest base in 1 month by Service Squadron 10**
    - **A mobile service squadron that Admiral Nimitz called "the secret weapon"**
  - **Used for 7 months until March 1945 and then abandoned after the invasion force sortied**
    - **- George Spangler, Ulithi**

Focused Case Study - Fleet Replenishment in WW II

- **Ability to undertake operations in the Pacific away from bases is set by availability of oilers and supply ships to replenish task forces**
  - **Japanese Navy not designed for long range operations**
    - **Attack on Pearl Harbor took 8 of 9 fleet oilers**
      - **HP Wilmott, Pearl Harbor, p. 59**
  - **British Pacific Fleet tied to fixed bases and not designed for long range operations**
    - **Thomas Wildenberg, Gray Steel and Black Oil: Fast Tankers and Replenishment at Sea in the U.S. Navy, 1912-1992**
    - **Worrall Reed Carter, Bullets, Beans and Black Oil**

Focused Case Study - Fleet Replenishment in WW II

- **US Navy designed for long range operations - "fleet train"**
  - **1907-1908 Great White Fleet around the world cruise was logistical nightmare to keep ships supplied with coal ~ depending on foreign shipping for fuel a bad idea**
    - **Led to commissioning their own colliers**
  - **Fuel shifts from coal to oil**
    - **1915 - First oilers commissioned**
    - **1917 - First refueling at sea ~ Chester Nimitz involved**
  - **How to fund oilers which are needed in wartime but not in peacetime?**
    - **National Defense Tanker Program - US provided subsidies to pay for extra horsepower needed by commercial tankers so they could serve as fleet oilers in wartime**
      - **Thomas Wildenberg, Gray Steel and Black Oil: Fast Tankers and Replenishment at Sea in the U.S. Navy, 1912-1992**
      - **Worrall Reed Carter, Bullets, Beans and Black Oil**

Focused Case Study - Interstate Highway System

- **1919 - Eisenhower crosses US in army caravan in Transcontinental Motor Train**
  - **Washington DC to San Francisco, 3250 miles, 62 days**
- **1920's - States go on to build named highways (Lincoln Highway)**
- **1930's - Germany builds autobahns**
- **1945 - Eisenhower uses autobahns**
- **1956 - Eisenhower authorizes National Interstate and Defense Highway System**
  - **Head of committee that designed the system - General Lucius D. Clay**
  - **Look at blue signs with 5 stars when driving**
    - **Kevin A. Wilson, Brother Road, Autoweek July 3, 2006**

Personal Case Study - Admiral Harold Koenig

- **Role - Surgeon General, US Navy**
- **Story**
  - **Sea stories of Cold War involving the touring of caves in Norway holding supplies for US Marines to use when defending Norway**

    "There was an entire hospital in that cave!"

    "The peace dividend is real…when you don't have to tie up your GNP in defense…your economy benefits"

Class Simulation

- **Logistical aspects**

Poem

Slide text

Questions for Further Discussion

- Can a war be won with logistics alone?
- Can a war be won without logistics?
- What is the experience of war like for those in logistics?
- Are REMFs appropriately named?

Reading Assignments

- **How to Make War Chapters 23, 24, 26, 27**
- **TED Talks for this Topic**
  - **http://www.warstudiesprimer.org/ToLearnMore.html**

Recommended Reading to Learn More

- **Non-fiction**
- **Fiction**
  - **James Michener - Tales of the South Pacific**
- **Movies**
- **Simulations**
  - **Eastern Front - Atari 800**

Conclusion

"No matter how involved a commander may become in the elaboration of his own thoughts, it is sometimes necessary to take the enemy into account"

- Winston Churchill

Conclusion

"If real estate is all about location, location, location;

Then war is all about logistics, logistics, logistics"

- Michael P. D'Alessandro, M.D.

Conclusion

"God is in the details"

- Mies van der Rohe

Conclusion

"If it be now, 'tis not to come;
if it be not to come, it will be now;
if it be not now, yet it will come.
The readiness is all."

- William Shakespeare, Hamlet

Topic 8

Intelligence

Song

James Bond theme

- Monty Norman

Thematic Quote

"The name is Bond, James Bond"

"I'm the classic agency type - compact and low to the ground"

- Vince Recardo (Peter Falk) in The In-Laws

Thematic Quote

"In war-time, truth is so precious that it must be protected by a bodyguard of lies"

- Winston Churchill

"Gentlemen do not read each other's mail"

- US Secretary of State Henry Stimson, in 1929, when closing down Herbert Yardley's American Black Chamber code breaking unit

Thematic Quote

"As we know, there are known knowns. There are things we know we know. We also know there are known unknowns. That is to say we know there are some things we do not know. But there are also unknown unknowns, the ones we don't know we don't know."

- Donald Rumsfeld

Thematic Quote

"The whole art of war consists in getting at what is on the other side of the hill"

- Duke of Wellington

"The art of war is simple enough. [First,] find out where your enemy is."

- Ulysses S. Grant

"Nam et ipsa scientia potestas est. [Knowledge is power.]"

- Sir Francis Bacon

The Painting

The Scout: Friends or Foes?

- Frederic Remington

(Sterling and Francine Clark Art Institute)

The Question

When does a commander feel that they have enough intelligence?

Types of Intelligence

- **Geospatial Intelligence (GEOINT) - information related to the earth from imagery, imagery intelligence, and geospatial information (think mapping)**

- **Human Intelligence (HUMINT) - information from human sources (think covert operations)**

- **Imagery Intelligence (IMINT) - information from a variety of sources including radar, infrared sources and electro-optics**

- **Measurement and Signature Intelligence (MASINT) - information related to detailed characteristics of targets including radar signatures of aircraft and telemetry of missiles**

- **Open Source Intelligence (OSINT) - information gathered from non-classified, non-secret sources**

- **Signals Intelligence (SIGINT) - information from intercepted signals from communications and electronic emissions**

Why Do People Spy?

- **Money**
  - **Out to make a buck**
- **Ideology**
  - **Feels a kinship to country they give secrets to**
- **Conscience**
  - **Believes their government is doing something wrong**
- **Compromised**
  - **Forced to do it**
- **Ego**
  - **Doing it for own gratification**

- Harold C. Hutchinson. Why Spy? StrategyPage, Dec 18, 2006

Covert Intelligence in Fiction

- **Tom Clancy**
  - **How many people are familiar with him?**
  - **Smart guy, great contacts, good listener, a wargamer**
  - **He is very detailed - but he is too perfect - nothing ever goes wrong**
- **The Sandbaggers (TV show) is realistic**
- **Ralph Peters' novels are realistic**

Intelligence in Real Life - Helpful, Rarely Decisive

"How important is intelligence in bringing victory or averting defeat?

 Intelligence does not win wars

 In reality, intelligence is muddled, partial, contradictory, often proving not very secret at all and always confusing."

 - John Keegan, Forget About James Bond, Intelligence Never Wins Wars, Daily Telegraph, Oct 22, 2003

"There is an elemental point about intelligence - it is a secondary factor in war"

- David Kahn

Role of Intelligence Services In Jihads Against the West

- **First jihad against the West**
  - **In 1914 in his declaration of war against Britain, France, and Russia, the Caliph of the Ottoman Empire declared a jihad against the British Empire**
  - **…Unfortunately he lacked the means to communicate this to his citizens**

Role of Intelligence Services In Jihads Against the West

- **Second jihad against the West**
  - **In early 1920's, Soviet Union felt the way to bring down the West was to destroy Western colonial rule and the place to start was in India**
  - **Soviet Union organized, funded, trained an Indian-led "Army of God" composed of Pushtun tribesman from India to launch jihad against British India**
  - **Their activities would be coordinated with similar forces in Egypt, Arabia, Turkey**
  - **Timing was synchronous with anti-British feelings from massacre at Amritsar + Gandhi's civil disobedience campaign**
  - **Just as jihad was about to begin, Soviet economy collapses and Soviets turn to Britain for economic help**
  - **British knew of all this through efforts of its Secret Intelligence Service (SIS), Indian Political, Government Code and Cipher School**
  - **In return for their economic help, Britain forces Soviets to abandon support for "Army of God" + threat of jihad evaporates**
  - **Proved the value + power of intelligence in affecting affairs of state**
    - **- Giles Milton, Russian Roulette**

Role of Intelligence Services In Jihads Against the West

- **Third jihad against the West**
  - **Is now…**
  - **How have intelligence services influenced this jihad?**

George Tenet to Anthony Zinni:

- I'm here to check to make sure that we are supporting you, that you have everything you need.

- I want to understand what your needs are and requirements are.

- I personally want to stay connected to you.

- Please tell me what you need and if we are serving you correctly.

- Help me understand the region of the world you are responsible for.

- Help me understand and see it through your eyes.

- I see the intelligence, but I don't know what filter to put that through or how to understand it.

- I need to understand what I am receiving and what it is about.

Anthony Zinni on George Tenet:

- He made several visits to my HQ, asking those questions.
- Then he asked a personal favor - I'd like you when you are in Washington to visit the agency.
- Sit down with my analysts that work that part of the world and talk to them.
- Talk to them, give them half a day and give them your impression of people and events.
- Listen to their take. I want this interaction.
- I doubt there was ever a DCI that made that level of personal involvement and commitment to military commanders in the field and then wanted those commanders interacting with his analysts to make sure we get it right.
- His heart was in delivering the very best to those who needed his products.

How to Brief

"Tell me what you know.

Tell me what you don't know.

And then tell me what you think."

- Secretary of State Colin Powell

"I always thought that any conversation about the intelligence the briefer provided every morning should clearly articulate the differences between the three, along with the even more clearly defined separation from the fourth, non-intelligence, pillar: discuss the policy question, what we should do about the problem that's just been defined."

- Phillip Mudd, intelligence analyst

There Are Always…

- Known knowns
- Known unknowns
- Unknown unknowns

Intelligence in Deterrence

- **That which is not known is not helpful**

"The whole point of the Doomsday Machine is lost…if you keep it a secret! Why didn't you tell the world, eh?!"

- Dr. Strangelove

Computing Case Study Summary - Enigma

- **Goal**
  - **Rapidly decode intercepted German Enigma encrypted messages so the results could be used against Germans**
  - **These message were at tactical level - most important were those regarding U-Boat movements**
- **Center of Gravity (Strategy)**
  - **Use electromechanical computers to do this**
- **Technology / Equipment**
  - **Broken by Poland in 1933 with electromechanical computer called bomba**
  - **Techniques given to British in 1939, who created bombes**
  - **Techniques given to Americans, who improved bombes**

- Jim Holt, Code Breaker, New Yorker, Feb 6, 2006
- Glenn Zorpette, Breaking the Enemy's Code, IEEE Spectrum, Sept 1987
- Gordon Corera, Poland's Overlooked Enigma Codebreakers, BBC News, Jul. 4, 2014

Computing Case Study Summary - Enigma

- **Training ~ Leadership ~ Morale**
  - **French agent in Germany prewar gave details of Enigma to Poland**
  - **Polish realized key to cracking it was to use mathematicians, rather than linguists, to look for codes**
  - **Involved cream of British academics during the war**
- **Tactics**
  - **By 1944 bombes are decrypting 90,000 Enigma messages / month**
- **Intangibles**
  - **Naval Enigma was most impenetrable - Alan Turing worked on developing an improved bombe for it**
- **Mistakes / Outcome**
  - **Played key role in turning the tide in Battle of the Atlantic**
  - **Germans never suspected a thing**

- Jim Holt, Code Breaker, New Yorker, Feb 6, 2006
- Glenn Zorpette, Breaking the Enemy's Code, IEEE Spectrum, Sept 1987
- Gordon Corera, Poland's Overlooked Enigma Codebreakers, BBC News, Jul. 4, 2014

Computing Case Study Summary - Colossus

- **Goal**
  - **Rapidly decode intercepted German Geheimschreiber (Fish) encrypted messages produced by Lorenz machines (TUNNY) so the results could be used against the Germans**
  - **Messages were at Army level or above (operational + strategic)**
- **Center of Gravity (Strategy)**
  - **Develop + use electronic computer to do this**
- **Technology / Equipment**
  - **Colossus - first digital modern electronic computer**
    - **2,400 vacuum tubes**
    - **First completed in 1943 - 11 in service by end of war**
    - **Controlled by wired logic rather than stored program**

- Colossus at Bletchly Park, Annals of the History of Computing, July 1983
- Glenn Zorpette, Breaking the Enemy's Code, IEEE Spectrum, Sept 1987

Computing Case Study Summary - Colossus

- **Training ~ Leadership ~ Morale**
  - **Built by British Post Office Dollis Hills Research Station**
- **Tactics**
  - **By end of war decrypting 1,200 messages / month**
- **Intangibles ~ Mistakes**
- **Outcome**
  - **Never suspected by Germans ~ Kept secret until 1976**

- **Colossus at Bletchly Park, Annals of the History of Computing, July 1983**
- **Glenn Zorpette, Breaking the Enemy's Code, IEEE Spectrum, Sept 1987**

The Influence of ULTRA in the Second World War

"Now the question remains how much did it shorten the war, leaving aside the contribution made to the campaigns in the Far East on which the necessary work hasn't been done yet. My own conclusion is that it shortened the war by not less that two years and probably by four years - that is the war in the Atlantic, the Mediterranean and Europe."

- Sir Harry Hinsley, historian who during the Second World War worked at Bletchley Park

Cypherpunks

- **In 1976, computer scientist + cryptographer Whitfield Diffie, along with Martin Hellman, developed public key cryptography, which democratized the use of strong encryption**
    - **Every user has public + private key - public key is widely distributed, private key is closely held, and a message encoded with either key can be decoded with the other key**
- **In 1977, 3 MIT mathematicians - Ronald Rivest, Adi Shamir + Leonard Adleman developed algorithms which put Diffie's system into practice + called it RSA encryption + made it a product**
    - **RSA encryption keys can be any size (the prior encryption scheme - Data Encryption Standard (DES) developed by IBM had 56 bit keys, supposedly because the NSA could break it)**
    - **Cryptography genie was now out of bottle**
- **In 1991 Phillip Zimmerman, computer programmer + social activist, released Pretty Good Privacy (PGP) encryption as freeware worldwide using RSA's algorithms so now anyone could have strong encryption for free**
    - **"If privacy is outlawed, only outlaws will have privacy" - Phillip Zimmerman**

- Steven Levy, Crypto Rebels, Wired, Feb. 1993
- Steven Levy, Battle of the Clipper Chip, New York Times, Jun. 12 1994

Cypherpunks

- **Drawback is that cryptography shields law abiding + lawless equally**
  - **Law enforcement + intelligence agencies say if strong encryption is used widely they won't be able to protect public**
- **US Government's way to neutralize encryption = Clipper chip**
  - **Purpose of Clipper Chip was to make genie wear leash + collar**
  - **US Government wanted to create a cyberspace police state using Clipper chip**
- **Arrayed against US Government were Cypherpunks - computer hackers, hardware engineers, high-tech activists**
  - **Believe in "Crypto Anarchy" - where strong, easy-to-use encryption is accessible to all**
  - **Believe cryptography is silver bullet to help individuals reclaim privacy**
  - **Believe that cryptography is liberating tool that empowers individuals by protecting communications from government**

- Steven Levy, Crypto Rebels, Wired, Feb. 1993
- Steven Levy, Battle of the Clipper Chip, New York Times, Jun. 12 1994

Cypherpunks

- **Clipper chip used key escrow to neutralize encryption**
    - **Normally two parties communicate in total privacy using public key encryption using public + private keys**
    - **But Clipper chip used an additional key, created during telephone equipment manufacture, that is held by US Government in escrow. When US Government gets a court-approved wiretap, they withdraw the additional key from escrow and use it to defeat your encryption**
    - **With Clipper chip in phones, all telephone communication is private from everybody except the US Government**
    - **But key escrow reintroduced vulnerability that lead to development of public key cryptography - any system that relies on trusted third parties to hold keys is vulnerable to coercion and thus weak**
- **US Government's plan to make Clipper chip phone an industry standard was to require it on all government phones**
    - **Thus for companies + individuals who wanted to talk to the government they would need a Clipper chip phone, and rather than having two phones, everyone in the US would eventually end up with a Clipper chip phone**
- **Bottom line was a war between those who would liberate cryptography and those who would suppress it**

- Steven Levy, Crypto Rebels, Wired, Feb. 1993
- Steven Levy, Battle of the Clipper Chip, New York Times, Jun. 12 1994

What Happened to the Clipper Chip?

"The Clipper proposal sought to have all strong encryption systems retain a copy of keys necessary to decrypt information with a trusted third party who would turn over keys to law enforcement upon proper legal authorization. We found at that time it was beyond the technical state of the art to build key escrow systems at scale. Governments kept pressing for key escrow, but Internet firms successfully resisted on the grounds of the enormous expense, the governance issues, and the risk. The Clipper Chip was eventually abandoned."

- Peter Neuman et.al., Keys Under Doormats, Communications of the ACM, Oct. 2015

On Encryption

"We recognize the importance our officials attach to being able to decrypt a coded communication under a warrant or similar legal authority. But the issue that has not been addressed is the competing priorities that support the companies' resistance to building in a back door or duplicated key for decryption. We believe that the greater public good is a secure communications infrastructure protected by ubiquitous encryption at the device, server and enterprise level without building in means for government monitoring."

…

"History teaches that the fear that ubiquitous encryption will cause our security to go dark is overblown. There was a great debate about encryption in the early '90s. When the mathematics of "public key" encryption were discovered as a way to provide encryption protection broadly and cheaply to all users, some national security officials were convinced that if the technology were not restricted, law enforcement and intelligence organizations would go dark or deaf.

As a result, the idea of "escrowed key," known as Clipper Chip, was introduced. The concept was that unbreakable encryption would be provided to individuals and businesses, but the keys could be obtained from escrow by the government under court authorization for legitimate law enforcement or intelligence purposes.

The Clinton administration and Congress rejected the Clipper Chip based on the reaction from business and the public. In addition, restrictions were relaxed on the export of encryption technology. But the sky did not fall, and we did not go dark and deaf. Law enforcement and intelligence officials simply had to face a new future. As witnesses to that new future, we can attest that our security agencies were able to protect national security interests to an even greater extent in the '90s and into the new century."

- Mike McConnell, Michael Chertoff, William Lynn, Why The Fear Over Ubiquitous Data Encryption is Overblown, Washington Post, Jul. 28, 2015

[Mike McConnell is the former director of the NSA. Michael Chertof is the former Secretary of Homeland Security]

[These views are also held by Michael Hayden, the former director of the NSA and the CIA]

Focused Case Study: Open Source Intelligence - The Threat

- **Background**
  - **Cold War military intelligence depicts Soviet military personnel + equipment as 10 feet tall**
- **Technique**
  - **Find Soviet Jewish émigrés to USA who served in Soviet military**
  - **Interview them, ask them "What's it really like?"**
- **Findings**
  - **Revealed paper tiger**
    - **Personnel - alcoholism, hazing, ethnic issues, unloyalty to party**
    - **Equipment - brittle**
- **Results**
  - **Too fantastical to believe - but did get it right**
- **Lesson**
  - **Good journalist / foreign correspondent is ultimate intelligence person on the ground ~ like a Foreign Area Officer**

- Andrew Cockburn, The Threat: Inside the Soviet Military Machine, 1983

Focused Case Study - Do-It-Yourself Open Source Intelligence

- **Daily USAF operations are broadcast on the USAF High Frequency Global Communications Service**
  - **Listen with a short wave radio with single side band coverage on 11175 KHz USB**
  - **Hear air to ground communications - routine and emergencies - phone patches, and Emergency Action Messages**
  - **In Cold War used to be a good way to learn, when waking up, if the world would end that day**
  - **Today is a great way to know when military operations are to commence because traffic increases dramatically before war as they are mainly cargo aircraft handling logistics**

Focused Case Study: Thousand Grains of Sand

- **China has enlisted entire country to gather open source intelligence**
  - **Chinese intelligence has 100,000 people working to keep track of Chinese overseas and what they could or should grab for motherland**
    - **Brief Chinese students and business people before they leave country to study or do business - ask them to bring back anything that may help motherland**
    - **Debrief them upon return on whatever information they obtained**
    - **Most of these "spies" are not caught**
    - **Cash rewards given for valuable information = commercial transactions**
  - **Try to co-op Chinese immigrant community**
  - **Actions are coupled with loose Chinese intellectual property laws**
  - **- More Grains of Sand, Strategy Page, Nov 11, 2006**

Personal Case Study - Lt. Erhard Dabringhaus

- **Role - Intelligence officer, US Army, WWII**
- **Story**
  - **Born in Germany, emigrated to US in 1930's**
  - **In basic training, volunteered for intelligence work**
  - **Landed on D-Day, fought to VE Day**
  - **After WWII served in US Army Counter Intelligence Corps**
    - **Worked with Nazi informants spying on Russians**
    - **Unknowingly had as an agent Klaus Barbie, the head of Gestapo in Lyons, the Butcher of Lyons**
    - **Realized this in 1983**

Personal Case Study - Sergeant Einar B.

- **Role - US Army / NSA SIGINT - Mid to late 1980's**
- **Story**
  - **Defense Language Institute in Monterey**
    - **Obtaining clearance story**
    - **Graduation photo in Pravda**
  - **Worked with elephant cage antenna at US Army Security Agency Field Station Augsburg**
    - **Listened to Soviets on other side of border**
  - **For grins, would cross into East Berlin, shop at Soviet Kasserns / Commissaries, try to strike up conversations with Soviet soldiers who would run away**
  - **He thought the Soviets would get to the Rhine before we would**
  - **Was a wargamer before…and after…his service**

Personal Case Study - Lt Robert A.

- **Role - Computer science researcher**
- **Story**
  - **Served as officer in airborne unit at end of Vietnam War, helping Vietnamese boat people in operation other than war**
  - **Deployed Knowledge Management System - first hypertext system in the US Navy in 1980's**
  - **Developed Petaplex project for NSA for digital library architecture to handle 20 petabytes of storage with millions of accesses / second with sub second response time**
  - **Discussion in 2001 of using USS Jimmy Carter to tap undersea fiber optic cables**
    - **Media said it can't be done**
    - **He inquired as to why one should believe the media on this topic**

Class Simulation

- **Intelligence aspects**

Poem

Slide text

Questions for Further Discussion

- **What are the different types of intelligence that are available?**
- **What is the importance of covert intelligence in war?**
- **What is the experience of war like for those in intelligence?**
- **How much intelligence is enough?**
- **How important is intelligence in war?**
- **Can a war be won with intelligence alone?**
- **Can a war be won without intelligence?**

Reading Assignments

- ## How to Make War Chapter 14
- ## TED Talks for this Topic
  - ### http://www.warstudiesprimer.org/ToLearnMore.html

Recommended Reading to Learn More

- **Non-fiction**
  - **Ernest Gann - The Black Watch**
- **Fiction**
  - **John LeCarre - Tinker, Tailor, Soldier, Spy**
- **Movies**
  - **The Lives of Others**
  - **The Sandbaggers**
- **Simulations**

Conclusion

"Time spent in reconnaissance is seldom wasted"

    - Anonymous

Conclusion

"Many intelligence reports in war are contradictory; even more are false, and most are uncertain."

- Clausewitz

Conclusion

"The most difficult task that falls to us in intelligence is to see the world as it is, not as we - or others - would wish it to be."

- Robert Gates, Director of Central Intelligence Agency

Topic 9

Naval Warfare

Song

Anchors Aweigh, my boys, Anchors Aweigh.

Farewell to college joys, we sail at break of day-ay-ay-ay.

Through our last night on shore, drink to the foam,

Until we meet once more. Here's wishing you a happy voyage home.

- George D. Lottman, Anchors Aweigh

Song

We are sailing, we are sailing
Home again
'Cross the sea
We are sailing
Stormy waters
To be near you,
To be free

Oh Lord, to be near you, to be free
Oh Lord, to be near you, to be free
Oh Lord, to be near you, to be free
Oh Lord

- Rod Stewart, Sailing

Thematic Quote

"For much of history, history itself has been landlocked. Most of us tend to think in terms of towns and cities, mountains and rivers, continents and countries, but if we stop thinking about, say, the Asian land mass or a history of India, and put the oceans in the foreground instead, then we get a completely different perspective on our past."

- Neil MacGregor, A History of the World in 100 Objects, Episode 60

Thematic Quote

"From time immemorial, the purpose of a navy has been to influence, and sometimes decide, issues on land. This was so with the Greeks of antiquity; the Romans, who created a navy to defeat Carthage; the Spanish, whose armada tried and failed to conquer England; and, most eminently, in the Atlantic and Pacific during two world wars. The sea has always given man inexpensive transport and ease of concealment over long distances. It has also provided concealment, because being over the horizon meant being out of sight and effectively beyond reach. The sea has supplied mobility, capability, and support throughout Western history, and those failing in the sea-power test - notably Alexander, Napoleon, and Hitler - also failed the longevity one."

- Edward L. Beach, Keepers of the Sea

Thematic Quote

"Ship, Shipmate, Self"

- Old Navy principle

Thematic Quote

"He who commands the sea has command of everything…"

- Themistocles

The Painting

Dazzle Ships in Drydock at Liverpool
- Edward Wadsworth
(National Gallery of Canada)

The Question

Must a country rule the waves to ensure its security?

Why Study Naval History?

"Because this is a planet largely covered in water. It's wrongly named. It shouldn't be called Earth. It should be called Oceania…The sea has inevitably played an absolutely key role in every form of human development, not least when humans decide to fight each other. The sea has been of absolutely crucial importance in virtually all the wars…One must have a knowledge of the maritime dimensions, not just take it for a given but actually know what the dynamics of naval warfare are, what the maritime interactions between land and sea are, because if you don't, I don't think you understand really anything that has happened in the past…"

- Professor Eric Grove

How Is Naval Warfare Different?

"Unlike in the army or air force, the entire ship's company of a warship goes to war together, and shares the same risks. Cooks, stewards, writers, signallers and stokers form just as important a part of a ship's company as the gunners and torpedo men who actually fired at the enemy. All hands were needed to save the ship if it was damaged - to shore up flooding, extinguish fires or run emergency power cables. On board a warship, everyone was in it together."

- Angus Konstam, The British Sailor of the Second World War

The Navy Difference

"Doctrine is laid out in joint warfare publications, but Air Force adherence to the letter of such doctrine is probably greater than the Navy's. This may stem from the fact that the Air Force has never operated by itself in wartime; it has always been obliged to adhere closely to existing doctrine, seeking maximum cooperation with the other services. In contrast most naval operations throughout history have been "Navy-only" affairs; naval leaders have had the freedom to modify doctrine as conditions warranted. In addition, the Air Force has developed a reverence for regulation that the Navy has never shared. Naval aviators are fond of saying Air Force pilots may only do something if it is written somewhere that they can, while Navy pilots may do whatever they want as long as it isn't written somewhere they can't.

The Air Force practices positive control of all tactical aviation assets, meaning that control of all tactical decisions resides in one centralized command. The Navy practices control by negation, with tactical decisions being made at the lowest possible level. This is due to the Navy's tradition of reposing special trust in officers in command at sea, whose great distance from shore based admiralty makes centralized command impractical."

- David Martin and John Walcott, Best Laid Plans: The Inside Story of America's War on Terrorism, 1988

Naval Philosophers

- **Alfred Thayer Mahan**
  - **Greatest naval strategist ever known**
  - **Laid out strategic principle for employment of US naval power around the word**
    - **Focused on capturing and then exploiting "command of the sea" = ability of your navy to rule the waves and deny that capacity to opposing fleets**
    - **Without that resulting sea power, no great power could hope to dominate or even seriously influence the course of wars on land**
    - **Thomas P.M. Barnett The Pentagon's New Map p. 64**
  - **Summary: The sea rules the land**
    - **Destroying rival fleets is best way to assure uninterrupted control of sea**

Doctrine of Decisive Battle

- **Mahan's Influence of Sea Power Upon History - 1890**
  - **Command of the sea was the key to success in war**
  - **Way to secure the sea was to engage enemy's main force and destroy it = decisive battle**

    - David M. Kennedy, Victory at Sea, The Atlantic Monthly, March 1999

Every Warship is a Compromise Between...

- **Basic attributes of a man-of-war**
  - Speed
  - Protection
  - Armament
  - Operational range

Naval Missions

- Sea control
- Convoy protection
- Power projection from the sea
- Amphibious assault

Global Seapowers in History

- **Countries**
  - 1470 - 1540 Portugal / 1600 - 1670 Netherlands / 1713 - 1920 United Kingdom / 1942 - 2009 United States
- **Characteristics**
  - Their challengers focused on land conquests + regional power, they built naval forces with global reach / sustainment / access
  - Led in technological innovation + operational thinking (caravels, fluyts, dreadnoughts)
  - Commanded 50% of capital ships of their time, capable of winning battles around the world
  - Moved from one theater to next, supported by logistics networks + access agreements, controlled the ladder of escalation
  - In peacetime secured global commons, supported free trade by ensuring freedom of movements of goods + people across globe

- Daniel Whiteneck, Michael Price, Neil Jenkins, Peter Swartz. The Navy at a Tipping Point: Maritime Dominance at Stake? CNA. Feb. 2010

Case Study Summary - Spanish Armada 1588

- ## Background
  - ### Spain - worldwide Catholic superpower funded by gold + silver of America
  - ### England - weak Anglican nation whose privateers steal from Spain and who supports Protestants in Dutch Revolt
- ## Goal
  - ### Spain - stop English privateering + remove England as thorn in side in Netherlands under guise of returning England to Catholicism
  - ### England - survive
- ## Center of Gravity (Strategy)
  - ### Spain - sail convoy to Netherlands to load army, then invade England
  - ### England - use coast watchers to light beacons when you see Spanish, attack early in English Channel, attack often

  - The Spanish Armada, In Our Time, BBC, Oct. 7, 2010

Case Study Summary - Spanish Armada 1588

- **Equipment**
  - **Spain - convoy and defense shield of 151 ships carrying supplies for army of 30,000 men in Netherlands**
  - **England - 30-40 heavily armed ships with fast sailing rig + large guns, very small army**
- **Training**
  - **Phillip II reorganized Royal Navy when he was King of England 1554-1558 with Mary Tudor**

- The Spanish Armada, In Our Time, BBC, Oct. 7, 2010

Case Study Summary - Spanish Armada 1588

- **Leadership**
  - **Spain**
    - **Phillip II - King**
    - **Duke of Medina Sidonia - leader of fleet**
    - **Duke of Parma - leader of Spanish Army in Netherlands**
    - **Pope Sixtus V - provided funding for Armada, upon its success wanted England made Catholic again but did not want England as part of Spanish Empire. Dictated Parma must be leader of invasion which means army can't be transported direct from Spain but must be ferried across English Channel**
  - **England**
    - **Elizabeth I**
    - **Lord Howard of Effingham - leader of fleet**
    - **Francis Drake**

- The Spanish Armada, In Our Time, BBC, Oct. 7, 2010

Case Study Summary - Spanish Armada 1588

- **Morale**
  - **Spain - obedient to orders**
  - **England - very high, encouraged individual initiative**
- **Tactics**
  - **Spain - centralized command + control - close + board**
  - **England - get the weather gauge, encouraged decentralized attacks, cross the T + stand off**
- **Intangibles**
  - **Spain - have great power + great resources but also have great problems + responsibilities so are spread very thin**
  - **Spain has no communication between Parma + Medina Sidonia**

- The Spanish Armada, In Our Time, BBC, Oct. 7, 2010

Case Study Summary - Spanish Armada 1588

- **Mistakes**
  - **English tactics fail - Spanish fleet arrives in Netherlands but Spanish Army not ready to load**
  - **English fire ships scatter Spanish fleet but don't destroy it + England really presses the attack + runs out of ammunition**
  - **Spanish fleet can't sail back to Channel to load army once dispersed so they sail north around England**
- **Outcome**
  - **Spain - never really realizes she has lost - 75% of fleet survives, Phillip II plans to try again next year but instead changes focus to French Civil War**
  - **England - never realizes she has won**
  - **Creates English national myth that the English nation of arms is at sea, not on land ~ War at sea is the way**
  - **Continues myth of "The Few" (Agincourt / Armada / Battle of Britain)**

- The Spanish Armada, In Our Time, BBC, Oct. 7, 2010

Transformation Is Easy If...

- **Fred T. Jane**
  - **Otaku of naval affairs at turn of 20th century**
  - **Guiding light of open source intelligence**
    - **Jane's Fighting Ships**
    - **Jane Naval Wargame**
  - **Work was ignored by Royal Navy**
    - **Had long history, were backward thinking**
  - **Work was embraced by Imperial Japanese Navy**
    - **Had no history, were forward thinking, were easier to transform**
    - **Officers would visit Portsmouth + then come wargame with him**
    - **Played influential role in maturation of Imperial Japanese Navy**
  - **After Russo-Japanese War, both sides shared lessons learned in Jane's Fighting Ships**
  - **- Richard Brooks, Fred T Jane - An Eccentric Visionary**

Staff Ride - Naval Arms Race Before World War I

- **Prelude - Politics - Strategy**
  - 18 + 19 centuries - Royal Navy subscribes to "Two Navy Standard" - Royal Navy must be more powerful than fleets of next 2 powers combined
  - 1890 - Wilhelm II becomes Kaiser of unified Germany, wanted Germany to become power to rival Britain + France, needed overseas empire with colonies + global trade
  - Kaiser was student of Mahan + believed in strong ocean going fleet as projector of state's power ~ Germany deserves a "place in the sun"
  - Kaiser also stressed German economy + industry dependent on import of raw materials + Germany dependent on food imports so a naval blockade would cripple Germany and a strong Navy would prevent it
- **Approach of armies to battlefield - Why was battle fought here**
  - British strategy - distant blockade by closing approaches to North Sea + Baltic Sea at entrance to English Channel + north of Scotland - use light ships to cruise North Sea looking for sortie from High Seas Fleet - when sortie is seen Royal Navy Home + Channel fleets sortie from Scapa Flow + Rosyth + cut off High Seas Fleet from base at Kiel
  - German strategy - Can't fight unified Royal Navy, want to fight it piecemeal
- **Leaders**
  - Italy - Vittorio Cunibertia - Naval architect who first conceived large battleship with large number of heavy guns
  - Germany - Kaiser Wilhelm II ~ Admiral von Tirpitz - built German High Seas Fleet
  - United Kingdom - Winston Churchill, First Lord of the Admiralty
  - United Kingdom - Admiral Jacky Fisher, First Sea Lord - modernized Royal Navy in 1905 by building Dreadnaught with big guns + high speed that could engage enemy at long range, scrapped older + smaller ships, realized Germany was the enemy so built bases at Scapa Flow + Rosyth to control North Sea
- **Logistics**
  - High Seas Fleet limited to North Sea + English Channel because lacked overseas bases to support operations outside this area, ships had worse habitability + better compartmentalization than British
  - Royal Navy ships designed to work around world supported by overseas bases, ships had better habitability + less compartmentalization than Germans
- **Weapons - Direct and indirect**
  - Start with 12" guns
  - Dreadnaught - several big gun turrets, centralized fire control, heavy armor, fast speed
  - Battlecruiser - outfight anything smaller, outrun anything bigger, for commerce raiding + scouting in fleet actions, Royal Navy sacrificed armor to do this, High Seas Fleet sacrificed gun size to do this
  - Cruiser - scouting + supporting main battlefleet, for naval presence around the world + guarding sea lines of communication
  - Torpedo boats + Torpedo boat destroyers - torpedoes were wonder weapon + needed to be countered
- **Order of Battle**
  - Text
- **Organization - Units and formations**
  - Text
- **Command, control, communications, intelligence**
  - First use of radio to command fleets
- **Tactics**
  - Broadsides of main battleline, crossing the T, German simultaneous turn away
- **Weather**
  - Always foggy
- **Terrain**
  - North Sea + Baltic Sea easily blockaded
- **Operational**
  - 1898 - German naval expansion begins, end of British "splendid isolation" from Europe + begins to form alliances ~ German Naval League formed by leading industrialists to lobby public for strong fleet + colonies ~ Naval arms race takes off
  - What could be gained by hazarding decisive battle? If Germans won blockade would be lifted + British coast would be vulnerable to attack; If British won Germany would still be blockaded but could not operate against German coast due to their light forces of torpedo boats
  - Thus Jellico was "Only man on either side who could lose the war in an afternoon"
- **Chronologic narrative of battle taking note of friction and fog**
  - 1916 - Battle of Jutland - High Seas Fleet on a sortie thought they were encountering + fighting a piece of Royal Navy, when they realized they were fighting whole Royal Navy they fled and never went to sea again
  - Admiral Beatty - "There is something wrong with our bloody ships today and there is something wrong with our system"
- **Decisions - What good and bad ones were made**
  - End result of German naval challenge was Britain was allied to France when war broke out
  - Britain implements distant blockade from Scapa Flow in Scotland rather than close blockade off Heligoland near Germany
  - Distant blockade is effective, Germans can't force a battle to break it, Germans try counter blockade by submarines and is effective but they suspend it in 1916 due to fears of drawing US in war
  - Admiral Scheer, who is aggressive, is given command of High Seas Fleet and he attempts to force a battle to break the blockade and Jutland is result
  - German failure to win at Jutland means they failed to break the blockade, thus they restart their counter blockade by submarine, this brings the US into the war, this leads to German defeat
- **OODA loop - Who is inside the other's**
  - Text
- **Who thought they won, who really won**
  - Tactical victory at Jutland for Germans by sinking more ships, strategic victory at Jutland for British as High Seas Fleet never went to sea again
- **What effect did it all have - Aftermath of battle**
  - British naval blockade of Germany drove Germany to starvation
  - High Seas Fleet mutinies when asked to make last sortie to break blockade + score decisive victory late in 1918
  - High Seas Fleet surrenders at end of war, scuttles their fleet at Scapa Flow

- Lew Bitter, The First Arms Race: German-British Naval Rivalry and the Opening of the Great War, Strategy & Tactics 250

Staff Ride - Gallipoli
February 1915 - January 9, 1916

- **Prelude - Politics - Strategy**
  - Before World War I Ottoman Empire was neutral, had purchased + paid for 3 dreadnaughts from Britain, Churchill requisitioned them before outbreak of war, Germany sent 2 ships as replacements, British seize Ottoman destroyer on high seas, Ottomans close Dardenelles to Allied ships + black out light houses + lay mines thus blocking export of Russian grain to market + import of British weapons to Russia
  - Attempt to take Ottoman Empire out of the war + persuade Bulgaria + Romania to join Allies
  - Bosphorous was strategic objective of campaign to reconnect with Russian allies in Black Sea
  - Strategy was clear Dardenelles Narrows, advance to Istanbul + bombard it and put Sultan at risk, seize Bosphorous
- **Approach of armies to battlefield - Why was battle fought here**
  - 90% of Russian grain + 50% of Russian exports go through Dardenelles
  - Russia needs military supplies + Trans-Siberian Railway won't open until 1916
- **Leaders**
  - British - General Ian Hamilton - leads from the rear ~ Ottomans - Mustafa Kemal Ataturk - leads from the front
- **Logistics**
  - British not trained for amphibious operations
- **Weapons - Direct and indirect**
  - 100 guns (12 modern) in Ottoman forts in Dardenelles
- **Order of Battle**
  - 13 British + Empire divisions ~ 20 Ottoman divisions
- **Organization - Units and formations**
  - Text
- **Command, control, communications, intelligence**
  - Poor coordination between Royal Navy + British Army ~
  - Allies had ill-defined goals, poor planning, inexperienced troops, poor intelligence + maps, inadequate equipment
- **Tactics**
  - British not trained for amphibious operations
- **Weather**
  - N/A
- **Terrain**
  - Dardenelles are 30 miles long and can be less than 1 mile wide ~ Ottomans always had high ground
- **Operational**
  - Feb. 19 + 25 - Initial British naval probes to clear Ottoman forts + minefields in Dardenelles fail
- **Chronologic narrative of battle taking note of friction and fog**
  - Mar. 18 - 18 British + French battleships + battlecruisers try to force their way through Dardenelles, Ottoman forts + mines sink 3 + heavily damage 3 + put 3 others out of action
  - Apr. 25 - Amphibious force landed on Gallipoli Peninsula to occupy forts + high ground with British coming ashore in opposed + unopposed landings but have no cohesive plan on what to do once ashore
  - Ottomans initially panicked but reorganize, eventually settle into trench warfare
  - Allies can't maneuver + with backs to sea can't generate enough combat power for frontal assaults + Ottomans too weak for counterattacks
  - Aug. 6 - Allies land at Sulva Bay to outflank Ottomansbut unsuccessful
  - Jan. 9, 1916 - British withdraw
- **Decisions - What good and bad ones were made**
  - 1 month gap between naval attack in Dardenelles + invasion of Gallipoli gave Ottomans time to organize
- **OODA loop - Who is inside the other's**
  - No one
- **Who thought they won, who really won**
  - Ended as stalemate - Allies could not achieve their objectives, Ottomans could not push them into sea
  - Ottomans thought they won, Ottomans really won
- **What effect did it all have - Aftermath of battle**
  - 250,000 casualties on each side
  - One of great Allied failures of World War I
  - Amphibious assault thought to be impossible
  - Defining moment in history of Australia + New Zealand as it was major factor in their progress to independence
  - Churchill was disgraced + ends up as battalion commander in Royal Scots Fusiliers
  - Weakened Ottoman Empire but fired up Turkish nationalism

- John Dudek, Running the Dardanelles Forts - Gallipoli March 1915, The Wargamer, Apr. 27, 2015
- B.A. Friedman, The Battle of Gallipoli, Medium, Apr. 23, 2015

Case Study Summary - First Battle of the Atlantic

- **Goal**
  - **Initially restricted submarine warfare - conduct anti-commerce campaign against Britain**
  - **Eventually conduct unrestricted submarine warfare on neutral + enemy shipping to cut off Britain's economic lifeline + bring it to peace table + to retaliate for British hunger blockade of January 1916 which was total economic blockade of Germany**
- **Center of Gravity (Strategy)**
  - **Get Britain to sue for peace within 6 months by sinking 600,000 tons of British shipping per month + persuading 40% of neutral shipping to not sail, thus reducing British shipping by 39%**
  - **Acknowledged that US (Britain's best antisubmarine weapon) would join Britain in war but it would take 18 months for US to mobilize which would be too late for Britain**
- **Equipment**
  - **Germany - U-boats and wireless command + control network**
  - **Britain - Escort ships, hydrophones (sonar), depth charges, radio direction finding equipment (RDF)**

- Jan Breemer, Defeating the U-Boat: Inventing Antisubmarine Warfare

Case Study Summary - First Battle of the Atlantic

- **Training**
  - **Well trained on both sides**
- **Leadership**
  - **Germany - good**
  - **British - poor because of unwillingness to focus on Germany's asymmetric threat (U-boat) to British naval mastery**
- **Morale**
  - **High on both sides**

- Jan Breemer, Defeating the U-Boat: Inventing Antisubmarine Warfare

Case Study Summary - First Battle of the Atlantic

- **Tactics**
  - **1914-1915**
    - **Very restricted submarine warfare (taking crews off merchant ships before attacking them) with very limited numbers of U-boats leads to relatively small number of merchant ship losses**
    - **British use of Q-ships, armed merchant ships, Dover patrol are not effective**
  - **Feb 1916 -**
    - **Restricted submarine warfare had some success**
    - **British first use depth charge but it was not effective until 1917 as it needed to be coupled to the use of hydrophones and employed in saturation attacks to become effective**
  - **Oct 1916 - Jan 1917**
    - **Restricted submarine warfare had more success**
    - **Royal Navy has no answer to the U-boat problem**

- Jan Breemer, Defeating the U-Boat: Inventing Antisubmarine Warfare

Case Study Summary - First Battle of the Atlantic

- **Tactics**
  - **Feb 1917 -**
    - **Unrestricted submarine warfare - attack without warning on neutral + enemy merchant shipping**
    - **By March 1917 the German attack had outstripped British defense with no solution in sight according to British Admiralty**
    - **"Briefly stated, I consider that at the present moment we are losing the war." - April 10, 1917 Rear Admiral William Sims, US Navy**
    - **In April 1917 there were 860,000 tons of merchant shipping sunk with 167 merchant ships sunk for every U-boat sunk**
    - **Convoy system adopted by Royal Navy only under pressure from British Prime Minister after he was convinced by junior Royal Navy officers it was the only way to defeat the U-boats**
    - **By October 1918 merchant shipping losses had declined to 116,000 tons + Royal Navy admitted the convoy system was the reason**

 - Jan Breemer, Defeating the U-Boat: Inventing Antisubmarine Warfare

Case Study Summary - First Battle of the Atlantic

- **Intangibles**
    - **Royal Navy's perception of its role + responsibility was operational (seek out enemy fleet + sink it) rather than strategic (protect national interests such as trade)**
- **Mistakes**
    - **Both sides before the war had assumed submarines would only be used against legitimate (naval) targets - sinking merchant shipping without warning + without ensuring safety of passengers + crew was not done by civilized nations**
    - **Royal Navy did not forsee vulnerability of maritime commerce to U-boat + refused to consider convoying of merchant vessels**
    - **Royal Navy saw its primary responsibility to be seeking out + destroying enemy's fleet - protection of commerce was secondary + unglamorous**
    - **Royal Navy's (incorrect) reasons to be against convoys - felt that many ships steaming together would emit massive plume of smoke making them easier to spot, felt ships steaming together when attacked would collide when evading attacker, felt an excessive number of escorts would be needed to guard convoy**
    - **These inflated estimates of magnitude of task of convoying were disproven by junior officers with data who went outside naval chain of command to the Prime Minister who overruled the Admiralty for first time ever**
- **Jan Breemer, Defeating the U-Boat: Inventing Antisubmarine Warfare**

Case Study Summary - First Battle of the Atlantic

- **Outcome**
  - **Submarine was revolution in war at sea + neutralized most powerful fleet in the world**
  - **Prevailing concept of sea power - that it was about command of the sea which was decided through battles between surface ships - overturned by submarine which split command of the sea to above the surface + below the surface components + by 1917 while Britain had command of the sea above the surface the U-boats had command of the sea below the surface**
  - **Wars at sea had been fought + won by seeking out + sinking the enemy…but the U-boat was defeated instead by avoiding it**
  - **Convoy was key to defeating submarine - mainly due to convoy's ability to disappear as convoy shifted burden of finding enemy from ASW defender onto attacking U-boat**
  - **Royal Navy radio intercept organization / radio direction finding capabilities gave them locations of U-boats which when fused with complete situational awareness of where convoys were allowed them to radio convoys and steer them away from U-boats**
  - **Convoy + escorts were an offensive rather than defensive system forcing U-boats to fight for every merchant ship they wanted to attack + a few escort vessels would be enough to deter many attacks**
  - **Convoy system shifts the problem of how to defeat submarine from tactical domain (how to defeat individual U-boats) where sinking submarines is necessity to strategic domain (how to defeat U-boat's war-making purposes) where sinking submarines is a bonus, thus victory becomes based on preservation of shipping + cargoes rather than based on numbers of submarines sunk**

- Jan Breemer, Defeating the U-Boat: Inventing Antisubmarine Warfare

Commerce Raiding

- **Anti-commerce operations allow a smaller navy to take initiative at sea, forcing enemy to disperse his forces for protecting trade, never knowing when or where raiders will strike**

- **Victory could be had by concentrating against vulnerable convoys, striking hard, and then withdrawing before any counterattack**

- **In effect, commerce raiding was a form of naval insurgency**

  - Carl O. Schuster. German Naval Warfare in World War II, Strategy and Tactics 226, Jan-Feb 2005 p.44

Focused Case Study - Themes From The Cruel Sea by Nicholas Monsarrat

- **Chronology of Battle of the Atlantic**
  - **1939 - Learning**
  - **1940 - Skirmishing**
  - **1941 - Grappling**
  - **1942 - Fighting**
  - **1943 - Moment of Balance**
  - **1944 - Winning**
  - **1945 - The Prize**
- **Evolution of sensor technology**
  - **ASDIC, radar, combat information center**
- **Evolution of weapons technology**
  - **Depth charges, hedgehogs, torpedo decoys**

Focused Case Study - Themes From The Cruel Sea by Nicholas Monsarrat

- **Critical role played by reservists in the battle**
- **Gulf between the ashore naval staff and sailors at sea**
- **Gulf between unionized civilian dockworkers and sailors**
- **Bravery of merchant marine crews**
- **Sea is everyone's enemy**
- **Unseen enemy was the Germans**
- **Randomness of death**
- **Post traumatic stress disorder**
  - **In general, sailors were exhausted + terrorized**
  - **In specific, Sub Lt Ferraby was paralyzed**

Focused Case Study - Themes From The Cruel Sea by Nicholas Monsarrat

- ## How to stay alive in war and win

  "War has to be a matter of dedication: anything else gets in the way. You have to be single-minded, free of distraction, tough, un-tender - all the words that don't go with marriage. Otherwise you'll fail, and war will weed you out. It might even do worse: it might take your life, because you're not attending properly….(It is) Better to be on your own. You've got to reach that professional standard, anyway. Muddling through at half-speed just won't do." (p. 322)

Focused Case Study - Themes From The Cruel Sea by Nicholas Monsarrat

- ## On the Americans
  - ### They're not a bit like us. No discipline at all.
  - ### They're not a bit like us. No morals at all.
  - ### The trouble with these people is that you can't help liking them, even though you know you oughtn't to…
  - ### The trouble with these people is that they've no common sense. They're not a bit like us.
- ## In the end
  - ### 3 U-boats sunk in 7 years of combat on the corvettes Compass Rose + Saltash

Case Study Summary - Battle of the Atlantic

- **Goal**
  - **Germans - cut supply route across Atlantic ~ Allies - keep it open**
- **Center of Gravity (Strategy)**
  - **Germans - convoys ~ Allies - U-Boats**
- **Equipment**
  - **German - average then improving ~ Allies bad then improving**
  - **Only 18 German subs in 1939 ~ 400 German subs by early 1943**
- **Training**
  - **German - very good at all times ~ Allies - bad at first then improving**
- **Leadership**
  - **German - very good at all times ~ Allies - bad at first then improving**
  - **German - Donitz ~ Allies - Horton**
  - **Importance of Battle acknowledged by Churchill and Roosevelt who had naval backgrounds, and Hitler who did not**
- **Morale**
  - **High morale at first with Germans, then with Allies**
    - **Richard Overy, Why the Allies Won, Chapter 2**

Case Study Summary - Battle of the Atlantic

- **Tactics**
  - **Battle of attrition with early tide going to Germans**
    - **Through 1941 German long-range patrol aircraft sank large number of ships**
    - **Allied convoy codes broken leading to Germans knowing convoy movements which allowed wolf packs to congregate on convoys**
    - **British ASDIC (sonar) negated by German wolf packs making surface attacks on convoys at night**
    - **German milch cow resupply submarines extended U-Boat time on station**
- **Intangibles**
  - **Allied convoy losses through early 1943 were not sustainable**
  - **German submarine losses starting mid-1943 were not sustainable**
  - **- Richard Overy, Why the Allies Won, Chapter 2**

Case Study Summary - Battle of the Atlantic

- **Mistakes**
  - **Allied failure to use aircraft to close Atlantic Gap earlier**
  - **German failure to recognize Enigma codes were broken**
- **Outcome**
  - **By late spring 1943 tide shifted to Allies and they took fight directly to Germans:**
    - **German U-Boat codes broken allowing Allies to know position of U-Boats**
    - **Submarine Tracking Room and Trade Plot Room integrated to steer convoys around U-Boats**
    - **Allied convoy codes secured**
    - **Centrimetric radar deployed on Allied ships**
    - **Centrimetric radar and Leigh lights on increasing numbers of Allied long-range patrol aircraft**
    - **Hedgehog weapon deployed**
    - **Escort carriers deployed in submarine hunter-killer groups**
    - **Increased training + better tactics**
  - **- Richard Overy, Why the Allies Won, Chapter 2**

"If I had to give credit to the instruments and machines that won us the war in the Pacific, I would rank them in this order; submarines first, radar second, planes third, and bulldozers fourth."

- Admiral "Bull" Halsey

Focused Case Study - Third Battle of the Atlantic in 1980's

- **Goal**
  - Assess predictive accuracy of wargames and fiction
  - What insights do they give on how to accurately wargame the war on terror?
- **Works reviewed:**
  - Third World War by General Sir John Hackett
  - Red Storm Rising by Tom Clancy
  - Red Army by Ralph Peters
  - Next War by James F. Dunnigan
  - Group of Soviet Forces Germany by Ty Bomba
  - Third Battle by Owen Cote
  - Global War Game by US Naval War College
  - War That Never Was by Michael Palmer

Focused Case Study - Third Battle of the Atlantic in 1980's

- ## Authors' service + backgrounds / perspectives
  - ### Sir John Hackett
    - Intellectual gentleman soldier ~ CO of 4th Para Brigade at Arnhem ~ CinC BAOR+NATO NORAG ~ Principal Kings College
  - ### Tom Clancy
    - No military service ~ Insurance salesman ~ Wargamer
  - ### Ralph Peters
    - Enlisted man + Soviet Union Foreign Area Officer US Army
  - ### James F. Dunnigan
    - Enlisted man US Army (Sergeant missile technician in Korea) ~ Prolific wargame designer ~ Writer
  - ### Owen Cote
    - No military service ~ Academician
  - ### Michael Palmer
    - No military service ~ Historian at US Naval Historical Center working with Strategic Concepts Branch on "The Maritime Strategy"

Focused Case Study:
Third Battle of the Atlantic - Themes

- **USSR must strike sooner rather than later if it is to defeat NATO**
  - **Conventional military capabilities of NATO are increasing**
  - **NATO's conventional arms window of vulnerability is decreasing due to conventional rearmament with superior weapons**

Case Study Summary - The Third World War

Written 1978, occurs August 1985, geopolitics focus, war lasts 4 weeks, book has operational feel

- **Goal**
  - **Exploit conventional weakness of West to humiliate US+restabilize absolute rule in Eastern Europe+prevent dissidence/fragmentation**
- **Center of Gravity (Strategy)**
  - **Collapse NATO central region by occupying West Germany before West can mobilize by penetrating Northern Army Group / crossing Rhine in Low countries / rolling up Central Army Group from rear**
- **Equipment**
  - **NATO modernization since 1977 is one of ultimate keys to victory**
  - **NATO had huge electronics advantage**
- **Training - Leadership**
  - **Soviets wanted initiative in battle but system could not support it**
  - **- General Sir John Hackett, The Third World War / The Third World War the Untold Story**

Case Study Summary - The Third World War

- **Morale**
- **Tactics**
  - **Russian**
    - **Mobilize earlier than NATO**
    - **Capture Germany but leave France alone resulting in NATO collapse**
    - **Win in first 2 weeks before reinforcements arrive from USA**
    - **Do not use tactical nuclear weapons ~ use chemical weapons**
  - **NATO**
    - **Forward defense of Germany consisting of a triad of conventional defense, battlefield nuclear weapons, strategic nuclear action**
    - **Targets Soviet command and control**
  - **- General Sir John Hackett, The Third World War / The Third World War the Untold Story**

Case Study Summary -
The Third World War

- **Intangibles**
  - **Triggers**
    - Republican presidential candidate encourages Polish revolt, which Polish workers go on to do
    - Soviets back Middle East coups which give them control over oil except for Iran
    - Soviet intervention in Yugoslavia to bring them back in line leads to US intervention in Yugoslavia leads to Soviets coming to aid of Communist state
  - **NATO dependent on use of nuclear weapons, but not prepared to defend against them**
  - **Role of media in quickly reporting events live**
  - **- General Sir John Hackett, The Third World War / The Third World War the Untold Story**

Case Study Summary -
The Third World War

- ## Mistakes
  - ### NATO underestimates refugee problem
  - ### Soviets misjudge French
- ## Outcome
  - ### Soviets lose Third Battle of Atlantic ~ Cavalry convoys get through + their reinforcements allow NATO counterattack that stops Soviets
  - ### Nuclear exchange leads to dissolution of Warsaw Pact leads to Ukrainian nationalists staging coup leads to dissolution of USSR
  - **- General Sir John Hackett, The Third World War / The Third World War the Untold Story**

Case Study Summary - Red Storm Rising

Written 1986, occurs 1989ish, Battle of Atlantic focus, war lasts 8-12 weeks, book has tactical feel, based on wargame

- **Goal**
  - **USSR attains energy independence by seizing Persian Gulf oil fields**
  - **First must eliminate NATO as political and military force**
- **Center of Gravity (Strategy)**
  - **NATO's political structure - undermine it through maskirovka**
  - **US Navy - neutralize it to stop convoys reinforcing NATO**
  - **Capture Germany ~ NATO plans forward defense of Germany**
- **Equipment**
  - **Soviet - good ~ NATO - great**
- **Training**
  - **Russians take 4 months to whip forces into shape**
- **Leadership**
  - **Increased Russian training leads to identification of combat leaders**
    - **Tom Clancy, Red Storm Rising**

Case Study Summary - Red Storm Rising

- **Morale**
- **Tactics**
  - **Capture Iceland to break Greenland-Iceland-United Kingdom Gap**
  - **NATO strikes first to seize initiative in the air**
  - **Russian Army uses Operational Maneuver groups**
- **Intangibles**
  - **US stealth fighters lethal**
  - **NATO has advantage in air but not air superiority**
- **Mistakes**
  - **Russian mobilization detected by NATO, leads to loss of surprise**
  - **Underestimated strength of NATO ground forces leads to stalemate**
- **Outcome**
  - **NATO holds Germany**
  - **Coup replaces Soviet government**
    - **Tom Clancy, Red Storm Rising**

Case Study Summary - Red Army

Written in 1989, occurs in early 1990's, covers 3 days of battle, has tactical + operational feel alternating between tactical battles + Front Commander, told from Soviet perspective - humanizes Soviets

- **Goal**
  - **Reason for war - the Soviets had to fight - in peacetime the West was fighting and beating them in technology and economics, the Soviets could not compete in peace**

- **Center of Gravity (Strategy)**
  - **Soviet - Main effort on NORTHAG, zoom through them, reach west bank of Rhine, turn south and destroy NATO rear**
  - **NATO - forward defense**
    - **Ralph Peters, Red Army**

Case Study Summary - Red Army

- **Tactics**
  - **Soviet - speed / shock / activeness, information warfare - NATO has to destroy Germany to save it**
- **Intangibles**
  - **Surprises for Soviets**
    - **Complexity of modern battlefield - friction and fog of war**
    - **Everything happens so fast, makes Hitler's blitzkrieg look like horse and cart**
      - **Speed of movement**
      - **Speed with which ammunition is consumed**
      - **Speed with which units cease to exist**
    - **That NATO had no real plan**
      - **Soviets had planned forever + believed in their plan and executed it**

- Ralph Peters, Red Army

Case Study Summary - Red Army

- **Mistakes - NATO**
  - **No unified troop control (NORTHAG like a Warsaw Pact)**
  - **Undervalued speed**
  - **Had combat power but lacked unity of purpose and strength of will - lacked unified military doctrine**
- **Outcome**
  - **Huge Soviet penetration of NORTHAG, US + UK argue for nuclear release, huge CENTAG counterattack starts, FRG refuses nuclear release, FRG declares cease fire and demands all NATO forces to withdraw to west of Rhine**
  - **NATO did well with electronic warfare and hitting lines of communication**
  - **Do the Soviets exhibit a little too much initiative?**
  - **"Wars are not won by the most competent army - they are won by the least incompetent army" - Ralph Peters**

    - Ralph Peters, Red Army

Focused Case Study: The Next War

- **Background**
  - **Published 1978**
  - **Designed by most prolific wargame designer with incredible access to military sources**
  - **10,000 hours of development ~ 72 pages of rules**
  - **Large scale operational level game covering the Baltic to Northern Italy area ~ Included naval and air operations**
  - **Wide variety of doctrinal, operational, political and technical factors were modeled including fatigue, command, control, supply, tempo of operation**
- **Open source approach to simulation**
  - **Simulation is open box amenable to modification**

Focused Case Study: The Next War

- **Military usage**
  - **Learned Reforger units enter too slowly**
- **Outcomes**

  "Next War examined many previously undiscussed tactical and strategic options on the Central Front" - James F. Dunnigan

  "Only simulation which showed NATO could win against a Warsaw Pact assault, which most if not all Pentagon simulations did not support" - Mark Herman

Focused Case Study - Learning From the Germans

- ## Introduction

  - ### Hypothesis - by studying German WW II experience against Russians, NATO could gain insights into how to fight the Russians in 1980's

  - ### Hold workshop funded by Director of Net Assessment (Andrew Marshall)

  - ### Subjects - Generals Balck (commander) + Von Mellenthin (chief of staff)

    - #### Fought Russians at odds of 1:10 and above and usually beat them

  - William DePuy (BDM Corporation), Generals Balck and Von Mellenthin on Tactics: Implications for NATO Military Doctrine, Dec 1980

Focused Case Study - Learning From the Germans

- ## Methods - Q+A and wargame
  - ### In wargame, playing the Americans, given 5 minutes of deliberation, the Generals allow the Russians to deeply penetrate through their lines and then counterattack their rear
    - **"The further the enemy goes, the greater the opportunity for his destruction"**
      - Russians are least effective when hit from unexpected direction - are slow to adopt
  - ### So they open up the battle, shape the battlefield, retain the initiative

- ## Lessons Learned
  - ### On Russians
    - Suffer from excessive command from top + lack of initiative
      - **"They are masses and we are individuals. That is the difference between the Russian soldier and European soldier."**

- William DePuy (BDM Corporation), Generals Balck and Von Mellenthin on Tactics: Implications for NATO Military Doctrine, Dec 1980

Focused Case Study - Learning From the Germans

- **Lessons Learned**
  - **On Germans**
    - Key to superior German performance - individuality of German soldier - his freedom to take initiative + the system which engendered these policies + attitudes
    - Auftragstaktik
      - Use of mission-type orders to amplify advantages which flow from exploiting battlefield initiative - independent action along line of general concept was praised
      - Success rests on knowledge by subordinate of higher commander's concept of operation and objectives so subordinate can choose sensible course of action which contributes to desired outcome
      - In critical situation subordinate with understanding of overall situation can act or react responsibly
      - Following a command or order requires it be thought through on the level order was given and on one level above from which it was given

  - William DePuy (BDM Corporation), Generals Balck and Von Mellenthin on Tactics: Implications for NATO Military Doctrine, Dec 1980

Focused Case Study - Learning From the Germans

- **Lessons Learned**
  - **On Germans**
    - **Fingerspitzengefuehl (fingertip feeling)**
      - **An instinctive 6th sense for terrain + tactics - a masterful touch in art of war**
      - **3 or 4 out of 100 German generals had it**
    - **Also**
      - **Can't predict which peacetime leaders will be excellent wartime leaders**
      - **Leaders grow with experience - the better they know each other, the shorter + less detailed orders need to be**
      - **Smaller units are easier to lead and more flexible - too many tanks in a company lead to too many losses as they tend to clump together**
      - **German units were usually at 33% strength - so you have high ranking high quality leadership associated with smaller units**
    - **William DePuy (BDM Corporation), Generals Balck and Von Mellenthin on Tactics: Implications for NATO Military Doctrine, Dec 1980**

Focused Case Study - Learning From the Germans

- **Conclusion**
  - **The essence of successful operations is that small forces skillfully led can win battles against large forces if the small force is synchronized and the large force is disorganized**
    - **Russians are susceptible to disorganization when confronted with new + unexpected situations**
    - **Western soldiers were superior in fast breaking situations - more apt to take individual initiative - more apt to adjust quickly to opportunities + cope with surprises**
    - **The goal of the German system was to nurture these qualities in their leaders and every soldier**
  - **- William DePuy (BDM Corporation), Generals Balck and Von Mellenthin on Tactics: Implications for NATO Military Doctrine, Dec 1980**

Focused Case Study - Learning From the Germans

- ## Epilogue
  - ### One caveat is that there was much more maneuver room in Russia than in West Germany and they did not have to worry in Russia about abandoning their fellow countrymen to the Russians
  - ### Workshop still being mentioned in NATO publications in 2006
  - ### But on the other hand

    "The only problem was the outcome. The Russians wound up in Berlin"

    - Dennis E. Showalter, A Dubious Heritage: The Military Legacy of the Russo-German War , Air University Review, March-April 1985

  - William DePuy (BDM Corporation), Generals Balck and Von Mellenthin on Tactics: Implications for NATO Military Doctrine, Dec 1980

"It was a difficult war. The Panzer divisions were covering 40-80 kilometer (24-50 mile) fronts and had to hold those lines against overwhelming enemy superiority. We managed because of our superior leadership and high mobility, but it took a toll on our equipment."

- General of Armored Troops Hermann Balck, March 1943

- Hermann Balck, Order in Chaos, (Lexington, KY: The University Press of Kentucky, 2015), 283, 292

The Historian's SitRep

- **Land in Central Europe has never been fought over**
- **Key question - whether nuclear weapons will be used?**
  - **Either by NATO because conventional defense fails**
  - **Or by USSR to preempt NATO use of them**
- **Don't underestimate German Army**
  - **Bundeswehr + Territorialheer are approximately size of Group of Soviet Forces Germany**
  - **They incorporate experience of Eastern Front**
  - **- John Keegan, Soviet Blitzkrieg: Who Wins? Harpers, May 1982**

The Historian's SitRep

- ## Super blitzkrieg
  - ### Each main drive will be along an Army Front (4 divisions)
    - 30 miles wide + 60 miles deep
    - 1300 - 1400 tanks + 2000 infantry fighting vehicles
    - 400 - 600 self-propelled guns
    - Moving 15-20 miles / day (depth of West Germany = 120 - 200 miles)
    - A breakthrough point will be opened up by 2 divisions
      - 3 - 5 miles wide
      - 5:1 local superiority
  - **- John Keegan, Soviet Blitzkrieg: Who Wins? Harpers, May 1982**

The Historian's SitRep

- **Can USSR achieve surprise attack? Unlikely**
- **Are the probable USSR lines of advance known? - Yes - So NATO can deploy on them and slow them down**
  - **Israel did this on Golan Heights in 1973 but they had prepared fighting positions which can't be done in West Germany**
- **USSR rear area (Poland) is vulnerable to sabotage**
- **USSR army's performance in Afghanistan was poor**
- **Final recommendation - fortify Inner German Border with prepared fighting positions**

- John Keegan, Soviet Blitzkrieg: Who Wins? Harpers, May 1982

Group of Soviet Forces Germany

- **Reunification of Germany led to NATO seeing Warsaw Pact invasion plans**
  - **Postulated being on French border on day 15**
  - **…but victory only possible by massive initial use of 840 tactical nuclear weapons; expecting to be counterattacked by 1,500-2,500 NATO tactical nuclear weapons**
- **Why would USSR resort to nuclear weapons?**
  - **Recognition they were losing struggle between quality and quantity**
    - **In 1982 Soviets recognized precision guided munitions (PGMs) will be as effective as nuclear weapons, and they will never be able to produce their own PGMs, so they will have to balance NATO's PGMs with nuclear weapons**
  - **- Wilbur Gray, The World War That Never Was, Strategy& Tactics #200, Jan/Feb 2004**

Focused Case Study: Third Battle of the Atlantic

- **First Battle of the Atlantic - 1914-1918**
  - **Won because US contributions of convoy escorts and merchant shipping to Allied cause and pressuring of neutrals to keep merchant fleets operating**
- **Second Battle of the Atlantic - 1939-1945**
  - **Saved by the Bell #1**
    - **German Type XXI submarine countered ASW techniques used by Allies to defeat wolf packs operating on the surface**
      - **Focused on submerged operations: had great battery capacity, hull form more suited to high underwater speed, snorkel allowed main diesel to breathe from periscope depth**

- Owen R. Cote, The Third Battle: Innovation in the US Navy's Silent Cold War Struggle with Soviet Submarines, Naval War College Newport Papers #16, 2003

Focused Case Study: Third Battle of the Atlantic

- **Third Battle of the Atlantic - 1946-1989**
  - **In WW I + WW II submarines were weapon of choice of naval powers needing to contest control of seas dominated by stronger navies**
  - **Stronger navies tended to underestimate the submarine threat to sea lines of communication during peacetime preparation**
    - **Therefore submarines tended to win first battles in WW I + WW II**
    - **Submarines eventually overcome by massive and asymmetric application of resources to submarine threat**
    - **Imperial Japanese Navy in WW II failed to address US submarine challenge, lost control of its sea lines of communication to catastrophic consequences**

- Owen R. Cote, The Third Battle: Innovation in the US Navy's Silent Cold War Struggle with Soviet Submarines, Naval War College Newport Papers #16, 2003

Focused Case Study: Third Battle of the Atlantic

- **Third Battle of the Atlantic - 1946-1989**
  - **US Navy decided not to repeat mistakes pre WW I + WW II**
    - **Invested massively in passive acoustic detection technology which tipped the traditional superiority of submarine over ASW force**
    - **Superiority lasted until middle 1980's when Soviets finally developed quiet nuclear submarines**
      - **But the Cold War then ended and the US Navy was Saved by the Bell #2**

- Owen R. Cote, The Third Battle: Innovation in the US Navy's Silent Cold War Struggle with Soviet Submarines, Naval War College Newport Papers #16, 2003

Focused Case Study: Measure / Countermeasure in ASW

FIGURE 2
LONG-TERM VIEW OF USN ASW TRENDS
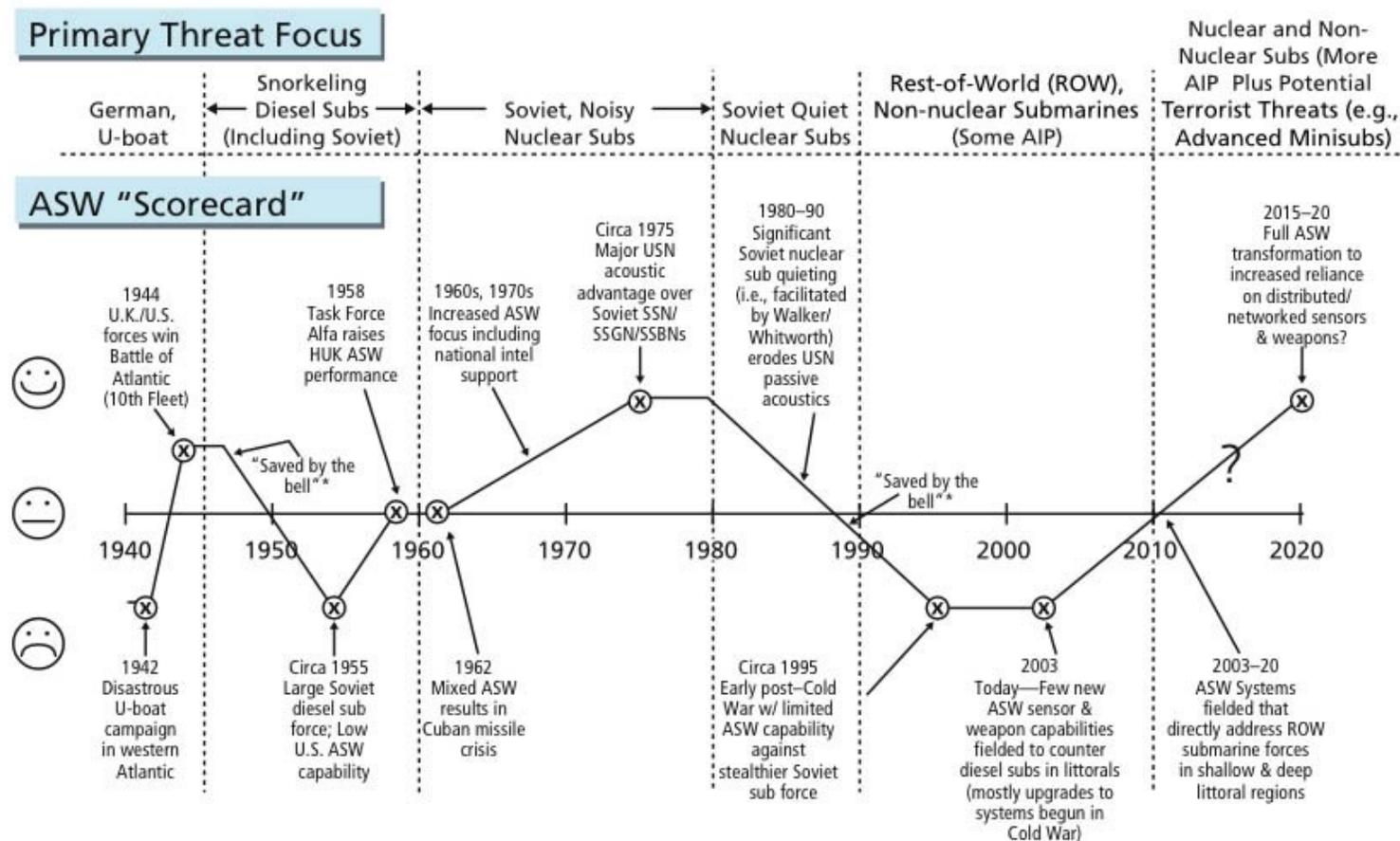
- John Benedict, The Unraveling and Revitalization of US Navy Antisubmarine Warfare, Naval War College Review, Spring 2005

Focused Case Study: Global War Game

- **Background**
  - 1979-1988 ~ Manual games ~ Joint ~ Game-study-game
  - Gamed Central Front / whole world around 1985
  - First wargames at Naval War College since Orange Plans of 1930's
- **Lessons learned**
  - Blue should adopt offensive naval mindset
  - Protracted, conventional war Blue's best chance to win
    - Blue had much to gain through mobilization
    - Red had little to gain through mobilization
    - Over longer war Red had food problems, ethnic problems, Warsaw Pact dissolution problems

- Bud Hay+Bob Gile, Global War Game The First Five Years Naval War College Newport Papers 4, 1993
- Robert H. Gile, Global War Game Second Series 1984-1988 Naval War College Newport Papers 20, 2004

Focused Case Study: Global War Game

- **Discredited**
  - **War b/t Blue + Red would automatically become nuclear**
  - **Blue defense of Europe impossible without nukes**
  - **Barrier across GIUK gap was needed to preserve Blue sea lines of communication in Atlantic**
  - **Blue carrier battle groups could not survive in Eastern Med or Norwegian Sea**
  - **Amphibious warfare had no role in superpower conflict**
- **Legacy**
  - **Significantly contributed to US Navy's Maritime Strategy**
    - **Irony was that although this game gave great insights to US Navy, this was what civilian gamers had been doing for 10 years**

- Bud Hay+Bob Gile, Global War Game The First Five Years Naval War College Newport Papers 4, 1993
- Robert H. Gile, Global War Game Second Series 1984-1988 Naval War College Newport Papers 20, 2004

Case Study Summary - The War That Never Was

Written in 1994 ~ Novelization of actual Maritime Strategy war plans wargamed on commercial paper + computer wargames ~ Tells mainly naval aspect of war ~ Focuses on Northern Europe / Mediterranean / Gulf / Pacific ~ Attack is in July 1989 ~ War lasts 6 weeks

- **Goal**
  - **Soviet - capture West Germany**
- **Center of Gravity (Strategy)**
  - **Soviet - bolt from blue in Germany, naval forces subordinated to ground forces, naval forces not allowed to optimally deploy so as to not scare NATO**
  - **NATO - defend on land, gain control of sea, reinforce, counterattack**
- **Equipment ~ Training ~ Leadership ~ Morale**
  - **Soviet naval operations subordinate to land commanders**
  - Michael A. Palmer, The War That Never Was

Case Study Summary -
The War That Never Was

- **Tactics**
  - **Threats to sea lanes best countered at the source by early offensives against air + naval bases Soviets would sortie from in North Atlantic (Murmansk) and North Pacific (Petropavlovsk)**
- **Intangibles ~ Mistakes**
  - **No discussion of use of SOSUS by US + minimal discussion of use of RORSAT by USSR or White Cloud ELINT satellites by US for targeting - due to classified nature?**
- **Outcome**
  - **Devastation of Soviet Navy**
    - **Only 1 US carrier sunk ~ minimal loss of Allied ships**
  - **NATO keeps sea lanes open + protects its northern flank**
    - **NATO eliminates Northern Fleet in Atlantic, Black Sea Fleet in Mediterranean, Pacific Fleet**
  - **- Michael A. Palmer, The War That Never Was**

Case Study Summary -
The War That Never Was

- **Lessons Learned**
  - **Communist revolution could almost keep up with capitalist industrial revolution**
    - **But communist revolution could not keep up with capitalist technological revolution…it changed too quickly**
  - **Failure of Soviet military doctrine - US attributed to Soviet military a degree of efficiency unparalleled elsewhere in their society**
    - **Dictatorships are not more efficient when waging war, they are more wasteful**
  - **Seapower key to NATO victory**
    - **Soviet naval policy was failure, should have big blue water navy like US**

  - Michael A. Palmer, The War That Never Was

Case Study Summary - Not Over By Christmas

- **Goal**
  - **Written by a West German Army officer and a Sandhurst professor**
  - **Attempt to operationalize for NATO the lessons learned by the German Army on the Eastern Front in World War II**

Case Study Summary - Not Over By Christmas

In summary, then, our forward defence must be a 'flexible' forward defence free from over-rigid formulae which might force military planning into unworkable structures, or fragment it into no more than a series of purely national plans. NATO's armies in Germany will develop the full defensive power of which they are capable only if they are united by a single operational doctrine which conforms with solid military realities. This should place the highest priority on the main line of defence and its immediate local reserves, which we hope will absorb and fragment most of the enemy's spearheads. Our operational counter-strokes may then be committed to redress the balance on a wider plane, in order to convince the enemy, not that he is defeated, but that he has nothing to gain by continuing the battle.

Secondary priorities include the initial delaying action which wins time for the main defences to be assembled; the 'interdiction' effort conducted by artillery and rocket weapons as much as by air power; and the rear area security task, which should take the lowest priority of all. Much mental confusion can be created if the relative importance of each of these phases is lost from view, since all of them can claim an inordinate share of our resources if given their head. We must therefore assign priorities to every phase of the battle, as a guide to our spending and the organization of our units.

We find that there is an overall need for more soldiers, but that none of them need be capable of performing every role on the battlefield. Each formation can therefore be optimized for either a relatively static 'defensive' role, or a mobile 'counter-attack' role. The high costs of total versatility may therefore, to some extent, be contained.

- Dinter, Elmar and Griffith, Paddy - Not Over By Christmas: NATO's Central Front in World War III

Initial Answer To How Wargames Can Give Insights Into the Long War

- **First wargame that accurately modeled and showed how to win the Cold War (in retrospect) was Twilight Struggle in 2005, 16 years after end of Cold War**

- **First wargames that accurately model and show ways to win Long War are**
  - **Terror War in 2009, 8 years into the Long War**
  - **Labyrinth: The War on Terror, 2001-? in 2010**
  - **A Distant Plain: Insurgency in Afghanistan in 2013**

Focused Case Study: Containing China in the 21st Century

- **Background**
  - **China needs to maintain sea lines of communication for imports and exports ~ building up forces to do so**
- **Goal**
  - **US must manage a peacefully rising China**
- **US allies**
  - **Japan, Australia, Singapore, Philippines, South Korea, Vietnam + India?**
- **US bases**
  - **Hawaii/Guam/Singapore/Cooperative Security Locations**
- **Chinese tactics**
  - **Asymmetric warfare - submarines, antiship ICBMs, cyber warfare**
- **US tactics**
  - **Blue water navy, littoral navy, stealth navy**

- Robert D. Kaplan, How We Would Fight China, Atlantic Monthly, June 2005

Focused Case Study - Unrestricted Warfare - Taiwan Straits 2020

- **Threat - US carrier battle groups**
- **Symmetric response - build Chinese carrier battle groups**
- **Asymmetric response against US key acupuncture points**
  - **Electromagnetic pulse weapons**
  - **Cyber attack**
  - **Interdiction of US foreign oil supply**
  - **Attack on the US dollar**
  - **Diplomatic isolation**
  - **Powerful triumvirate (China, Russia, Iran)**
  - **US's geopolitical disadvantage (long lines of communication)**
  - **Asymmetric + asynchronous warfare**
  - **Attack on US C4I**
  - **Attack on US carriers (ballistic missiles, cruise missiles, rocket torpedoes, bottom dwelling rocket propelled mines, conversion of manned aircraft into unmanned aerial vehicle kamikazes)**
    - **Victor N Corpus, Striking the US Where it Hurts, Asia Times, Oct 19, 2006**
    - **Victor N Corpus, The Assassin's Mace, Asia Times, Oct 20, 2006**
    - **Victor N Corpus, If it Comes to a Shooting War, Asia Times, Apr 20, 2006**

Sizing Up The Chinese Strategic Challenge

- **Clausewitz describes three ways a lessor competitor can prevail over a stronger one**

- **A weaker competitor can render its opponent unable to carry on the struggle**
  - **Local superiority via home-field advantage / geography + interior lines - China can hope to mass superior might at the decisive place at the decisive time**

- **One competitor can win by convincing the other they can't**
  - **Display potent capabilities, demonstrate resolve to use them, persuade opponent they will use them under certain circumstances**

- **One competitor can win by convincing the other that even if he can win, the cost will be too high**
  - **If you lose most of the U.S. Pacific Fleet, can you still be a superpower?**

    - James Holmes, How the Weak Win Wars: China Edition, The Diplomat, Feb. 14, 2014

A Strategy For Dealing With China - Out Chinese the Chinese

- "The number one priority of the Chinese leadership is to ensure domestic political stability and Communist Party supremacy through the population's gainful employment and rising standards of living…

- A new U.S. strategy should be that in the event of military conflict with the Chinese, the United States will physically interdict all military and civilian traffic, primarily with heavy inshore offensive mining using submarine and stand-off or unmanned systems. This should be paired with dramatically expanded financial and legal tools to halt air and sea trade. The intent would be to cause enough widespread economic upheaval, quickly and with low collateral damage, to promote political instability that could credibly and directly threaten the Chinese leadership's rule…

- This strategy may be met with derision by many because it doesn't satisfy what seems to be an almost instinctive desire to plan for and engage in direct force-on-force combat showcasing our highest-visibility assets - carriers and advanced technology aircraft - and giving short shrift to more indirect (and less expensive) methods of warfare with mines, submarines, and the slow, grinding nature of blockade…

- An additional benefit of a subsurface strategy is that it is much less vulnerable to China's cyber- and electronic -warfare capabilities than an air- or surface-based offensive strategy…"

- Victor Vescovo, Deterring the Dragon…From (Under) the Sea, US Naval Institute Proceedings, Feb. 2014

A Strategy For Dealing With China - Out Chinese the Chinese

- "Strategic steps
  - Clearly communicate the strategy to the adversary
  - Enhance the subsurface warfare capability of the US Navy, particularly in the area of offensive mine warfare
  - Regularly conduct high-profile offensive subsurface training exercises
  - Quietly practice offensive counterinsurgency operations around China's periphery

- The wartime effect of this strategy on China could be immediate and threatening to its leadership. Without maritime trade, China's export-driven employment engine would likely go into free fall. While the West would temporarily suffer the lack of China's manufactured products, most of them are consumer-oriented and more easily done without. Alternatively, China could probably not sustain the political risk of unemployment, declining living standards, and fuel shortages, particularly in the wealthier and freer-speaking coastal provinces that would be hit hardest…

- Many military leaders often quote Chinese military strategist Sun Tzu but seem to frequently overlook his most important lesson: The acme of skill is to win without fighting…

- A clear-eyed assessment of the relative strengths and weaknesses of the United States and China, especially in the political and economic realms, point to a conventional deterrence strategy that should focus on making war very dangerous for China's leadership. Its political Achilles' heel is the fear of popular rebellion, which stirs violently when the economy fails. Its military Achilles' heel is the low level of anti-submarine and mine warfare capability. Its economic weakness? Dependence on foreign trade and U.S. financial and legal hegemony."

- Victor Vescovo, Deterring the Dragon…From (Under) the Sea, US Naval Institute Proceedings, Feb. 2014

The Master Speaks…

"...in the China seas we probably can keep the peace if we demonstrate the ability to deny movement of their trade at sea, and that means taking the offense. We can take the offense with a sea denial strategy. Offense is less expensive and sea denial is easier to do than sea control, because sea control requires you to be ever ready for an attack at a time of the enemy's choosing. We just have to intimidate the Chinese by a sea denial strategy so they can't conduct their trade, and they are a lot more vulnerable to the loss of trade than the Soviet Union ever was. So I'm fascinated by the idea of keeping the peace by showing the Chinese that we can execute a sea denial strategy in their home seas."

- Captain Wayne Hughes, USN (ret.)

Network Centric Warfare - What is Old is New Again - Airborne Target Cueing Over the Years

- **World War II Battle of the Atlantic**
    - **Measure: Germans use FW200 Condor aircraft to acquire convoy targets using Mark I eyeball for U-Boats**
    - **Countermeasure: Equip convoys with fighter planes to intercept Condors, either single-shot Catapult Armed Merchantmen or escort carriers**
- **World War III Battle of the Atlantic**
    - **Measure: Soviets use Tu-95RT Bear Ds to acquire convoy targets using radar with 215 mile range for Soviet ships + submarines and provide mid course target correction for their cruise missiles**
    - **Countermeasure: Royal Navy uses Sea Harriers on escort carriers (Hack the Shad) while US Navy uses E-2 AWACS + F-14s on supercarriers**
- **US vs. China**
    - **Measure: US uses P-8A Poseidon to target enemy ships using Advanced Airborne Sensor AESA radar that can detect / classify / identify targets at long range. US glide bomb + cruise missile weapons won't need mid course correction due to advances in warhead sensors**
    - **Countermeasure: Chinese aircraft carriers + long range land based J-20 stealth fighters to target ISR aircraft**
    - **- Bill Sweetman, Network Centric Warfare The First 70 Years, Aviation Week and Space Technology**

Know Your Enemy

"Until recently, the Chinese were getting richer so fast that most of them had better things to worry about than how they were governed. But today China faces a set of threats that an official journal describes as "interlocked like dog's teeth."

The poor chafe at inequality, corruption, environmental ruin and land-grabs by officials.

The middle class fret about contaminated food and many protect their savings by sending money abroad and signing up for foreign passports.

The rich and powerful fight over the economy's vast wealth.

Scholars at a recent government conference summed it up well: China is "unstable at the grass roots, dejected at the middle strata and out of control at the top.""

- The Man Who Must Change China, The Economist, Oct. 27, 2012

Know Your Enemy

"It was the Chinese scholar-historian Wei Yuan, writing in the mid-19th century, who first formally identified his nation's apparently inescapable cycles of "chaos and humiliation" (quru), followed by "rejuvenation" (fuxiang), followed by "wealth and power" (fuqiang), and then back to quru to start again. More recently, Queens College futurist and sometimes-CIA analyst Dr. Bruce Bueno de Mosquita wrote concerning China that he sees no factors in the present-day environment working to end or deflect that same cycle. It was the shared conclusions of those two men, working over a century-and-a-half apart, which inspired me to design this wargame modeling the military parameters and possibilities inherent in the next phase of Chinese quru - civil war. Likely starting points for such a conflict would either be the collapse of the Chinese real estate bubble - which is already broadly predicted to be inescapable and will constitute the largest financial collapse in world history - or the growing potable water crisis. (A third of the water consumed by the Chinese is undrinkable by US standards.) Beyond those factors, or in combination with them, there's also the gender imbalance, the fossil fuel air pollution crisis, the increasingly endemic corruption, the aging population structure, the expanding rural-urban economic gap, as well as the general collapse of ideology and the resultant moral lapse throughout the populace."

- Ty Bomba, Introduction to the rules of "Red Dragon Falling"

Patterns in History

- **Scenario: your closest trading partner is building a navy specifically targeted at your navy and thus at your vital overseas trade and therefore is your most threatening enemy**
  - **This was Great Britain 100 years ago with Germany**
  - **This is the US today with China**
- **No one in Great Britain believed there could be a war because major economies were so intertwined a war would be disastrous…but Germany did not feel this way**
  - **How well do we understand how foreign governments think?**
- **German leaders (especially the military) felt threatened by rise of 'revolutionary' Social Democrats in the Reichstag and were looking for a war to blunt their rise**
  - **Do we understand who actually rules countries that may be hostile to us?**
  - **Other's decision to fight is far more often about internal politics than about what the other side may do**
- **The fact that war between trading nations would be disastrous to both does not mean it cannot happen**

- Norman Friedman, Why 1914 Still Matters, US Naval Institute Proceedings, August 2014

How China Views America

"Yet the book that has done the most to educate me about how China views America and the world today is, as I said, not a political text, but a work of science fiction. "The Dark Forest" was Liu Cixin's 2008 sequel to the hugely successful "Three-Body Problem." It would be hard to overstate Liu's influence in contemporary China: He is revered by the Shenzhen and Hangzhou tech companies, and was officially endorsed as one of the faces of 21st-century Chinese creativity by none other than ... Wang Huning.

"The Dark Forest," which continues the story of the invasion of Earth by the ruthless and technologically superior Trisolarans, introduces Liu's three axioms of "cosmic sociology."

First, "Survival is the primary need of civilization." Second, "Civilization continuously grows and expands, but the total matter in the universe remains constant." Third, "chains of suspicion" and the risk of a "technological explosion" in another civilization mean that in space there can only be the law of the jungle. In the words of the book's hero, Luo Ji:

"The universe is a dark forest. Every civilization is an armed hunter stalking through the trees like a ghost ... trying to tread without sound ... The hunter has to be careful, because everywhere in the forest are stealthy hunters like him. If he finds other life - another hunter, an angel or a demon, a delicate infant or a tottering old man, a fairy or a demigod - there's only one thing he can do: open fire and eliminate them. In this forest, hell is other people ... any life that exposes its own existence will be swiftly wiped out."

Kissinger is often thought of (in my view, wrongly) as the supreme American exponent of Realpolitik. But this is something much harsher than realism. This is intergalactic Darwinism."

- Niall Ferguson, America and China Are Entering the Dark Forest, Bloomberg News, July 5, 2020

Air Sea Battle Critiqued

- **Possibility of major non-nuclear conflict between US + China highly unlikely**
  - China-Taiwan relations at all-time high + improving, China + US have no territorial or religious disputes, China highly vulnerable to interruption of sea-borne commerce, War between China + US could be financial catastrophe for both

- **Reasons to initiate Air Sea Battle**
  - Cause regime change in China, deter Chinese attack on Japan over territorial disputes, stop China from occupying South China Sea islands claimed by multiple countries

- **How can China's anti-access / area-denial capabilities (A2/AD) - especially its DF-21 anti-ship ballistic missiles - be destroyed?**
  - It will take time to assemble several aircraft carriers in the Western Pacific and place their aircraft within range of their targets…and then they must face China's integrated air defense system
  - Land-based long range US bombers are small in number and countries that allow them and their tankers to stage from them will become Chinese targets
  - Surface warships + submarines firing land attack cruise missiles may be best way to attack A2/AD targets in China (military airfields, radars, command centers, cruise missiles, anti-ship ballistic missiles)

- **How will China respond to such attacks on their territory? How will China respond when its intercontinental ballistic missiles, which are co-located / based with its anti-ship ballistic missiles, are accidentally destroyed?**

- **Submarines are the most effective means to address A2/AD targets, but there currently is a shortage of torpedoes and submarine-launched mobile mines for them, and there are no submarine-launched antiship missiles for them**

  - Norman Polmar, The SEA-Air Battle, US Naval Institute Proceedings, Dec 2013

Is The Arctic Ocean the Next Great Game?

- **Arctic Ocean will be ice free for a month a year within a few decades due to global warming**
  - **Economic opportunities of this include resource extraction + shortened sea voyages of up to 40%**
  - **Geopolitical opportunities will be similar to opening of Suez Canal + Panama Canal**
- **Arctic Council composed of countries fronting polar waters will have rights to resources**
  - **Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden, US**

  - James Holmes, Open Seas, Foreign Policy Oct. 29, 2012

Staff Ride - Baltics in 21ˢᵗ Century

- **Prelude - Politics - Strategy**
  - 1945 - Russia / Soviet Union, having been invaded multiple times in past from West (Teutonic Knights, Napoleon, Nazi Germany), demands buffer states in WWII settlement, receives it in form of Warsaw Pact
  - 1991 - Warsaw Pact + Soviet Union dissolve, buffers lost
  - 1997 - Russia + NATO sign Founding Act, political agreement that states "... the Alliance will carry out its collective defense and other missions [through] reinforcement rather than by additional permanent stationing of substantial combat forces."
  - 1999 + 2004 - Poland + Baltic states join NATO
  - 2005 - "First and foremost it is worth acknowledging that the demise of the Soviet Union was the greatest geopolitical catastrophe of the century. As for the Russian people, it became a genuine tragedy. Tens of millions of our fellow citizens and countrymen found themselves beyond the fringes of Russian territory." - Vladimir Putin
  - 2007 - Russian cyber war with Estonia
  - 2014 - Russian annexation of Crimea + invasion of Ukraine with little green men + hybrid warfare
  - 2015 - Who's next? Tallinn, Estonia home of 30% ethnic Russian population, Riga, Latvia home to 40% ethnic Russian population with Russians unevenly integrated into their political + social mainstreams
  - 2015 - US starts rotating company-sized units to exercise in Baltic states + Poland
  - 2016 - US will station 1 x armored brigade combat team equipment set in Baltic states + Poland + rotate troops from two brigade combat teams to use them continously to keep within treaty
  - Russia is primary energy source for much of Europe
- **Approach of armies to battlefield - Why was battle fought here**
  - Russia wants to control it's western "Near Abroad" / sphere of influence, via at least influence if not by occupation, as a buffer zone
  - When NATO troops exercise in Georgia, Ukraine, Baltic states they are operating nearly as close to the Russian heartland as the German Army penetrated in 1941-1942
- **Leaders**
  - NATO Presidents + Prime Ministers not focused on this ~ Vladimir Putin focused on this
- **Logistics**
  - Very long line of supply to traditional NATO supply dumps in Germany ~ Short line of supply for Russia
- **Weapons - Direct and indirect**
  - NATO light infantry + mechanized units without combined arms support + airpower vs. Russian mechanized units with combined arms support (God of War) + airpower
- **Order of Battle**
  - NATO has 3 light infantry brigades + perhaps some US / UK light infantry battalions ~ Russia has 22 maneuver battalions + extensive artillery + airpower
- **Organization - Units and formations**
  - Text
- **Command, control, communications, intelligence**
  - NATO - divided / fragmented, untested C3, poor intelligence, unexercised ~ Russia - unified C3, good intelligence, fully exercised
- **Tactics**
  - NATO - delaying action until relieved (by whom?) ~ Russia - start with hybrid warfare (little green men, manufactured protests, cyberwarfare), then blitzkrieg coup de main
- **Weather**
  - Text
- **Terrain**
  - Borders of Baltic states are same length as border that separated West Germany from Warsaw Pact + is defended by 3 light infantry brigades from Estonia, Latvia, Lithuania
  - Terrain is open, forested, lakes, wetlands
- **Operational**
  - Will there be enough warning time for NATO to mobilize?
- **Chronologic narrative of battle taking note of friction and fog**
  - RAND Wargame - what happens when Article V of the North Atlantic Treaty is triggered (collective defense provision)
  - Russian forces reach Estonian capital of Tallin + Latvian capital of Riga in 60 hours
  - NATO cannot successfully defend territory of its most exposed members
  - Recommend basing in Baltic states 7 NATO brigades, including 3 armored brigades, supported by land-based fires + airpower to change strategic picture as seen from Moscow + prevent coup de main
- **Decisions - What good and bad ones were made**
  - NATO holding cities
- **OODA loop - Who is inside the other's**
  - Russia inside NATO
- **Who thought they won, who really won**
  - Russia / Russia
- **What effect did it all have - Aftermath of battle**
  - Could lead to collapse of NATO + Western democratic ideal
  - NATO should not have acted as a social club + inducted new members who were irrelevant to Europe's security + possessed minimal military capabilities
  - US will deploy equipment for 1 x brigade combat team throughout Eastern Europe in company-sized sets to serve as a trip-wire but not a significant fighting force

- RAND Corporation, Reinforcing Deterrence on NATO's Eastern Flank, Jan. 2016

Computing Case Study Summary - SOSUS

- ## Goal
  - ### Make oceans transparent to counter Soviet submarine force
- ## Center of Gravity (Strategy)
  - ### Submarine detection + classification
- ## Technology / Equipment
  - ### Analog to transistors to digital
  - ### Low frequency analysis + recording system (LOFAR) detected Soviet subs low frequency sounds propagating in the deep sound channel over thousands of miles with little attenuation
  - ### Hydrophone array -> cables -> Naval Facilities (NAVFAC) -> LOFAR actuator which recorded acoustic signal data graphically on paper = LOFARgram
  - ### Data went from NAVFAC -> Naval Oceanographic Processing Facilities (NOPFs) who correlated information + provided cueing information

- Gary E. Weir, The American Sound Surveillance System: Using the Ocean to Hunt Soviet Submarines, 1950-1961, International Journal of Naval History, August 2006
- Edward C. Whitman, SOSUS The Secret Weapon of Undersea Surveillance, Undersea Warfare, Winter 2005

Computing Case Study Summary - SOSUS

- **Training ~ Leadership ~ Morale**
  - **Ocean Technologists (OTs) were highly trained, highly knowledgeable, competitive, "different" = geeks**
  - **Western Electric for technical end**
- **Tactics**
  - **Provided cueing information for tactical deep ocean ASW platforms on sea / under sea / in the air to allow them to target Soviet subs**
- **Intangibles**
  - **One of the first operational billets in Navy to allow women to serve**
- **Mistakes**
  - **Betrayed by John Walker spy ring to Soviets, led them to quiet their subs, thus making SOSUS much less useful**
- **Outcome**
  - **First generation deployed 1961, operational by Cuban Missile Crisis 1962**
  - **NAVFACS were frontline of Cold War**

- Gary E. Weir, The American Sound Surveillance System: Using the Ocean to Hunt Soviet Submarines, 1950-1961, International Journal of Naval History, August 2006
- Edward C. Whitman, SOSUS The Secret Weapon of Undersea Surveillance, Undersea Warfare, Winter 2005

Personal Case Study - Jurgen G.

- **Role - Kriegsmarine Torpedo Mechaniker Maat / Unteroffizier on U-Boat Type VIIc (Torpedo Mechanic Leading Seamen / NCO)**
- **Story**
  - **Repaired U-Boats in World War II but never saw combat**
  - **Modern submarine book on coffee table - once a submariner, always a submariner…**

Personal Case Study - Harold G., DDS

- **Role - Dentist in US Navy in WWII**
- **Story**
  - **Tales of the South Pacific - Life aboard a floating dry dock**

Personal Case Study - Nick Hertza

- **Role**
  - **Pharmacist's Mate, US Navy, World War II**
- **Story**
  - **Had access to chemicals - developed all the film**
  - **Had time of his life**

Personal Case Study - CAPT Charles N.G. (Monk) Hendrix

- **Role - US Naval Academy graduate 1939**
- **Story**
  - **WWII submariner in Pacific - 12 war patrols**
  - **Post WWII skipper of USS Tiru**
  - **Attends Scripps Institute and becomes oceanographer in US Navy**
  - **Present at H-bomb tests**
  - **Retires from Navy, becomes professor of oceanography at US Naval Academy**
  - **Mentors Trident Scholars**
  - **To whom much is given, much is expected**
    - **Service lives on in daughter**

Class Simulation

- **Naval warfare aspects**

Poem

Fog gray sea or mist green, sun-silver water or storm salt and spray, daylight or midnight, two bells or eight bells, tropic sea or arctic, antarctic or equatorial, the navy knows them all. Colossal the navy - and paradoxical - hairy-chested and many-armed yet glinting its gun-barrels with astronomical precision and split-second timing - turbine web-feet on the open sea, submarine fins undersea, plane wings overhead. Hunting the enemy, slugging, pounding, blasting. And always chores we got with tenders, oilers, tugs, smokescreens, with harbor submarine nets, minelayers, minesweepers, torpedo and depth bomb - heavy chores with endless patrols and long breathing convoys, caravans of the sea. "In the navy you get every snootful of the sea there is."

- Carl Sandburg, from the exhibition Road to Victory, 1942

Poem

They that go down to the sea in ships, that do business in great waters;

These see the works of the Lord, and his wonders in the deep.

- King James Bible, Psalm 107

Questions for Further Discussion

- **What is the experience of war like for those on the sea?**

- **Can a war be won with naval forces alone?**

- **Can a war be won without naval forces?**

Reading Assignments

- **How to Make War Chapters 9,10,11**
- **TED Talks for this Topic**
  - **http://www.warstudiesprimer.org/ToLearnMore.html**

Recommended Reading to Learn More

- **Non-fiction**
  - **John Keegan - The Price of Admiralty**
- **Fiction**
  - **Nicholas Monsarrat - The Cruel Sea**
- **Movies**
  - **Das Boot**
  - **Hunt for Red October**
  - **Master and Commander**
- **Simulations**

Conclusion

"The sea is the key"

- Michael P. D'Alessandro, M.D.

Conclusion

"I wish no connection with any ship that does not sail fast, for I intend to go in harm's way."

- John Paul Jones

Conclusion

"A good navy is not a provocation to war. It is the surest guarantee of peace"

- Theodore Roosevelt

Topic 10

Up in the Air, Junior Birdman

Aerial Warfare

Song

Off we go into the wild blue yonder,

Climbing high into the sun;

Here they come zooming to meet our thunder,

At 'em boys, Give 'er the gun! (Give 'er the gun now!)

Down we dive, spouting our flame from under,

Off with one helluva roar!

We live in fame or go down in flame. Hey!

Nothing'll stop the US Air Force!

- Robert Crawford, The Air Force Song

Thematic Quote

"Never in the field of human endeavor was so much owed by so many to so few"

- Winston Churchill

Thematic Quote

"There are only two types of aircraft - fighters and targets"

- Doyle "Wahoo" Nicholson, USMC

The Painting

Dogfight

- John Armstrong Turnbull

(Canadian War Museum)

The Question

Can a war be won without air superiority?

In the Beginning…

"And the day may not be far off when aerial operations, with their devastation of enemy lands...may become the principal operations of war; to which the older forms of naval and military operations may become secondary and subordinate."

 - Smuts Report, August 1917, which provided operational justification for an independent Royal Air Force in 1918 + intellectual + strategic basics for future of airpower

What Was Training Like?

"There were sixteen of us altogether learning to fly in this Initial Training School in Nairobi, and I liked every one of my companions. They were all young men like me who had come out from England to work for some large commercial concern, usually either Barclays Bank or Imperial Tobacco, and who had now volunteered for flying duties. We were to spend the next six months training together in very close association, and then we would all be separated and posted off to various operational squadrons. It is a fact, and I verified it carefully later, that out of those sixteen, no less than thirteen were killed in the air within the next two years.

In retrospect, one gasps at the waste of life."

- Roald Dahl, Going Solo

What Was Training Like?

Where did they want me to go? I asked.

To Greece of course, they said. They told me that 80 Squadron were no longer flying Gladiators. They were now equipped with Mark I Hurricanes. I must learn very quickly to fly a Hurricane and then I must take it to Greece and rejoin the squadron.

When I got this news I was in Ismailia, a large RAF aerodrome on the Suez Canal. A Flight-Lieutenant pointed to a Hurricane standing on the tarmac and said, "You can have a couple of days to learn how to fly it, then you take it to Greece."

"Fly that to Greece?" I said.

"Of course."

"Where do I stop to refuel?"

"You don't," he said. "You go non-stop."

"How long will it take?"

"About four and a half hours," he said.

Even I knew that a Hurricane had fuel for only one and a half hours' flying, and I pointed this out to the Flight-Lieutenant. "Don't worry about that," he said. "We're fitting extra fuel tanks under the wings."

"Do they work?"

"Sometimes they work," he said, smirking. "You press a little button and if you're lucky a pump pumps petrol from the wing-tanks into the main tank."

"What happens if the pump doesn't work?"

"You bail out into the Med and swim," he said.

"No," I said. "Be serious. Who picks me up?"

"Nobody," he said. "It's a chance you have to take."

This, I told myself, is a waste of manpower and machinery. I had no experience at all in flying against the enemy. I had never been in an operational squadron. And now they wanted me to jump into a plane I had never flown before and fly it to Greece to fight against a highly efficient air force that outnumbered us by a hundred to one."

I was petrified...

- Roald Dahl, Going Solo

What Makes a Great Fighter Pilot?

- **According to Oswald Boelcke**
  - **Aggressive…with the killer instinct**
  - **Situational awareness**
  - **Good marksmanship**
    - **Interview with Philip Sabin in, Who Killed the Red Baron?**

What is Air Combat Like?

"There are times in life when the faculties seem to be keyed up to superhuman tension. You are not necessarily doing anything; but you are in a state of awareness, of tremendous alertness, ready to act instantaneously should the need arise. Outwardly, that day, I was calm, busy keeping the trenches in the camera sight, manipulating the handle, pulling the string; but inside my heart was pounding and my nerves straining, waiting for something, I did not know what, to happen. It was my first job. I was under fire for the first time. Would Archie get the range? Would the dreaded Fokker appear? Would the engine give out? it was the fear of the unforeseen, the inescapable, the imminent hand of death which might, from moment to moment, be ruthlessly laid upon me. I realized, not then, but later, why pilots cracked up, why they lost their nerve and had to go home. Nobody could stand the strain indefinitely, ultimately it reduced you to a dithering state, near to imbecility. For always you had to fight it down, you had to go out and do the job, you could never admit it, never say frankly: "I am afraid. I can't face it any more." For cowardice, because, I suppose, it is the most common human emotion, is the most despised. And you did gain victories over yourself. You won and won and won again, and always there was another to be won on the morrow. They sent you home to rest, you put it in the background of your mind; but it was not like a bodily fatigue from which you could completely recover, it was a sort of damage to the essential tissue of your being. You might have a greater will-power, greater stamina to fight down your failing; but a thoroughbred that has been lashed will rear at the sight of the whip, and never, once you had been through it, could you be quite the same again."

- Cecil Lewis MC, World War I RAF pilot, in Sagittarius Rising

Single Warrior Combat

"It's like jousting."

"How was it that despite their own fearsome losses in 1965, 1966 and 1967, despite hobbling restrictions and dubious strategies sent by the Pentagon, despite the spectacle of the antiwar movement building back home - how was it that, in the face of all this, American flyers in Vietnam persisted in virtuoso performances and amazing displays of espirit throughout the war? Somehow it got down to something that is encoded in the phrase "a great hop.""

"The atmosphere of the great hop had something about it that was warlike only in the sense that it was, literally, a part of combat. A word that comes closer is sporting."
- Tom Wolfe, The Truest Sport: Jousting with Sam and Charlie, Esquire, December 1967

Single Warrior Combat

"A man may go into military flight training believing that he is entering some sort of open-air technical school where it is possible to acquire a certain set of skills. Instead, he finds himself in a fraternity that quickly encloses his whole life, as if he has taken vows and promised to sacrifice all to its requirements. An ambitious young man going into military flying finds himself faced with the undreamed-of task of climbing a pyramid that is miles high and extremely steep, and the idea is to prove at every inch of the way up (and new proofs are required constantly) that he is one of the elected and anointed ones who have a certain rare quality (which is never named but universally admired) and that he can move higher and higher and even - ultimately, God willing, one day - that he might be able to join the special few who reign at the apex."

- Tom Wolfe, The Truest Sport: Jousting with Sam and Charlie, Esquire, December 1967

Single Warrior Combat

"This certain unnamed rare quality, however, is not simply bravery. It is rather, the sort of bravery that the "contact sports" express in a symbolic form: the ability to perform feats of prowess while willingly subjecting oneself to physical danger. The physical danger in even the contact sports, of course, is quite low-level; it is danger to limb, not life. In the competition to succeed in military flying, the ante is raised to the latter - although this is a subject that is absolutely taboo among fliers themselves."

- Tom Wolfe, The Truest Sport: Jousting with Sam and Charlie, Esquire, December 1967

Single Warrior Combat

"The idea is to be able to put your hide on the line and then to have the moxie, the reflexes, the experience, the coolness to pull it back in the last yawning moment - and then to be able to go out again the next day and the next day and every next day and do it all over again - and, in its best expression, to be able to do it in some higher calling, in some action that means something to thousands, to a nation. At the apex in military flying has always been the business of flying fighter planes in combat, and Navy fighter pilots could argue that they raised the ante highest of all. In addition to the rigors of high-performance flight, they offered a little death-defying drama routinely, at least twice a day, during Carrier Ops: On top of everything else, including combat itself, there was the little business of launch and recovery…out on the heaving greasy skillet."

- Tom Wolfe, The Truest Sport: Jousting with Sam and Charlie, Esquire, December 1967

Single Warrior Combat

"All of the foregoing was out-of-bounds in conversation. Nevertheless, there it was. The closest aviators came to talking about it was when they used the term "professionalism." Many extraordinary things were done in the name of professionalism. And when everything else went wrong in a war, as sometimes seemed the case in Vietnam, this professionalism existed like an envelope, in the sense that each airplane was said to have a certain "performance envelope." Inside, inside that world, the fliers remained one another's relentless judges right up to the end, when not a hell of a lot of people outside seemed to care any longer."

- Tom Wolfe, The Truest Sport: Jousting with Sam and Charlie, Esquire, December 1967

Flying Maestro

"This was the toughening process, which Buzz understood. The threat to his life was not a monolith called Danger; it was a lot of bits and pieces of trouble and potential trouble, and his secret of gaining internal strength was to recognize them, and deal with them, one by one. It had dawned on me that Marrow broke off little fragments of Danger, put them in compartments, and took them out from time to time to dust them off in his mind. He evidently mastered every possible separate minor mishap, and every possible major breakdown, too, by going over it many, many times in imagination, till his defenses were second nature. Thus there seemed to be very little about flying that was unexpected or unknown to him, and when something nasty happened, the event was not just a blank empty wall in his mind, against which cries of vague inner fear echoed; it was rather a familiar-shaped reality, it was itself, and it stirred up in his mind other realities - consequences, remedies, preventions, counter-measures."

- John Hersey, The War Lover

Types of Aerial Missions

- Air superiority
- Reconnaissance
- Close air support for ground forces
- Battlefield interdiction of the enemy's line of communications and supply
- Strategic bombing of raw materials and war production
- Airborne / airmobility operations
- Aerial resupply
- Air policing
- Antisubmarine warfare
- Countersea operations

The Air Force's Unique Contributions to National Security

"While we conduct many missions, there are four unique Air Force contributions that define us - gaining control of air, space, and cyberspace; holding targets at risk around the world; providing responsive intelligence, surveillance, and reconnaissance; and rapidly transporting people and equipment across the globe.

We carry out each of these unique, advanced capabilities through an unmatched global command and control network. Collectively, they not only distinguish our Air Force as the preeminent air and space power, they also bolster the United States' reputation as the world's most responsive and capable strategic actor."

- General Norton Schwartz, U.S. Air Force Chief of Staff, 2011

Airpower Philosophers - Bombers

- **HG Wells - "The War in the Air"**
- **Peter Strasser - Head of German Naval Airship Division - "Destroy England by Fire"**
- **Hugh Trenchard**
  - **First true practitioner of strategic bombing in WWI**
    - **Rebecca Grant, Trenchard at the Creation, Air Force Magazine, Feb 2004**
  - **Trenchard was a huge influence on Mitchell**
    - **Dewitt Copp, A Few Great Captains, p. 16**

Airpower Philosophers - Bombers

- **Billy Mitchell**
  - **Sank Ostfriesland in 1921**
- **General Giulio Douhet 1921 - "Il Dominio dell'Aria" - Command of the Air**
  - **His airpower doctrine was:**
    - **The need for an independent air force**
    - **Supremacy of bomber over fighter**
    - **Power of mass aerial bombardment can break an enemy's industrial capacity and will to fight**
    - **Had a huge influence on US Army Air Corps**
    - **- Dewitt Copp, A Few Great Captains, p 106**

Airpower Philosophers - Bombers

- **1936 General Walther Wever, Chief of Staff of Luftwaffe killed in plane crash**
  - **Firm believer in Douhet and Mitchell**
  - **Developing 4 engine Ju 89 and Do 19**
    - **Canceled after his death by Goering**
  - **His death ended the possibility of Germany acquiring strategic bomber force**
    - Dewitt Copp, A Few Great Captains, p. 370
- **LEO Charlton 1936 - "War Over England"**
- **Alexander De Seversky 1942 - "Victory Through Airpower"**

The Command of the Air

- Wars are no longer fought between armies, but between whole peoples, and future wars would be total and unrestrained, with civilians as legitimate targets

- Wars are won by destroying "the enemy's will to resist" - and only this produces "decisive victory." Defeat of enemy forces is a poor indirect route. It is far better to strike directly at "vital centers" of power inside an enemy nation

- World War I was a turning point, showing armies and navies can no longer end wars; the power of the defense makes offensive action futile

- The airplane was a revolutionary offensive weapon, bypassing defenses and carrying out massive attacks on cities, destroying the enemy's will to resist

- For national defense, command of the air is necessary and sufficient. The army's job is to mop up after air attacks. The navy is of even less use

- Robert S. Dudney, Douhet, Air Force Magazine, April 2011

The Command of the Air

- Centerpiece of theory was airplane's potential to devastate an enemy's industrial heartland in relatively short order. However, an air force's first task was to achieve command of the air

- Did not argue for air battle, but rather for attacking airfields, parked aircraft, and aircraft factories

- With enemy air capabilities neutralized the foe would be unable to attack. One's own bombers could then be freed to unleash a storm of aerial bombardment against critical targets

- Attacks were to use explosive bombs to knock down big structures, incendiary bombs to set them aflame, and poison gas bombs to thwart efforts to put out the fires

- Identified five basic types of targets: industrial centers, transportation infrastructure, communications, key buildings, and civilian morale

- Advised heavy use of urban bombing, which would kill and terrorize the civilian population and that this would force surrender

- Robert S. Dudney, Douhet, Air Force Magazine, April 2011

Warden's Five Rings

- **Colonel John Warden advocated targeting from inside out, in order of priority**
  - **Leadership**
  - **System Essentials**
  - **Infrastructure**
  - **Population**
  - **Fielded Military Forces**
- **Airpower opens up strategic vistas beyond the landbound**
  - **Warplanes bypass enemy's armed forces + strike at society's vitals**
- **Best strategy for weakening enemy is to prioritize targets from inside out - not from outside in as was done in past**
- **Avoid strength + strike weakness like Sun Tzu**
- **First used in Operation Desert Storm 1990**

- James Holmes, What Air Power Can and Cannot Accomplish, The Diplomat, Oct. 07, 2014

- Clint Hinote, The Air Campaign Against ISIS: Understanding What Air Strikes Can Do - and What They Can't, Council on Foreign Relations, Sept. 30, 2014

Airpower Philosophers - Fighters

- **Claire Chennault**
  - **Fort Knox 1933**
    - **Showed air defense using a warning line of ground observers employing radio and telephone communications was extremely effective in vectoring fighters onto bombers**
  - **"The Role of Defensive Pursuit"**
    - **Defending pursuit planes could intercept attacking bombers before the bombers reached the target if furnished with timely information and if the interception area had sufficient depth to allow for the necessary time factors**
    - **Bombardment planes flying deep into enemy territory required friendly fighter protection to prevent heavy losses if not utter failure of mission**
      - Dewitt Copp, A Few Great Captains, p. 105

Airpower Philosophers - Fighters

- ## Claire Chennault
  - ### Theory proven 1941-1942 in China with Flying Tigers
    - Ronald Regan, Flying with Chennault's Tigers in the AVG, Aviation History Magazine, November 2000

Airpower Philosophers - Fighters

- **1936 Sir Thomas Inskip appointed British Minister for Coordination of Defense**
  - **Britain losing bomber race to Germany**
  - **If there was war, Hitler would have to win quickly**
  - **If RAF could hold off Luftwaffe, then in time Germany could be defeated**
  - **Therefore role of RAF not to deliver knock out blow, but to prevent Germans from knocking us out**
  - **Did not accept there was no defense against bomber**
    - **Felt Hurricane and Spitfire and radar could defend England**
  - **Supported by Air Marshall Sir Hugh Dowding, Chief of RAF Fighter Command in 1937**
    - **Dewitt Copp, A Few Great Captains, p. 415**

Principles of Air Combat

- **Detection**
    - **"Lose the sight, lose the fight"**
- **Mutual support is everything**
- **Air battles are lost…not won**
- **Maintain energy**
    - **"Running out of airspeed, altitude, and ideas simultaneously"**
- **Be aggressive**
- **Know when to reverse**
- **If all else fails: point your nose at the enemy**
- **Never give up!**
- **On the attack, take the high man**
- **Learn to know what a victory is**
    - **"Turn and burn"**
- **Always Check Six**
    - **"Beware the Hun in the Sun"**

- Damian Housman, Air War: Modern Tactical Air Combat

Lessons of Air Combat in Vietnam

"The most important way to approach combat was simple goals, simple plan. Goals without a plan is nothing more than a wish.

Relentless preparation.

Repetition produces confidence.

Attention to detail.

When am I most hurt? When I am most vulnerable?

Satisfied. The day I stop wanting to get better is the day I stop being good.

Repeat the process.

The glue that holds all that together is self-discipline. Anybody can be self-disciplined on occasion, that is not what we are talking about. We are talking about that gritty day in day out self discipline. If you want your performance to improve, improve your self-discipline."

                                                                 - CDR Willie Driscoll USN

How to Make a Great Airplane

- **During World War II, the aircraft engine was recognized as the single most critical component of an aircraft**

    "Get the best engine and build an aircraft around it"

- **One of the key factors in US Air Force's air superiority over last 60 years has been the quality of its jet engines, the willingness to use them a lot, and providing quality maintenance for them**

- Get the Power and Rule the Skys, StrategyPage, June 23, 2007

Evolution of Aerial Weapons

- **Measure / countermeasure**

Evolution of Air Superiority

- **World War I**
  - **Knights of the air - dog fighting**
- **World War II**
  - **Fighter interceptors vs. fighter escorts**
- **Vietnam**
  - **Dawn of the missile age**
- **Gulf War I**
  - **AWACs**
  - **Air supremacy**

Evolution of Close Air Support / Battlefield Interdiction

- **World War I**
  - **Tally Ho!**
- **World War II**
  - **Cab rank**
- **Vietnam**
  - **Laser guided bomb**
- **Gulf War I**
  - **JSTARS ~ Tank plinking**
- **Afghanistan and Gulf War II**
  - **If it moves we kill it ~ Closing sensor shooter loop**
  - **JDAM**

Airpower Can Dominate Landpower

- **Since end of Cold War, classic roles of airpower + land power have changed against modern mechanized opponents**
  - **Ground forces fix + shape enemy forces, airpower does most of the killing**
- **1991 - Desert Storm**
  - **Enabled by US air defense suppression campaign, E-8 JSTARS for fixed + moving target identification, aircraft with infrared sensors + laser-guided bombs to destroy dug-in tanks at night**
  - **Battle of Khafji - Two advancing Iraqi armored columns shredded by precision night air attacks**
  - **Iraqi tank plinking with laser-guided bombs**
- **1999 - Kosovo**
  - **Without Allied ground troops to force them to deploy + concentrate Serbians could stay dispersed, keeping them safe from air attack**
- **2003 - Operation Iraqi Freedom**
  - **Huge sandstorm slowed Allied advance**
  - **Iraqis believed it would provide cover for redeployment of Republican Guard armor towards US 3rd Infantry Division**
  - **Instead Iraqis shredded by precision air attacks guided by E-8 JSTARS**

- Benjamin S. Lambeth, Airland Reversal, Air Force, Feb. 2014

Close Air Support

"Anyone who has to fight, even with the most modern weapons, against an enemy in complete command of the air, fights like a savage against modern troops"

- Erwin Rommel

"What was decisive in itself was the loss of air supremacy. Everything depends on air supremacy, everything else must take second place."

- General Karl Koller, Why We Lost the War (last Luftwaffe Chief of Staff)

Evolution of Strategic Bombing - Weapons

- **World War I**
  - **Handfuls of planes, handfuls of dumb bombs**
- **World War II**
  - **Hundreds of planes, thousands of dumb bombs -- all on one target -- which was usually missed**

Evolution of Strategic Bombing - Weapons

- ## Vietnam
  - ### Paul Doumer Bridge
    - In 1967, attacked 4 times, each time by 20-30 aircraft with dumb bombs, each attack successfully dropped spans
    - In 1972, attacked twice, first by 12 planes with laser guided bombs that damaged bridge, second attack next day by 4 planes dropped span
    - Alfred Price, Bridge Busting, Air Force Magazine, December 1993
- ## Afghanistan and Gulf War II
  - ### JDAM - GPS guided bombs effectively never miss
    - Vernon Loeb, Bursts of Brilliance, Washington Post, Dec 15, 2002

Evolution of Strategic Bombing - Effects

- **World War I**
  - **First Battle of Britain**
- **World War II**
  - **Second Battle of Britain**
- **Vietnam**
  - **Linebacker I and II**
- **Gulf War I**
  - **Baghdad lines of communication severed**
- **Serbia**
  - **Effects based warfare**
- **Afghanistan and Gulf War II**
  - **Political assassination**
  - **Shock and Awe**

"90% of aviation is on the ground"
    - Clement Keys, 1929, President of Curtiss-Wright Corporation

(Think logistics, logistics, logistics…)

- **Great example of this was Berlin Airlift**

4 Keys to Stealth

- **Shaping to deflect radar waves**
- **Fly by wire flight controls**
- **Radar absorbent materials**
- **Internal radar traps**

  - Lt. Col William O'Connor, Stealth Fighter: A Year in the Life of an F-117 Pilot

Case Study Summary - First Battle of Britain

- **Goal**
  - **Germans - Crush British morale**
- **Center of Gravity (Strategy)**
  - **Germans - Attack British civilians from the air**
- **Equipment**
  - **Germans - Zeppelins ~ British - Fighter planes**
- **Training**
  - **Germans - Excellent ~ British - Improving over time**
- **Leadership**
  - **Germans - Commander Peter Strasser**
- **Morale**
  - **Germans - High then decreasing ~ British - Low then increasing**
- **Tactics**
  - **Germans - Climb above British fighters, attack at night**
  - **British - Burn the Zeppelins with explosive bullets to tear open fabric and incendiary bullets to ignite hydrogen**
- **Intangibles ~ Mistakes**
  - **Germans - Zeppelins could not operate at highest altitudes they could reach due to oxygen deprivation for crew, brittleness of machinery, being blown all over by high winds**
- **Outcome**
  - **51 Zeppelin raids (26 against London) from 1915 - 1918, killed 557 + injured 1,358**
  - **Cost of Zeppelins was 5 times the damage they inflicted - Caused little damage but caused great alarm**
  - **Zeppelins replaced by Gotha + Type R bombers as primary aerial vehicles of war**
  - **Failed in their goal, but did tie up significant British resources**
  - **Caused British to form first independent air arm, Royal Air Force**
  - **- John T. Correll, The Scourge of the Zeppelin, Air Force Magazine, Feb. 2012**

Case Study Summary - Aerial Policing in Iraq

- **Background**
  - 1920 uprising of Sunni + Shia in Iraq against British put down by 100,000 British + Indian troops with thousands of Arabs + hundreds of British + Indian soldiers killed, costing million of pounds
- **Goal**
  - Winston Churchill, War Secretary, wished to keep Iraq under control in more cost-effective way
- **Center of Gravity (Strategy)**
  - Aerial policing by RAF eager to carve out a role for itself by taking command of military operations in Iraq
- **Equipment**
  - Few squadrons of RAF bombers
- **Training ~ Leadership ~ Morale**
  - Excellent for RAF
- **Tactics**
  - Terrorize tribesmen by dropping bombs on them to make them cooperate
- **Intangibles**
  - Morals of bombing never considered
- **Mistakes**
  - RAF became convinced bombing was enough to win a war
  - Bomber Harris, leader of Bomber Command in World War II, was squadron leader in Iraq, applied same techniques to Germany
- **Outcome**
  - It worked in 1920's and up until World War II
  - US strategy in Iraq, Afghanistan, Pakistan direct descendent of aerial policing
    - Marek Pruszewicz, The 1920's British Air Bombing Campaign in Iraq, BBC News Magazine, Oct. 6, 2014

Focused Case Study - Battle of Britain

- **German goal - sweep RAF from skies to allow for German invasion of England**

- **British goal - prevent German invasion**

   - Richard Overy, The Battle

Focused Case Study - Battle of Britain

- **Myths**
  - **British feared knock out blow from the air would succeed**
    - **Learned civilian morale can't be broken by bombing**
  - **Overestimated German strength, underestimated RAF strength**
    - **Led to myth of The Few - few aircraft, few pilots**
    - **Germans believed they were winning the attrition battle against the RAF**
    - **Actually the forces were evenly matched**
- **Did the British win, or did the Germans lose?**

  - Richard Overy, The Battle

Focused Case Study - Battle of Britain

- **Tactical considerations**
  - **Limited range of German fighters / tied to bombers**
  - **British defense in depth / air fleet in being**
  - **Radar / British command and control**
  - **Richard Overy, The Battle**

Focused Case Study - Battle of Britain

- **Why the British won the battle of attrition**
  - **RAF superior to Germans in balance of forces (pilots and planes)**
  - **Intelligence misperceptions**
    - **British fought as if it were a last ditch struggle against an overwhelming enemy**
    - **Germans fought a foe they saw as technically and tactically inept and short of aircraft, pilots, bases**
    - **This led to the strategic misjudgment of shifting from airfields to industry**
    - **- Richard Overy, The Battle**

Case Study Summary - Battle of Britain

- **Goal**
  - **Obtain air superiority to allow invasion**
- **Center of Gravity (Strategy)**
  - **RAF and airfields**
- **Equipment**
  - **Equipment equivalent in quality**
  - **Attacker without numerical advantage**
- **Training**
  - **Both sides well trained**
- **Leadership**
  - **British leadership superior**

Case Study Summary - Battle of Britain

- **Morale**
  - **Germans arrogant and British fighting for their lives**
- **Tactics**
  - **Big Wing vs. squadrons**
- **Intangibles**
  - **Radar reduced fog of war for British**
- **Mistakes**
  - **Shifting center of gravity from RAF and airfields to London**
- **Outcome**
  - **British as saviors of the free world**

Focused Case Study - Flying Tigers

- **Mission - defend Burma Road and Chinese cities from Japanese air attack**

- **Training and tactics and leadership prevails over an enemy with superior equipment**
  - **Being outside chain of command allows innovation**

- **Validation of "The Role of Defensive Pursuit"**

- **Shot down 300 confirmed and 300 probable enemy planes, lost 69 fighters and 25 pilots**

  - **Ronald Regan, Flying with Chennault's Tigers in the AVG, Aviation History Magazine, November 2000**

Case Study Summary - Flying Tigers

- **Goal**
  - **Contest Japanese air superiority**
- **Center of Gravity (Strategy)**
  - **Break up Japanese rigid air discipline**
- **Equipment**
  - **P-40 - heavily armed + armored, superior dive speed**
  - **Zero - no armor, more maneuverable, faster rate of climb**
- **Training**
  - **Nonstop for US**
- **Leadership**
  - **Chennault - unconventional, unorthodox, only a Captain**
- **Morale**
  - **US thrived on adversity**
  - **- Kelly Bell, The Flying Tigers, Strategy and Tactics 227, Mar/Apr 2005**

Case Study Summary - Flying Tigers

- **Tactics**
  - **US - detection - interception - destruction**
  - **US - fight as 2 ship team - use teamwork - hit and run**
  - **US - dive on enemy formation - shoot - escape before they can react**
- **Intangibles**
  - **Ground based observation posts gave US warning of attacks**
- **Mistakes**
  - **Flying Tigers were outside of USAAF which could not tolerate it and helped destroy it**
- **Outcome**
  - **Convinced world Japanese were not invincible**
  - **Tally from 12/18/41 - 7/4/42 (started with 100 P-40s but had no more than 49 planes and 70 pilots available at any time, lost 50 planes)**
    - **Shot down 299 planes, 8 pilots KIA, 2 pilots lost on ground, 4 pilots MIA**
  - **- Kelly Bell, The Flying Tigers, Strategy and Tactics 227, Mar/Apr 2005**

Case Study Summary - Doolittle Raid

- **Goal**
  - **Disprove Japanese statements that homeland cannot be attacked**
- **Center of Gravity (Strategy)**
  - **Japanese cities ~ Target was Boyd's mental level of war**
- **Equipment - Training**
  - **B-25 ~ Harrison Storms**
- **Leadership**
  - **Jimmy Doolittle ~ Roosevelt said they came from base in Shangri-La**
- **Morale**
  - **First chance to attack Japan, so high for US**
- **Tactics - Intangibles - Mistakes**
  - **Task force discovered, led to B-25's launched early**
- **Outcome**
  - **Led to Battle of Midway which was beginning of end for Japan**

Focused Case Study - Strategic Bombing in WWII

- **German Blitz on England in 1940-1941**
  - **Had little effect on production, stiffened morale**
  - **…but still convinced the British and Americans strategic bombing as a way of conducting war was here to stay - and mattered**
    - **Richard Overy, Why the Allies Won, Chapter 4**

Focused Case Study - Strategic Bombing in WWII

- **British bombing of Germany**
  - **Initially constituted the Second Front against Germany**
  - **Nighttime area bombing used to conduct war of attrition against German economy, in order to undermine its material ability to wage war**
  - **Fire bombing of Hamburg July 1943 - 40,000 dead, 1 million homeless**
    - **Richard Overy, Why the Allies Won, Chapter 4**

Focused Case Study - Strategic Bombing in WWII

- **US bombing of Germany**
  - **Daylight precision bombing**
  - **By December 1943, little had been achieved though losses were great**
  - **Only one thing would secure the skies over Germany: defeat of the Luftwaffe**
    - **(Clausewitz: concentrate your effort against the military forces of the enemy)**
  - **"Destroy the Enemy Air Force wherever you find them in the air, on the ground, and in the factories" - Hap Arnold 1/1/1944**
  - **- Richard Overy, Why the Allies Won, Chapter 4**

Focused Case Study - Strategic Bombing in WWII

- **US bombing of Germany**
  - **Birth of the long range escort fighter to convey bombers transformed air war overnight**
  - **Targeted German aircraft industry and oil industry**
    - **Luftwaffe was defeated**
  - **Then turned back to rest of German economy**
    - **Richard Overy, Why the Allies Won, Chapter 4**

Focused Case Study - Strategic Bombing in WWII

- ## US bombing of Japan
    - ### By spring 1945 US could bomb Japan
    - ### April - August 1945 Japan's major cities burned to ground by firebombing
    - ### August 1945 atomic bombing of Hiroshima and Nagasaki
        - #### - Richard Overy, Why the Allies Won, Chapter 4

Focused Case Study - Strategic Bombing in WWII

- **Did it work?**
  - **No - US Strategic Bombing Survey**
  - **Yes, it was a Second Front**
    - **Italy had no effective defenses, production was affected**
    - **Japan had no effective defenses, cities were destroyed**
    - **Germany had effective defenses, but…**
      - **Fighters and AA guns withdrawn from other fronts to defend homeland / Production shifted to fighters and AA guns from other needed armaments**
      - **Hindered production, drove it underground, did not stop it**
      - **Negatively impacted morale**
      - **Destruction of Luftwaffe allowed D-Day to occur**
      - **- Richard Overy, Why the Allies Won, Chapter 4**

Case Study Summary - 1967 Arab Israeli Air War

- **Morale**
  - **Israeli - great ~ Arab - poor**
- **Tactics**
  - **Divide enemies and conquer one at a time**
- **Intangibles**
  - **Israelis - logistics superb (aircraft quick turnaround is force multiplier) ~ intelligence superb, operations well planned**
  - **Arabs - poor logistics**
- **Mistakes**
  - **Arabs were too passive and had no coordination between them**
- **Outcome**
  - **Israeli air superiority allowed for psychological advantage over Arabs**
  - **- Joseph Miranda, Middle East Battles: Clash of Arms in the Sinai Campaigns of 1956+1967, Strategy and Tactics 226 Jan-Feb 2005, p.20-21**

Case Study Summary - Rolling Thunder 1965-1968

- **Goal**
  - **Persuade North Vietnam to end war against South Vietnam**
- **Center of Gravity (Strategy)**
  - **None - did not threaten regime's survival ~ deliberately did not target Hanoi + Haiphong (were protected zones)**
  - **Rather than target ports + supply areas, targeted infiltration routes**
- **Equipment**
  - **F-105s flew 75% of bombing missions, heavy losses**
- **Training ~ Leadership ~ Morale**
  - **Poor - coming from Washington DC / White House leading to micromanagement of air war ~ no military man present at White House weekly targeting meetings**
    - **John T. Correll, Rolling Thunder, Air Force, March 2005 Vol. 88 No. 3**

Case Study Summary - Rolling Thunder 1965-1968

- **Tactics**
  - **Fear of provoking confrontation with China or Russia led to restrictions on tactics ~ could not attack SAM site unless fired on by it, could not attack fighter bases**
  - **Advent of Wild Weasels to fight SAMS ~ Bombing halts**
- **Intangibles ~ Mistakes**
  - **Policy of gradual escalation robbed air strikes of impact and gave North Vietnam time to recover between them**
- **Outcome**
  - **Classic example of air power failure**
  - **Achieved no strategic result - did not persuade North Vietnam to end war or quit infiltrating South Vietnam**
  - **"The fragmentation of our air might by overly restrictive controls, limitations, and the doctrine of 'gradualism' placed on our aviation forces…prevented them from waging the air campaign in the manner and according to the timetable which was best calculated to achieve maximum results."**
    - **- John T. Correll, Rolling Thunder, Air Force, March 2005 Vol. 88 No. 3**

Unanticipated Consequences

- Air War: Vietnam, non-fiction book adapted from Flying Magazine article, published in 1967 by aviation journalist Frank Harvey

- Author intended it to be definitive study of conduct of air war in Vietnam, done at urging of + in cooperation with US Air Force + US Navy

  - Author did not intend to cover political situation of war

- Instead, due to review in New York Review of Books, Air War: Vietnam ended up being record of what US airmen did to people of Vietnam

  - Under justification of doing anything to save US lives, it described air war as vicious + savage one-sided war that violates American sense of fair play

  - Described US use of napalm + cluster bombs while doing reconnaissance by smoke / fire against Viet Cong + civilians, Huey Hog gunships, B-52's - and the pilot's indifference to their actions

  "It's a difficult thing to say. But now that I've seen what the bombs and napalm did to the people on our ship, I'm not so sure I want to drop any more of that stuff on North Vietnam." - LCDR John McCain 3rd, describing the aftermath of a fire on the flight deck of the aircraft carrier USS Forrestal

- This review, which was widely circulated, shifted debate about war from arguing about US political + military strategy to whether US conduct of war is morally defensible

  - Robert Crichton, Our Air War, New York Review of Books, Jan. 4, 1968

Case Study Summary - Linebacker 1972

[US - Vietnamization ~ N Vietnam - Easter invasion to exploit US withdrawal of troops and US domestic politics]

- **Goal**
  - Cripple North Vietnam supply system (storage and distribution)
  - Press Hanoi to negotiate to end war
- **Center of Gravity (Strategy)**
  - Hanoi + Haiphong
- **Equipment**
  - B-52 vs. SA-2, Laser guided bomb first use (only 9 targeting pods)
- **Training**
- **Leadership**
  - Nixon micromanaged targeting thinking USAF targeting too timid

  - Lee Brimmicombe-Wood, Linebacker: The American Air War in Southeast Asia 1972, Strategy and Tactics #217

Case Study Summary - Linebacker 1972

- **Morale**
  - **Was North Vietnam's version of London Blitz, did not break their morale**
- **Tactics**
  - **Linebacker I: May-October 1972**
    - **Decreased flow of supplies by 70%, but N Vietnam still fought on**
    - **Breakthrough in negotiations leads to bombing halt but N Vietnam walks away again from negotiations**
  - **Linebacker II: 2 weeks in December 1972**
    - **Hanoi is pummeled, but believe they are winning as they shoot down 11 B-52's in 4 days**
    - **US finally gets tactics right, launches 120 plane raid on Hanoi, N Vietnam runs out of SAMs and asks for negotiations to restart**
  - **- Lee Brimmicombe-Wood, Linebacker: The American Air War in Southeast Asia 1972, Strategy and Tactics #217**

Case Study Summary - Linebacker 1972

- **Intangibles**
  - **Decreased collateral damage due to first use of laser guided bombs**
- **Mistakes**
  - **SAC HQ micromanagement of initial Linebacker II tactics**
- **Outcome**
  - **US says we won: N Vietnam back to negotiating table to sign same agreement from October**
  - **N Vietnam says we won: N Vietnam got to keep their forces in the South and used them in 1975 to conquer the country**
  - **- Lee Brimmicombe-Wood, Linebacker: The American Air War in Southeast Asia 1972, Strategy and Tactics #217**

Case Study Summary - Battle of NORAD

- **Goal**
  - **Defend the sky against Soviet bomber attack**
- **Center of Gravity (Strategy)**
  - **SAGE**
- **Equipment**
  - **Ground Observer Corps 1950-1959**
    - **Low cost alternative to radar in US + Canada**
    - **800,000 volunteers at 16,000 observation posts armed with binoculars + phones linked to 73 filter centers**
    - **Aircraft recognition training provided**
    - **No longer needed with advent of DEW Line + ICBMs**

- Bruce D. Callander, The Ground Observer Corps, Air Force, Feb 2006

- Walter J. Boyne, The Rise of Air Defense, Air Force, Dec 1999

- Stephen P. Moeller, Vigilant and Invincible, Air Defense Artillery Magazine, May-June 1995

Case Study Summary - Battle of NORAD

- **Equipment**
  - **Radar**
    - **Lashup in US 1950**
    - **Permanent System in US 1953**
    - **Airborne Early Warning aircraft 1953**
    - **Pinetree Line in US + Canada 1954**
    - **Texas Towers offshore 1955**
    - **Mid Canada Line 1957**
    - **DEW Line in US + Canada 1957**
    - **BMEWS 1963**

- Bruce D. Callander, The Ground Observer Corps, Air Force, Feb 2006
- Walter J. Boyne, The Rise of Air Defense, Air Force, Dec 1999
- Stephen P. Moeller, Vigilant and Invincible, Air Defense Artillery Magazine, May-June 1995

Case Study Summary - Battle of NORAD

- **Equipment**
  - **Anti aircraft artillery by 1953**
    - **75 mm Skysweepers - 8 battalions with 4 batteries with 4 guns**
    - **90 mm - 42 battalions each with 4 batteries with 4 guns**
    - **120 mm - 14 battalions each with 4 batteries with 4 guns**
  - **Surface to air missiles**
    - **Nike Ajax 1954-1963 - 244 batteries with 8-12 launchers / battery**
    - **Nike Hercules 1958-1974 - 145 batteries with 8-12 launchers / battery**
    - **BOMARC 1959 - 500 missiles at 10 sites**
  - **Interceptors - thousands**
    - **F89 -> F-94 -> F-86D -> F-102 (SAGE compatible) -> F-106 + F-101**

- Bruce D. Callander, The Ground Observer Corps, Air Force, Feb 2006

- Walter J. Boyne, The Rise of Air Defense, Air Force, Dec 1999

- Stephen P. Moeller, Vigilant and Invincible, Air Defense Artillery Magazine, May-June 1995

Case Study Summary - Battle of NORAD

- **Training ~ Leadership ~ Morale**
  - **NORAD activated in 1957**
  - **Controlled by SAGE in 1958**
- **Tactics**
  - **Clouded by Inter-Service Rivalry of USAF + US Army**
- **Intangibles ~ Mistakes**
  - **The Threat = Soviet bombers by 1960 - 10 Bison + 150 Bear heavy bombers ~ 1,500-2,000 Badger medium bombers**
- **Outcome**
  - **Ultimately outdated before it was finished by advent of ICBM**

- Bruce D. Callander, The Ground Observer Corps, Air Force, Feb 2006
- Walter J. Boyne, The Rise of Air Defense, Air Force, Dec 1999
- Stephen P. Moeller, Vigilant and Invincible, Air Defense Artillery Magazine, May-June 1995

Old Wine in New Bottles

- Drone warfare is natural evolution of
  - Flawed ideas underpinning misguided theory of strategic bombing in WWII
  - Disastrous all-knowing, all-seeing electronic battlefield
  - Naïve targeting theories in drug war + theory of precision targeted sanctions
- At root of these theories is 1930's Army Air Corps Tactical School theory of victory through airpower alone
  - Enemy is physical system or network made up of critical linkages + nodes
  - Enemy system can be reliably analyzed + understood from a distance + the nodes / links vital to functioning of system can be identified
  - These vital nodes / links can be attacked + destroyed with precision strikes thus administering mortal wound to enemy
- So conduct of war is engineering problem
  - Today enemy is 'system of systems' composed of high value targets that can be identified + destroyed without risk from a distance with unmanned system
  - This theory has failed to perform as predicted
- Viewing war as engineering problem focused on technology + destruction ignores fundamental fact of war - Machines don't fight wars, people do, and they use their minds
  - Physical effects can be offset by mental effects (adaptability, unpredictability) + moral effects (resolve, will to resist)
    - Franklin Spinney, The Folly of Machine Warfare, Counterpunch, Mar 27-29, 2015

Focused Case Study - Selfridge Field

- **Named after Lt. Thomas E. Selfridge, first casualty of powered flight**
- **Starts as Henry B. Joy Aviation Field**
  - **President of Packard + Lincoln Highway Association**
  - **May 1917 - leases field to US Army**
- **Albert A. Kahn, industrial architect, designs buildings**
- **July 1917 - airplanes begin arriving**
- **World War I - trained pilots, aerial gunners, mechanics**
- **Interwar years - home of First Pursuit Group**

    "Home of the Generals"
  - **Operational testing of new aircraft**
  - **1922 - hosted National Air Races**
  - **1922 - US purchases the land**
- **World War II - increased from 600 to 3,000 acres in size, used for training, including Tuskegee Airmen**

- Deborah Larsen + Louis Nigro, Selfridge Field

Focused Case Study - Selfridge Field

- **1947 - USAF founded, becomes Selfridge AF Base**
- **1947 - Jet fighters arrive for air defense - Alert Barns**
- **1954 - Nike SAM sites set up**
- **1960 - 1965 SAC KC-97 tankers**
- **1967 - 82nd Airborne division flies in to help control Detroit riots**
- **Joint base**
  - **1966 - USCG base established**
  - **1970 - Naval Air Reserve + US Marine Corps Reserve base established**
  - **1971 - becomes Selfridge Air National Guard Base after transfer to Michigan National Guard**
  - **2003 - Michigan Army National Guard base established**

- Deborah Larsen + Louis Nigro, Selfridge Field

Computing Case Study Summary - Link Trainer in 1930's

- **Goal**
  - **Provide safe training to pilot students to help them improve their skills in instrument flying rules**
- **Center of Gravity (Strategy)**
  - **Build analog flight simulator**
- **Technology / Equipment**
  - **Based on pump organ technology because Link's family made pump organs**
- **Training ~ Leadership ~ Morale**
- **Tactics**
  - **Used by 1 student + 1 instructor ~ "Felt" like an airplane**
- **Intangibles ~ Mistakes**
- **Outcome**
  - **First practical widespread use of simulation in training**
  - **Improved quality + decreased cost of flight instruction**
  - **Leads to development of digital flight simulator (Whirlwind)**

Computing Case Study Summary - Semi Automatic Ground Environment System (SAGE)

- ## Goal
  - ### Make the sky transparent / automate control of air defense
- ## Center of Gravity (Strategy)
  - ### Radar based early warning system using centralized network computer control
- ## Technology / Equipment
  - ### AN/FSQ-7 computer (Whirlwind II)
    - Outgrowth of Whirlwind real time flight simulator designed to replace Link trainer
    - A computer you could walk inside of
    - 15,000 square feet in size, largest computer every built
    - 50,000 vacuum tubes consuming 3 million watts of power
    - 2 CPUs with warm standby
  - ### System
    - 3 SAGE Combat Centers + 23 SAGE Direction Centers, each approximately 100-150,000 square feet in size

- SAGE Special Issue, Annals of the History of Computing, October 1983
- Vigilance and Vacuum Tubes: The SAGE System, 1956-1963, The Computer History Museum, May 19, 1998
- Gordon Bell, The Computer Museum's First Field Trip: The Northbay AN/FSQ-7 SAGE Site, Communications of the ACM, Feb 1983
- Paul N. Edwards, The Closed World: Computers and the Politics of Discourse in Cold War America

Computing Case Study Summary - Semi Automatic Ground Environment System (SAGE)

- **Technology / Equipment**
  - **Innovations**
    - **Core memory**
    - **Duplex standby system gave four 9's reliability (99.99%)**
    - **Digital communications network over phone lines with modems**
    - **Real-time computing**
    - **Time sharing**
    - **Marginal checking**
    - **CRT display + light gun**
    - **Long lasting vacuum tubes**
- **Training ~ Leadership ~ Morale ~ Tactics**
  - **Deployed 1958-1961 ~ Decommissioned 1982**
  - **Laid foundations for US computer industry by advancing state of the art + training a generation of hardware + software engineers**
    - **20% of world's programmers worked on it**

- SAGE Special Issue, Annals of the History of Computing, October 1983
- Vigilance and Vacuum Tubes: The SAGE System, 1956-1963, The Computer History Museum, May 19, 1998
- Gordon Bell, The Computer Museum's First Field Trip: The Northbay AN/FSQ-7 SAGE Site, Communications of the ACM, Feb 1983
- Paul N. Edwards, The Closed World: Computers and the Politics of Discourse in Cold War America

Computing Case Study Summary - Semi Automatic Ground Environment System (SAGE)

- **Intangibles**
  - **Very expensive**
  - **Vulnerable to jamming**
  - **It's got to work right the first time!**
- **Mistakes**
  - **Co-located at SAC bases to take advantage of SAC lifestyle**
  - **Had no performance specifications as air defense system**
  - **Made obsolete by ICBM**
- **Outcome**
  - **IBM built hardware - led to their dominance of computer industry**
  - **Led to air traffic control system + SABRE airline reservation system**
  - **Created belief there was a technical solution to nuclear war**

- SAGE Special Issue, Annals of the History of Computing, October 1983
- Vigilance and Vacuum Tubes: The SAGE System, 1956-1963, The Computer History Museum, May 19, 1998
- Gordon Bell, The Computer Museum's First Field Trip: The Northbay AN/FSQ-7 SAGE Site, Communications of the ACM, Feb 1983
- Paul N. Edwards, The Closed World: Computers and the Politics of Discourse in Cold War America

Personal Case Study - Sergeant George Sommerville

- **Role - US Army Air Force B-17 radio / electronic warfare operator**
- **Story**
  - **Was sick one day and was grounded, missed a mission, his crew never came back from that mission**

Personal Case Study - Sergeant James O'Connor

- **Role - SAC, USAF**
- **Story**
  - **B-47 Stratojet A5 Fire Control Section Chief for B-47 tail turret at Brize Norton air base in England**
  - **Borrowing B-36 jacket story**

Personal Case Study - Chuck Yeager

- **Role - Test pilot USAF**
- **Story**
  - **On flying - it is a duty - flying in combat is your duty.**
    - **Death in combat happens so randomly, you can't do anything about it, can't control whether you are killed. So, if you assume you're already dead, it puts your mind at ease.**
    - **Test flying is the same way, you can't control whether you are killed - so if you accept the worst that can happen - death - you can focus on the job at hand.**
    - **Flying in combat gave him an edge in test piloting over the civilian pilots who had never been in combat.**
    - **- Chuck Yeager, Lecture at EAA Airventure 2006**

Personal Case Study - Chuck Yeager

- ## Story
  - ### On women in the military
    - He noted that since WWII WASPs, women have flown military aircraft and that women pilots can fly anything and are as good as male pilots. He talked at length at how great a pilot Jackie Cochran was.
    - And, as for getting in a dogfight with them - well any man can tell you that women are vicious
  - ### How did he stay alive?
    - He was careful. He always knew the operation of his pressure suit, helmet, and aircraft inside and out because you have to use it when you are half conscious (X-1A, NF-104)
  - ### Astonishing to me the detailed recall he had of flights from 50 years ago
  - - Chuck Yeager, Lecture at EAA Airventure 2006

Class Simulation

- **Air warfare aspects**

Poem

For I dipt into the future, far as human eye could see,
Saw the Vision of the world, and all the wonder that would be;

Saw the heavens fill with commerce, argosies of magic sails,
Pilots of the purple twilight dropping down with costly bales;

Heard the heavens fill with shouting, and there rain'd a ghastly dew
From the nations' airy navies grappling in the central blue;

Far along the world-wide whisper of the south-wind rushing warm,
With the standards of the peoples plunging thro' the thunder-storm;

Till the war-drum throbb'd no longer, and the battle-flags were furl'd
In the Parliament of man, the Federation of the world.

There the common sense of most shall hold a fretful realm in awe,
And the kindly earth shall slumber, lapt in universal law.

- Alfred, Lord Tennyson, Locksley Hall

Poem

Oh! I have slipped the surly bonds of earth
And danced the skies on laughter-silvered wings;
Sunward I've climbed, and joined the tumbling mirth
Of sun-split clouds - and done a hundred things
You have not dreamed of - wheeled and soared and swung
High in the sunlit silence. Hov'ring there
I've chased the shouting wind along, and flung
My eager craft through footless halls of air.
Up, up the long delirious, burning blue,
I've topped the windswept heights with easy grace
Where never lark, or even eagle flew -
And, while with silent lifting mind I've trod
The high untresspassed sanctity of space,
Put out my hand and touched the face of God.

- Pilot Officer John Gillespie Magee, High Flight

(412 Squadron, RCAF, Killed 11 December 1941)

Poem

Smooth and terrible birds of death - smooth they fly, terrible their spit of flame, their hammering cry, "Here's lead in your guts."

Loads of death, tons on tons of annihilation, out of the sky and down down down on the enemies of the free world - killers with wings - dropping polished cylinders to let loose tornadoes of hell and ashes on the hideouts of the "New Order."

- Carl Sandburg, from the exhibition Road to Victory, 1942

Poem

This is a damn done natural sort of war.
The pilot sits among the clouds quite sure about the values he is fighting for.
He cannot hear beyond his veil of sound.
He cannot see the people on the ground.
He only knows that on the sloping map of sea fringed town and country people creep like ants
And who cares if ants laugh or weep.

To us he is no more than a machine shown on an instrument.
What can he mean in human terms?
A man, somebody's son, proud of his skill, compact of flesh and bone, fragile as Icarus.
And our desire, to see that damned machine come down on fire.
                    - The World at War, episode "Warrior"

Questions for Further Discussion

- **Why does the US Army have an air force? / Why does the US Navy have an air force? / Why does the US Navy's army (the Marines) have an air force?**

- **What is the experience of war like for those in the air?**

- **Can a war be won with airpower alone?**

- **Can a war be won without airpower?**

- **How can airpower play a decisive role in war?**

Reading Assignments

- **How to Make War Chapters 7,8**
- **TED Talks for this Topic**
  - **http://www.warstudiesprimer.org/ToLearnMore.html**

Recommended Reading to Learn More

- **Non-fiction**
  - **Richard Overy - The Battle**
- **Fiction**
  - **Len Deighton - Bomber**
- **Movies**
  - **Twelve O'Clock High**
- **Simulations**
  - **Flight Simulator - Google Earth**
  - **Luftwaffe - Avalon Hill**

Conclusion

"Rove your assigned airspace, spot the enemy, shoot him down, and anything else is rubbish"

- Manfred von Richthofen

Conclusion

"If we lose the war in the air we lose the war and we lose it quickly"

- Bernard Law Montgomery

Topic 11

Tom Corbett, Space Cadet
Space Warfare

Song

I know you've deceived me, now here's a surprise
I know that you have 'cause there's magic in my eyes

I can see for miles and miles and miles and miles and miles
Oh yeah

If you think that I don't know about the little tricks you've played
And never see you when deliberately you put things in my way

Well, here's a poke at you
You're gonna choke on it too
You're gonna lose that smile
Because all the while

I can see for miles and miles…

- Pete Townshend, I Can See For Miles

Thematic Quote

"The New High Ground"

- Anonymous

The Painting

In the Beginning
- Alan Bean
(Private collection)

The Question

Is control of space crucially important to the Western way of war today?

Imagine the US military not having access to space: how would it fight today?

Are space assets our new Achilles heel?

Space Missions

- **Surveillance**
  - **Imagery**
  - **Signals intelligence**
  - **Early Warning**
- **Communications**
- **Weather**
- **Mapping**
- **Navigation**
  - **GPS, GLONASS, Galileo, Compass**
- **Targeting**
  - **GPS**
  - **- Asker , James R. The National Security Nexus. AWST Mar 19/26, 2007 p. 100-104**

US Anti-Satellite Weapons

- **Project 505**
  - **1963-1966 (on alert) - US Army - Nike Zeus launcher - from Kwajalein Atoll - nuclear warhead**
- **Project 437**
  - **1964-1970 (on alert) 1970-1975 (standby) - US Air Force - Thor launcher - from Johnson Atoll - nuclear warhead**
- **Air Launched Miniature Vehicle - ASM-135**
  - **1980's-never deployed - US Air Force - F-15 launcher - from air bases - conventional warhead for kinetic kill - effective in low Earth orbit**
- **Standard SM-3**
  - **2008-present - US Navy - Aegis destroyer / cruiser launcher - from ocean - conventional warhead**

- Clayton K.S. Chun, Shooting Down a "Star" - Program 437, the US Nuclear ASAT System and Present-Day Copycat Killers

- Peter Grier, The Flying Tomato Can, Air Force, February 2009

Weaponizing Space

- **US incredibly dependent on space based resources for warfighting**
  - **Surveillance, communications, weather, mapping, navigation, targeting**
- **Could we function without them?**
- **Why don't we protect them?**

Focused Case Study: Space Assets Availability to Ground Forces

- **Gulf War I (1991)**
  - **GPS - limited**
  - **Digital battlefield - not available**
  - **Satellite imagery on battlefield - not available**
  - **Satellite communication - almost non-existent**
  - **UAVs - not available**
- **Gulf War II (2003)**
  - **GPS - pervasive**
  - **Digital battlefield - Blue Force Tracker**
  - **Satellite imagery on battlefield - limited**
  - **Satellite communication - Iridium**
  - **UAVs - pervasive**

Focused Case Study - Outsourcing Space Assets

- **Surveillance - Digital Globe, ImageSat, Spot Image**

- **Communications - Globalstar, INMARSAT, Iridium**

- **Weather - NOAA**

- **Mapping - Google Earth**

- **Navigation - GPS, GLONASS, Galileo, BeiDou (Compass)**

- **Targeting - GPS, GLONASS, Galileo, BeiDou (Compass)**

Focused Case Study: JDAM

- **JDAM**
  - **GPS guided**
    - Makes them all-weather
    - Accurate to tens of meters of aim point ~ 98% hit target
  - **Cost ~ $20,000 / bomb**
  - **Range of ~ 100 km when given wings**
  - **Impact**
    - Air power made more effective, reduced casualties, speeded up combat operations
- **US controls who can use GPS**
  - **EU, Russia, China building GPS-like systems**
- **Example of what you can achieve when you have complete air and space superiority**
  - What JDAM Hath Wrought, StrategyPage, Sept 28, 2006

Communications Case Study Summary - Global Positioning System (GPS)

- **Goal**
  - **Provide location information instantly to anyone, anytime, anywhere**
- **Center of Gravity (Strategy)**
  - **Trilateration using signals from space rather than from land**
  - **Accurate to ~ 15 meters**
- **Technology / Equipment**
  - **24 satellite constellation transmitting microwave signals**
- **Training ~ Leadership ~ Morale ~ Tactics**
  - **Ubiquitous receivers use signals from at least 3 satellites to automatically determine location, speed, direction, time**
- **Intangibles ~ Mistakes**
  - **Jamming**
  - **Can we operate without it?**
- **Outcome**
  - **Designed in 1970's ~ Tested in 1980's ~ Operational in 1990's**
  - **Ubiquitous usage for location-based services + targeting**

Personal Case Study - CAPT Laurel Clark, USN

- **Role - Astronaut**
- **Story - Business card said "Laurel Clark - Astronaut"**
  - **Gus Grissom said you are not an astronaut until you fly**
  - **Selected in 1996, flew on Columbia on STS-2007 in 2003**
    - **Functioning as a research scientist**
  - **Received astronaut wings posthumously**
- **Had the Right Stuff**
  - **Drove a BMW**
  - **Intense, driven, brave**
  - **Was Underwater Medical Officer and Flight Surgeon**

Class Simulation

- **Space warfare aspects**

Poem

Slide text

Questions for Further Discussion

- **Can a war be won with space forces alone?**
- **Can a war be won without space forces?**
- **How can space-based assets be better protected?**

Reading Assignments

- **How to Make War Chapter 19**
- **TED Talks for this Topic**
  - **http://www.warstudiesprimer.org/ToLearnMore.html**

Recommended Reading to Learn More

- **Non-fiction**
- **Fiction**
- **Movies**
- **Simulations**

Conclusion

"Lose space, loose the race"

- Michael P. D'Alessandro, M.D.

Topic 12

Information Warfare

Song

Kick 'em when they're up
Kick 'em when they're down
Kick 'em when they're stiff
Kick 'em all around

Dirty little secrets
Dirty little lies
We got our dirty little fingers in everybody's pie
We love to cut you down to size
We love dirty laundry

We can do the innuendo
We can dance and sing
When it's said and done we haven't told you a thing
We all know that crap is king
Give us dirty laundry!

- Don Henley, Dirty Laundry

Thematic Quote

"Journalism is the first draft of history..."
- Anonymous

Thematic Quote

"You furnish the pictures and I'll furnish the war"

- William Randolph Hearst

The Painting

Future Past

    - Robert Tinney

    (Byte Magazine Cover, December 1977)

The Question

Can the media lose wars?

Can wars be won using information weapons?

How will the information revolution affect the use of armed force?

The Media - Why It Is Important

"A popular government without popular information, or the means of acquiring it, is but a prologue to a farce or a tragedy, or perhaps both. Knowledge will forever govern ignorance, and a people who mean to be their own governors must arm themselves with the power which knowledge gives."

- James Madison, from a letter to W. T. Barry, August 4, 1822

...this is what Fred T. Janes was trying tell us

Battling for Hearts and Minds

- **War requires state waging war to convince its constituents that war is just, worth the cost, and worth expending lives of its constituents as well as its enemies**
  - **Particularly true in democratic government**
- **Government's ability to wage war dependent on willingness of public to support the war**
  - **Willingness of public to wage war is based on perception of that war**
  - **Perception based on information it receives**
  - **If information received is favorable, then support remains or is improved**
  - **Therefore government control over information the public receives is key to maintaining public support, in turn maintaining state's ability to wage war**

- Sam Sheikh, The Battle for Hearts and Minds, Against the Odds, Vol 3 No 2 Dec 2004

Losing the Information War In the US

- **Unfortunately today, the media is the amplifier of the trivial due to 24 hour news**

- **Look at how far we have regressed from Edward R. Murrow in World War II to today**

Losing the Information War in the World

- **Managing "friendly media" is tough**
- **The unfriendly media is unmanageable - Aljazeera**
- **Effect of Aljazeera is immense - they are winning the information war**
- **But this is even more puzzling given the Cold War**
  - **Unfriendly media was Pravda and Isvestia**
  - **Friendly media was the BBC, Voice of America, Radio Free Europe, Radio Liberty**
    - **During Russian coup in 1991, Gorbachev used BBC, Voice of America, Radio Liberty for information**

Winning the Information War

"Vaclav Havel, when he came to Washington for the first time. He was en route from Capitol Hill to the White House and they made an impromptu stop on a Saturday morning at the Voice of America. And we were out there to greet him with the members of the Czech and Slovak services, and the then director, Dick Carlson, was going to introduce the members of the service.

And he said, no, just let them speak. I'll tell you who they are. Then he got every one right, and he said, you kept me company when I was in prison."

 - Robert Koonrod, former Deputy Director of Voice of America

Cold War

- **Behind the Wall - Communism**
  - **Stupidity, Suspicion, Injustice, Corruption, Terror, Fear, Envy, Lies**
- **Beyond the Wall - Democracy**
  - **Hope, Inspiration, Joy, Dreams, Respect, Love, Benevolence, Spirit, Pride, Art, Justice, Integrity, Liberty, Dignity, Morality, Virtue, Honor, Trust, Truth, Freedom, Wisdom, Happiness, Equality, Knowledge**

- Peter Sis, The Wall: Growing Up Behind the Iron Curtain

The Long War

- **Behind the Wall - Militant Islam**
- **Beyond the Wall - Democracy**

- **What could the US send to the world that might have the same impact on Arabs + Muslims today that rock, jazz, B-movies had on Russians + Europeans in Cold War?**

- Fred Kaplan, Jazz Rock 'n' Roll and Diplomacy: Can American Culture Make Muslims Love Us?, Slate, Nov. 9, 2007

"We need to be in these social networks. This is the world according to Facebook (referring to an image). The brighter the white, the higher the concentration of Facebook users. If Facebook were a nation it would have 1.4 billion people, the largest in the world. Why is this important? It's because this is where we have to move our messages. What are our messages? They're pretty good ones. It's democracy, liberty, freedom of speech, freedom of assembly, gender equality, racial equality. We execute them imperfectly but we need to move those messages because I assure you the Islamic State is crushing us in these social networks, moving their messages of hatred and bigotry and dominance. This image is also the command and control network for the Islamic State. We need to be in it. Because let me tell you something, it's not a war of ideas, it's a marketplace of ideas, we have to sell our ideas in this world."

- Admiral James Stavridis, talk to the Pritzker Military Museum and Library July 31, 2015

The Media Today

- **Looking for exciting stories that lead to higher ratings**
  - **Leads to accentuating the negative, downplay the positive**
- **Establishing the truth is getting harder due to digital image manipulation**
- **Troops can call and e-mail home directly with little censorship**
  - **Families have a better idea of what is going on then general public**

The Media's Different From You and Me

- **American reporters harbor class prejudice**
  - **They have intimate relationship with constituencies they study - politicians, diplomats, business people, academics, etc.**
  - **Why can't they have intimate relationship with military-why does embedding strike raw nerve?**
    - **The reporters are elite and cosmopolitan; military are mass of citizens and are nationalists**
  - **Therefore it's hard for reporters to connect with military**
  - **Embedding offers reporters chance to reconnect with society they claim to be part of**
    - **Robert Kaplan, The Media and the Military, The Atlantic, November 2004**

From Russia With Information

"The most amazing information warfare blitzkrieg we have ever seen in the history of information warfare."

- General Philip Breedlove, NATO's Supreme Allied Commander Europe, on Russia's use of information warfare in the Ukraine

"The new Russia doesn't just deal in the petty disinformation, forgeries, lies, leaks, and cyber-sabotage usually associated with information warfare. It reinvents reality, creating mass hallucinations that then translate into political action."

"In today's Russia, by contrast, the idea of truth is irrelevant. On Russian 'news' broadcasts, the borders between fact and fiction have become utterly blurred…The notion of 'journalism,' in the sense of reporting 'facts' or 'truth,' has been wiped out."

"We should give students a clear understanding: They are going to work for The Man, and The Man will tell them what to write, what not to write, and how this or that thing should be written. And The Man has the right to do it, because he pays them."

- Alexei Volin, Russia's deputy minister of communications

"The point of this new propaganda is not to persuade anyone, but to keep the viewer hooked and distracted-to disrupt Western narratives rather than provide a counternarrative. It is the perfect genre for conspiracy theories, which are all over Russian TV…Now Russia is exporting its reality-reinventing model through the hundreds of millions of dollars that it spends on international broadcasters like the rolling, multilingual news channel RT (Russia Today)…We're rendered stunned, spun, and flummoxed by the Kremlin's weaponization of absurdity and unreality."

- Peter Pomerantsev, Russia and the Menace of Unreality, The Atlantic, Sept 2014

Information Warfare - Russian Style

The deployment of information weapons, "acts like an invisible radiation" upon its targets: "The population doesn't even feel it is being acted upon. So the state doesn't switch on its self-defence mechanisms." If regular war is about actual guns and missiles, "information war is supple, you can never predict the angle or instruments of an attack."

- Information-Psychological War Operations: A Short Encyclopedia and Reference Guide

- **Psychosphere - Russian vision of future wars that would be fought not on the battlefield but in minds of men**
  - It is now possible to defeat enemies through a "combination of political, economic, information, technological, and ecological campaigns".
    - Valery Gerasimov, Head of the General Staff of the Armed Forces of the Russian Federation
- **Information operations no longer auxiliary to some physical struggle or military invasion: is an end in itself**
  - "Information war … is in many places replacing standard war."
    - Information-Psychological War Operations: A Short Encyclopedia and Reference Guide
- **Reflexive control**
  - Guiding tactical concept in Russian information war ~ Involves giving opponent specially prepared information to incline him voluntarily to make the predetermined decision desired by the initiator of the action
    - Peter Pomerantsev, Inside the Kremlin's Hall of Mirrors, The Guardian, Apr. 9, 2015

Information Warfare - Russian Style

- Premise of liberal journalism is that if it presents better arguments and stronger evidence, it should win the debate
- Mantra of RT - "There is no such thing as objective reporting."
  - Dedicated to proposition that after notion of objectivity has evaporated, all stories are equally true
  - Ultimate effect is to suggest all media organizations are equally untrustworthy
  - Conspiratorial stories on RT similar to "active measures" of KGB dedicated to subversion + driving wedges in NATO + weakening US
  - Overall aim not to establish alternative truths but to spread confusion about status of truth

"Taken together, all these efforts constitute a kind of linguistic sabotage of the infrastructure of reason: if the very possibility of rational argument is submerged in a fog of uncertainty, there are no grounds for debate - and the public can be expected to decide that there is no point in trying to decide the winner, or even bothering to listen."

- Mindset that Russia's information warfare seems intended to encourage is well-suited to European citizens today
  - Reality can be reinvented.
  - Journalists taught to report both sides - How do you combat someone who makes stuff up?
  - Left with vision of a future inundated by disinformation, where no argument could ever be won and no view had more authority than any other.

  - Peter Pomerantsev, Inside the Kremlin's Hall of Mirrors, The Guardian, Apr. 9, 2015

Information Warfare - Russian Style
Democratic National Committee Hack by FSB + GRU

"Nine days later, on July 22, just after Trump was officially nominated and before the Democratic National Convention got under way, Wikileaks published more than 19,000 DNC emails with more than 8,000 attachments...Two days later, on July 24, Debbie Wasserman Schultz, chair of Democratic National Committee, announced her resignation-the extraordinary hack and leak had helped force out the head of one of America's political parties and threatened to disrupt Hillary Clinton's nominating convention.

This tactic and its remarkable success is a game-changer: exfiltrating documents from political organizations is a legitimate form of intelligence work. The US and European countries do it as well. But digitally exfiltrating and then publishing possibly manipulated documents disguised as freewheeling hacktivism is crossing a big red line and setting a dangerous precedent: an authoritarian country directly yet covertly trying to sabotage an American election."

- Thomas Rid, All Signs Point to Russia Being Behind the DNC Hack, Motherboard, July 25, 2016

Information Warfare - Russian Style
Fake News

- **Russian propaganda campaign in 2016 election created + spread fake news articles online with goal of punishing Hilary Clinton, helping Donald Trump + ultimately undermining faith in American democracy**

  "They want to essentially erode faith in the U.S. government or U.S. government interests. This was their standard mode during the Cold War. The problem is this was hard to do before social media."

  - Clint Watts

  "The way this propaganda apparatus supported Trump was equivalent to some massive amount of a media buy. It was like Russia was running a super PAC for Trump's campaign…It worked."

  - Anonymous executive director of PropOrNot

  "They use our technologies and values against us to sow doubt. It's starting to undermine our democratic system."

  - Robert Orttung

- Craig Timberg, Russian Propaganda Effort Helped Spread 'Fake News' During Election, Experts Say, Washington Post, Nov. 24, 2016

Hybrid Warfare
The Gerasimov Doctrine

"In the 21st century, we have seen a tendency toward blurring the lines between the states of war and peace...Wars are no longer declared and, having begun, proceed according to an unfamiliar template." (That template consists of the) "use of special-operations forces and internal opposition to create a permanently operating front through the entire territory of the enemy state, as well as informational actions, devices, and means that are constantly being perfected."

- Valery Gerasimov (Chairman of the Russian General Staff), The Value of Science Is In The Foresight: New Challenges Demand Rethinking the Forms and Methods of Carrying Out Combat Operations, Voyenno-Promyshlennyy Kurier (Military-Industrial Courier), February 2013

Hybrid Warfare
The Gerasimov Doctrine

- A strategy for war involving military, technological, media, political, and intelligence tactics can destabilize an enemy at minimal cost

- War will be fought with a four-to-one ratio of nonmilitary to military measures

- Nonmilitary measures include efforts to shape political + social landscape of adversary through subversion, espionage, propaganda, and cyberattacks

- When subjected to such measures, a "perfectly thriving state can, in a matter of months, and even days, be transformed into an arena of fierce armed conflict, become a victim of foreign intervention, and sink into a web of chaos, humanitarian catastrophe, and civil war."

- "The role of nonmilitary means of achieving political and strategic goals has grown, and, in many cases, they have exceeded the power of force of weapons in their effectiveness."

- Valery Gerasimov (Chairman of the Russian General Staff), The Value of Science Is In The Foresight: New Challenges Demand Rethinking the Forms and Methods of Carrying Out Combat Operations, Voyenno-Promyshlennyy Kurier (Military-Industrial Courier), February 2013

-Evan Osnos, David Remnick, Joshua Yaffa, Trump, Putin and the New Cold War, New Yorker, Mar. 6, 2017

Information Warfare - Chinese Style

Summary of speeches delivered at the May 1996 founding ceremony for Beijing's new Military Strategies Research Center, published in the Chinese army newspaper, Jiefangjun Bao:

"After the Gulf War, when everyone was looking forward to eternal peace, a new military revolution emerged. This revolution is essentially a transformation from the mechanized warfare of the industrial age to the information warfare of the information age. Information warfare is a war of decisions and control, a war of knowledge, and a war of intellect. The aim of information warfare will be gradually changed from 'preserving oneself and wiping out the enemy' to 'preserving oneself and controlling the opponent.' Information warfare includes electronic warfare, tactical deception, strategic deterrence, propaganda warfare, psychological warfare, network warfare, and structural sabotage.

Under today's technological conditions, the 'all conquering stratagems' of Sun Tzu more than two millennia ago - 'vanquishing the enemy without fighting' and subduing the enemy by 'soft strike' or 'soft destruction' - could finally be truly realized."

- John Carlin, A Farewell to Arms, Wired, May 1997

Case Study Summary - Vietnam 1968-1972

- **Goal**
  - **Guarantee security of South Vietnam**
- **Center of Gravity (Strategy)**
  - **Establish village security**
  - **Root out enemy infrastructure - disrupting its logistics + destroying prepositioned supplies**
  - **Train South Vietnamese military, regional, provincial forces**
- **Equipment**
- **Training**
- **Leadership**
  - **General Creighton Abrams - excellent**
  - **- James Schlesinger, Where Myth Trumped Truth, Wall Street Journal, March 18, 2005**

"Digital-video technology, precisely because it is given to manipulation, is inherently controlling. Think of how the great film directors of the 20th century were able to take over your mind for a few hours: a new experience for audiences that previous generations had never known. Theater may be as old as the ancient Greeks, but the technology of film lent a new and powerful force to the theatrical experience. Moreover, it was contained within a limited time period, and afterward you came back to the real world.

In the 21st century, dictators may have the capability to be the equivalent of film directors, and the show never stops. Indeed, Joseph Goebbels would undoubtedly thrive in today's world. As for warfare itself, it will be increasingly about dividing and demoralizing enemy populations through disinformation campaigns whose techniques are still in their infancy."

- Robert D. Kaplan, *Everything Here is Fake*, Washington Post, March 2, 2018

"The Chinese, eventually with the help of big data, are working on following the Internet searches of their citizens, and then determining who needs to be singled out for further observation. If a government or a company knows the destination and sequence of all of your searches, it is virtually inside your mind. The possibilities are frightening, and the vistas for oppression unbounded."

- Robert D. Kaplan, Everything Here is Fake, Washington Post, March 2, 2018

"The digital age, originally sold to us as empowering, could yet become the greatest threat to free thought and democracy in history. The very idea of something going viral is an expression of the mob more than of the individual. The fact that Google partially ranks search results in terms of how many other sites have linked to them reinforces groupthink, not individuality. The entire logic of the Web works toward popularity, not quality, and certainly not toward truth."

- Robert D. Kaplan, *Everything Here is Fake*, Washington Post, March 2, 2018

Case Study Summary - Vietnam 1968-1972

- **Morale**
  - **Tet portrayed by media as defeat when it really was victory**
- **Tactics**
- **Intangibles**
  - **US intelligence improved**
  - **North Vietnamese offensives fizzle ~ War essentially won by US in 1972**
  - **Home side support declines due to antiwar movement, undermining political will, leading to Congress to cut funds to South Vietnam**
  - **Outside forces = umpires, which undercut military's efforts**
    - **Umpires = press, negotiations in Paris, Congress**
  - **James Schlesinger, Where Myth Trumped Truth, Wall Street Journal, March 18, 2005**

Case Study Summary - Vietnam 1968-1972

- **Mistakes**
  - **Don't let war go on so long that Congress + public support dwindles**
  - **Don't make cheery public statements that lead to false expectations**
  - **Don't necessarily believe press accounts of how well or badly the war goes**
- **Outcome**
  - **South Vietnam fell after withdrawal of US forces, after Congress prohibited any use of military forces in Indochina, after Congress cut aid to South Vietnam, after an invasion by North Vietnam and the US refused to give air support to South Vietnam**

  - James Schlesinger, Where Myth Trumped Truth, Wall Street Journal, March 18, 2005

Focused Case Study - Embedding in the 21st Century With the US Cavalry

- **Walter Rodgers, experienced CNN international and war correspondent**
  - Afghanistan, Lebanon, old Soviet Union, Balkans, West Bank; his driver was ex-Australian SAS in Rwanda, his cameraman was ex-British Army; his engineer had been in Somalia
- **Embedded with Apache Troop, 3rd Squadron, 7th Cavalry, 3rd Infantry Division in march towards Baghdad in March/April 2003**
- **Equipped with Humvee with videophone + satellite dish for live coverage**
- **Would come on air at 9pm EST, transmitted live for hours each night - I would watch it and see "What's on the war tonight?"**
- **He was inside the unit's bubble and allowed an extraordinary insider's view of modern military unit's activities of daily living - combat + maintenance - Kiowa's scouting ahead, cleaning tanks, singing Gary Owen, sandstorms and the fog of war**

- Walter Rodgers, Sleeping with Custer and the 7th Cavalry: An Embedded Reporter in Iraq, 2005

Focused Case Study -
Embedding in the 21st Century With the US Cavalry

- **Unit was at tip of the spear, in continuous combat for 2-3 weeks, scouting towards Baghdad**

- **He owed his life to them - they took care of him - but he took care of them**
  - **His protector was Captain Clay Lyle, the troop commander, who eventually won a Silver Star**

- **His opinion of the experience at the time:**
  - **"I am generally having a good time, and it is a lot of fun." - p.113**

- **In retrospect, felt he was "profoundly humble and grateful to be alive"**
  - **"Embedding was extraordinarily dangerous, and in the next war, they should expect many, many more journalists to die" - p. 190**

- **He applauded the access he had to the 7th Cavalry and felt the reason it all worked was the trust between himself and the Cavalry commanders**

- Walter Rodgers, Sleeping with Custer and the 7th Cavalry: An Embedded Reporter in Iraq, 2005

Focused Case Study - Al Jazeera - July 4, 2006

- **Logo**
  - **Gold logo in beautiful calligraphy rises out of blue ocean and then is placed against lapis background**
- **Ads**
  - **Qatar National Bank, Qatar Telecom**
  - **Sony - A Western-looking Arab family using Sony products (wife is not veiled)**
- **Shows**
  - **News with anchor from The Control Room**
  - **The Corporation - documentary**
  - **Special on 1 year anniversary of London bombings**
  - **Muslims in Africa - documentary**
  - **Hamas / Hezbollah training documentary-"You Are There"**
- **Overall**
  - **The world from the Arab point of view - reinforces and fuels their beliefs - must fill them with pride**

"Beware of Geeks when bearing gifts"

- Anonymous

Cyber War

"When we think about cyber, we need to reflect on the Greek root of the word, 'kybernan,' which means to control or to govern.

When I was working for Central Command in the last Gulf War, it became very apparent to me that our biggest advantages come from what we knew and what our opponent didn't…It occurred to me…that much of what we did could have been held hostage to the disruption of any of those information systems. That was the beginnings of cyber war - the idea that the vulnerability of communications could cripple an advanced army. What made it strong also made it weak.

Then it was only a baby step from there to think about this happening across our entire society, commercially and socially. The crippling of information systems could have profound disruptive effects. What made that thought even more chilling was the notion that this power existed in the hands of a few hackers."

- John Arquilla

Cyber War

"When I think about cyberspace-based warfare, I think about air power. Eighty years ago, the great theorists of air power thought about having the ability to attack another society from the air without having to engage their armies or fleets first. Cyber warfare has some of those elements too...So it is a form of strategic bombardment. ...

I take heart from the notion that, in the eight decades or so of strategic aerial bombardment, their campaigns have almost never worked. It says to me that cyber bombardment campaigns are probably not likely to work either.

Now, both physical bombing and cyber bombing will have great costs associated with them, but I don't think a people will fold under that kind of pressure."

   - John Arquilla

Netwar

"Netwar is the lower intensity, societal level counterpart to our earlier, mostly military concept of cyber war. Netwar has a dual nature, like the two-faced Roman god Janus, in that it is composed of conflicts waged, on the one hand, by terrorists, criminals and ethnonationalist extremists; and by civil-society activists on the other. What distinguishes netwar as a form of conflict is the networked organizational structure of its practitioners - with many groups actually being leaderless - and the suppleness in their ability to come together quickly in swarming attacks. The concepts of cyber war and netwar encompass a new spectrum of conflict that is emerging in the wake of the information revolution."

- John Arquilla and David Ronfeldt, The Advent of Netwar

Netwar

"The most potent netwarriors will not only be highly networked and have a capacity to swarm, they will also be held together by strong social ties, have secure communications technologies, and project a common 'story' about why they are together and what they need to do. These will be the most serious adversaries. But even those networks that are weak on some levels (e.g. technological) may pose stiff challenges to their nation-state adversaries. With this in mind it is necessary to go beyond just diagnosing the nature of the networked nonstate opponent in a given conflict. It will become crucial for governments and their military and law enforcement establishments to begin networking themselves. Perhaps this will become the greatest challenge posed by the rise of netwar."

- John Arquilla and David Ronfeldt, The Advent of Netwar

The Weaponization of Social Media

"The internet has long been celebrated for its power to bring people together. Yet as it turns out, this same technology is easily weaponized. Smartphones and social apps have clearly altered the nuts and bolts of violent conflict, from recruiting to battlefield reporting. But the greatest effects may be more fundamental, expanding the causes and possibly the incidence of war, and extending its reach. Social-media platforms reinforce "us versus them" narratives, expose vulnerable people to virulent ideologies, and inflame even long-dormant hatreds. They create massive groundswells of popular opinion that are nearly impossible to predict or control.

Social media has already revolutionized everything from dating to business to politics. Now it is reshaping war itself."

- Emerson Brooking and P.W. Singer, War Goes Viral, The Atlantic, Nov. 2016

The Weaponization of Social Media

- ## The Dream

  "The knowledge relayed by the telegraph would make nations so conversant with the national interests of their one-time enemies that war would come no more."

  - Johanna Neuman, historian

- ## The Reality

  "Indeed, the more we've learned about behavior on social media, the more apparent it has become that the mirror is distorted-or rather, that it distorts us. For all the hope that comes from connecting with new people and new ideas, researchers have found that online behavior is dominated by "homophily": a tendency to listen to and associate with people like yourself, and to exclude outsiders. Social networks are bad at helping you empathize with people unlike you, but good at surrounding you with those who share your outlook. The new information ecosystem does not challenge biases; it reinforces them.

  - Emerson Brooking and P.W. Singer, War Goes Viral, The Atlantic, Nov. 2016

The Weaponization of Social Media

"All of these [information warfare] efforts share the same two broad objectives. The first is to overwhelm the state's adversaries, be they foreign or domestic, with misinformation: to challenge the very basis of their reality. But the second is just as important: to mobilize their own citizens and supporters and bind them to the state. The power of social media is used to intensify nationalism and demonize the enemy. In this strategy, homophily is not something to be feared or avoided. It is the goal.

The combination of untruth and homophily-set against a global battle of competing narratives-hints at a dark future. A world without facts, cleanly segregated by ideology and national allegiance, will be a more dangerous one. Such cynical use of the internet not only threatens to keep people in a perpetual state of mistrust; it may also increase the likelihood of conflict itself."

- Emerson Brooking and P.W. Singer, War Goes Viral, The Atlantic, Nov. 2016

Social Media is Shaking the Globe

"It's time to start recognizing that social networks actually are becoming the world-shattering forces that their boosters long promised they would be - and to be unnerved, rather than exhilarated, by the huge social changes they could uncork.

This should come as no surprise. In a way, we are now living through a kind of bizarro version of the utopia that some in tech once envisioned would be unleashed by social media."

"Thanks to the internet, now each person with once-maligned views can see that he's not alone. And when these people find one another, they can do things - create memes, publications and entire online worlds that bolster their worldview, and then break into the mainstream."

- Farhad Manjoo, Social Media's Globe-Shaking Power, New York Times, Nov. 17, 2016

Cyber War is Open Source Warfare

- **Fought by civilians for nationalism, revenge, fun**
  - **Messy, chaotic, impossible to control**
- **Benefits**
  - **Deniability**
  - **Huge talent pool**
  - **Access to best resources / weaponry**
- **US approach**
  - **Confused, failed attempt at centralization**
- **Russian + Chinese approach**
  - **Open source warfare**
    - **Engage, co-opt, protect criminals**
    - **Seed the movement**
    - **Get out of the way**

- John Robb, Open Source Warfare: Cyberwar, Global Guerillas, Aug. 15, 2008

Information Operations / Electronic Attack

- **Started as jamming of sensors and communications**
  - **Listening to them**
  - **Turning them off**

Information Operations - Computer Attack

- **Has evolved into penetration of sensor and communication networks**
  - **Listening to them**
  - **Turning them off**
  - **Inserting spurious information into them**
  - **Sowing confusion in their ranks**
- **Used in Kosovo, Afghanistan, Iraq**
- **Amongst most highly classified programs in USAF**

High Powered Microwave Weapon (HPM)

- **Based on electromagnetic pulse generated by nuclear weapons**
- **Generates blast of electromagnetic waves in microwave frequency band that overloads electrical circuitry, particularly in computer chips**
  - **Can destroy integrated circuits**
  - **Can produce standing waves in electrical wiring and communications wiring**
  - **Can immobilize vehicles with electronic ignition and control systems**
- **The US is most vulnerable to these weapons**
  - **How do you protect yourself from side effects?**
  - **Imagine the US military not having access to chips**

- Michael Abrams, The Dawn of the E-Bomb, IEEE Spectrum, Nov 2003

Deception

"All warfare is based on deception"
- Sun Tzu

"Going by routes they do not expect, attacking where they are not on guard"
- Sun Tzu

Deception

- **What and why**

  "Everything done to manipulate the behavior of the other side, without their knowledge of the friendly intent, for the purpose of achieving and exploiting an advantage is deception. The 'what' of deception is the manipulation of behavior. The 'why' is to exploit the advantage achieved."

  - Fred Feer, Thinking About Deception

Effects Based Operations

"In Effects-Based Operations the objective is not always destruction of the enemy. It may be to gain a specific strategic or tactical result, such as deterring, neutralizing, or halting the enemy force."

- John Correll, What Happened to Shock and Awe?, Air Force Magazine, Nov 2003

Effects-based Operations in History

- **1942 Doolittle Raid on Japan**
- **1968 Tet Offensive in Vietnam**
- **1983 Beirut bombing of US Marine barracks**
- **1993 Somalia Battle of Mogadishu / Blackhawk Down**
  - **Kenneth Watman, Global 2000, Naval War College Review, Spring 2001**

Focused Case Study -
Effects Based Operations in Serbia

- **Cause rapid economic death of Serbia**
- **Target inner circle / cronies of Milosevic**
- **Tell them what is going to happen, when it is going to happen, watch them when it happens**
- **Make them put pressure on him to back down in Kosovo**

  - William Arkin, The Other Kosovo War, MSNBC Aug 29, 2001

Focused Case Study - Effects Based Operations in Gulf War II

- **Everything from Gulf War I plus…**
- **Prewar recruitment of Iraqi officers to not fight by cell phone, satellite phone, FAX, special forces**
- **Betrayals driven by bribery led to lack of organized resistance**
  - **- Ed Harriman, Treachery: How Iraq Went to War Against Saddam, The Times, Jan 11, 2004**

Focused Case Study - Effects Based Operations in Gulf War II

- **…but the hope was they would join the coalition's side and aid in the post war transition as transitional leaders…**

- **Blowback: …but they and their troops melted away…to reemerge as the insurgency**

  - **David Ignatius, Saving Project Iraq, Washington Post, June 17, 2005**

Cyber Smoke and Mirrors

- **Cyber war has never happened in the past**
  - **What would constitute cyber war: potentially lethal, instrumental, political act of force conducted through malicious code**

- **Cyber war does not take place in the present**
  - **Not one single cyber offense on record constitutes act of war on its own**

- **It is unlikely that cyber war will occur in the future**
  - **All politically motivated cyber attacks are merely sophisticated versions of three activities as old as warfare itself: sabotage, espionage, subversion**

- Thomas Rid, Cyber War Will Not Take Place, The Journal of Strategic Studies, Feb 2012
- Thomas Rid, Why A Cyberwar Won't Happen, New Scientist, Sept. 9, 2013

Focused Case Study - The First Cyber Attack

- First national data network was in 1790's France, based upon wooden armed mechanical telegraphs in chains of towers criss-crossing the country

- Network was reserved for government use, could send messages from one end of France to the other in minutes

- In 1834, two bankers who traded government bonds in Bordeaux - Francois and Joseph Blanc - hacked the network

- Information on market movements took several days to arrive in Bordeaux from Paris by mail coach

- Bribed telegraph operator in Tours, halfway between Paris and Bordeaux to introduce deliberate errors - a spurious character indicating the direction of the previous day's market movement followed by a backspace - into routine government messages

- These errors were transmitted along the line, and seen by an accomplice who observed the Bordeaux telegraph tower with a telescope, but they were not written down in the final message

- Worked for two years before Tours telegraph operator became ill, confessed the scheme to his replacement hoping to co-opt him, and was turned in

- All were tried but not convicted as there was no law against misuse of data network

- Tom Standage, The Crooked Timber of Humanity, 1843, Oct./Nov. 2017

Focused Case Study - The First Cyber Attack

- **Timeless lessons**
  - **Network intrusions often go unnoticed for many years, many are never detected**
    - **Most attackers do not advertise their presence**
  - **Security is a chain and humans are always the weakest link**
    - **Focusing on security as a technological challenge misses the point that it also depends on setting the right social + economic incentives**
  - **Network attacks are as old as networks themselves**
    - **People always find a way to make malicious use of any new invention**

- Tom Standage, The Crooked Timber of Humanity, 1843, Oct./Nov. 2017

Computing Case Study Summary - Cuckoo's Egg

- **Goal**
  - **Hacker - steal military secrets ~ Clifford - catch hacker**
- **Center of Gravity (Strategy)**
  - **Hacker - break into military computers ~ Clifford - honey pot**
- **Technology / Equipment**
  - **Hacker - PC + dialup modem ~ Clifford - VAX computer + trace backs**
- **Training**
  - **Hacker - self taught ~ Clifford - self taught**
- **Leadership + Morale**
  - **Hacker - considers himself elite ~ Clifford enraged someone would break into his computer and use its resources - wants to get his man - pursues him over 10 months**
- **Tactics**
  - **Hacker - brute force attacks using known security weaknesses on Lawrence Berkeley Laboratory computers + 450 others of which 30 were entered ~ Clifford - honey pot + call tracing**

- Clifford Stoll, Stalking the Wily Hacker, Communications of the ACM, May 1988

Computing Case Study Summary - Cuckoo's Egg

- ## Intangibles

  "Break-ins ultimately destroy the network connectivity they exploit…It is an understandable response to lock the door, sever connections, and put up elaborate barriers. Perhaps this is necessary, but it saddens the author, who would rather see future networks and computer communities built on honesty and trust." - Clifford Stoll

- ## Mistakes

  - Hacker should have attacked Lawrence Livermore National Laboratory which does classified research

  - Hacker created unauthorized account which led to accounting error which led to his detection

  - No agency in US has jurisdiction over this in 1986, therefore no one interested in helping Clifford

- ## Outcome

  - First scientifically documented case of pursuit of + catching a hacker ~ enlightened and raised awareness of security issues

  - Hacker (Markus Hess) was a German working for KGB, was convicted of espionage

  - Clifford Stoll, Stalking the Wily Hacker, Communications of the ACM, May 1988

Focused Case Study - Fumbling the Future

- **Xerox PARC invented the future of computing, Xerox Inc. fumbled it**
  - **Personal computer (Alto)**
  - **Window Icon Menu Pointing Device interface (WIMP) + WYSIWYG editing**
  - **Laser printer**
  - **Local area network (Ethernet)**
  - **- Douglas K. Smith, Fumbling the Future: How Xerox Invented, Then Ignored the First Personal Computer**

Focused Case Study - Fumbling the Future

- **Xerox PARC invented future of warfare, Xerox Inc. fumbled it**

  "The "worm" programs were an experiment in the development of distributed computations: programs that span machine boundaries and also replicate themselves in idle machines. A "worm" is composed of multiple "segments," each running on a different machine. The underlying worm maintenance mechanisms are responsible for maintaining the worm, finding free machines when needed and replicating the program for each additional segment. These techniques were successfully used to support several real applications, ranging from a simple multi-machine test program to a more sophisticated real-time animation system harnessing multiple machines."

  - John F. Shoch and Jon A. Hupp, The "Worm" Programs Early Experience With a Distributed Computation, Xerox Palo Alto Research Center, 1982

Computing Case Study Summary - The First Covert Cyber Attack? (1982)

- **Goal**
  - **Cripple Soviet natural gas pipeline from Siberia to Europe that would make Europe energy dependent on Soviet Union and whose profits will fund Soviet computer R&D**
- **Center of Gravity (Strategy)**
  - **Allow Soviets to covertly procure software for programmable logic controllers to automate pipeline**
- **Technology / Equipment ~ Training ~ Leadership ~ Morale**
- **Tactics**
  - **Software was designed to make pumps, turbines, valves go haywire**
- **Intangibles ~ Mistakes**
- **Outcome**
  - **Largest non-nuclear explosion and fire ever seen from space (3 kilotons) destroyed pipeline**
  - **Caused Soviets to suspect all other software they had covertly obtained**
  - **27 years before Stuxnet**
  - **…Russia now dominant supplier of natural gas to Europe**

- William Safire, The Farewell Dossier, New York Times, Feb 2, 2004

Computing Case Study Summary - Robert Morris Internet Worm

- **Goal**
  - **Measure the size of the Internet**
- **Center of Gravity (Strategy) + Technology / Equipment**
  - **Utilize self-replicating + self-propagating program (worm)**
- **Training + Leadership + Morale**
  - **Graduate student in computer science at Cornell**
- **Tactics**
  - **Exploited know bugs in BSD Unix sendmail program + finger daemon**
- **Intangibles**
  - **Father was Chief Scientist at NSA's National Computer Security Center**
  - **- Eugene H. Spafford, The Internet Worm - Crisis and Aftermath, Communications of the ACM, June 1989**

Computing Case Study Summary - Robert Morris Internet Worm

- **Mistakes**
  - **Bug in the worm caused it to replicate + reinfect machines at a faster than intended rate causing computers to become catatonic**
  - **Circulated anonymous fix but no one received it because system administrators unplugged computers from Internet to protect them (quarantine)**
- **Outcome**
  - **First attack upon Internet - evening of November 2, 1988**
  - **Sendmail + finger bugs discovered and patches issued within 1 day by Unix "old-boy" network ~ some computers took 1 month to fix**
  - **Led to founding of Computer Emergency Response Team (CERT)**
  - **Convicted of violating Computer Fraud and Abuse Act**
  - **Now a professor at MIT**
  - **- Eugene H. Spafford, The Internet Worm - Crisis and Aftermath, Communications of the ACM, June 1989**

Why is the Internet so Insecure?

- **Telephone network had intelligent core (switches) and dumb edges (handsets)**
- **Internet had dumb core (data carrying network) and intelligent edges (computers controlled by users)**
  - **Dumb core offered few opportunities for centralized security but made it easy for new users to join**
  - **Intelligent edges must be controlled by people with shared motives + high degree of trust as edges served as gatekeepers to network**
- **Internet's architects never imagined anyone would be able to use / misuse it**
  - **"It's not that we didn't think about security. We knew there were untrustworthy people out there, and we thought we could exclude them." - David Clark, computer scientist**
- **1988's Morris Worm attack on the Internet was wakeup call for Internet's architects but it was too late because the idealists who created it were no longer in charge - no one was**
  - **"People don't break into banks because they're not secure. They break into banks because that's where the money is. They (the Internet's architects) thought they were building a classroom, and it turned into a bank." - Janet Abbate, historian**
- **Morris worm revealed the downside of a network with a dumb core + intelligent edges, which pushes security to edge of network, which is where vast majority of hacks occur today**
- **Morris worm also showed how difficult it is to fix problems once they are widely know - buffer overflow bug it exploited is still used by hackers today**
  - **- Craig Timberg, Net of Insecurity, Washington Post, May 30, 2015**

Computing Case Study Summary - The First Military Cyber Attack? (1991)

- **Goal**
  - **Cripple Iraq's command and control system before beginning of 1991 Persian Gulf War**
- **Center of Gravity (Strategy)**
  - **Launch cyber attacks against key government + military systems in Iraq**
- **Technology / Equipment ~ Training**
  - **Unknown**
- **Leadership**
  - **Robert Morris, Chief Scientist of the NSA (and father of Robert Morris of Internet Worm fame)**
- **Morale ~ Tactics**

  Unknown
- **Intangibles ~ Mistakes**
  - **Like father like son?**
- **Outcome**
  - **Classified but assumed to be successful**

- Samuel Greengard, Robert Morris 1932-2011, Communications of the ACM, Sept 2011 p. 17

Computing Case Study Summary - Virtual Hospital DDOS Attack in ~ 2000

- **Goal**
  - **Take Virtual Hospital off the Internet to get even with it for some imagined slight**
- **Center of Gravity (Strategy)**
  - **Distributed denial of service attack**
- **Technology / Equipment ~ Training ~ Leadership ~ Morale**
  - **Unknown who the attack was from - the La Leche League?**
    - **Virtual Hospital had a lot of "enemies"**
- **Tactics**
  - **Attack used low level chronic DDOS**
  - **No blocking defense was ever deployed as it was not worth the effort**
- **Intangibles ~ Mistakes**
  - **Was at such a low level it never effected operation of site**
- **Outcome**
  - **Attack did consume bandwidth, but bandwidth through University was free**
  - **For Virtual Hospital the attack became cost of doing business**
    - **Learned to live with it - unsure when it began + ended - became noise**

Computing Case Study Summary - Virtual Naval Hospital

- **Goal**
  - **US - Use digital library technology to make medical reference information easily available to military medical personal regardless of their location + Internet access speed**
  - **China - Make sure that the digital library does not disappear from Web**
- **Center of Gravity (Strategy)**
  - **China - Make their own copy**
- **Technology / Equipment + Tactics**
  - **US - Linux + Apache Web server + CD-ROM mirrors**
  - **China - Webcrawler robot**
- **Intangibles**
  - **All medical reference information individually in public domain but organization + synthesis of it increases its value tremendously**

Computing Case Study Summary - Virtual Naval Hospital

- **Mistakes**
  - **Chair of Department of Military Medical Services at Second Military Medical University in Shanghai (Chinese People's Liberation Army's medical school) requests CD-ROM copy of site, sent in December 1999**
  - **September 2002, as US gears up to attack Iraq, Web site is crawled by a robot from Chinese International Book Trading Corporation in Beijing, accounting for 50% of traffic to site that month**
  - **November 2002, unauthorized mirror of site appears at Campus Medical University in Beijing**
- **Outcome**
  - **Unauthorized mirror of site remains on Web after Virtual Naval Hospital decommissioned in January 2006**
  - **Bottom line - coincidence or conspiracy?**

Computing Case Study Summary - Russia vs. Estonia Cyber War - April 27 - May 29, 2007

- **Goal**
  - **Russia - punish Estonia for relocation of war memorial**
  - **Estonia - preserve E-stonia**
- **Center of Gravity (Strategy)**
  - **Russia - Cut Estonia off the network**
  - **Estonia - Preserve network infrastructure**

  "These attacks were an attempt to take one country back to the cave, back to the stone age"
- **Technology / Equipment**
  - **Russia - botnets around world consisting of 1 million personal computers - generate 400 times normal Internet traffic**

  - Joshua Davis, Web War I, Wired, Sept 2007

Computing Case Study Summary - Russia vs. Estonia Cyber War - April 27 - May 29, 2007

- **Training / Leadership / Morale**
  - **Russia - black hat hackers knowledgeable with high morale**
  - **Estonia - white hat hackers very knowledgeable**
- **Tactics**
  - **Russia - Massive / targeted / organized distributed denial of service attacks which targeted Estonian government, banks, telecommunication providers, Internet service providers, news organizations, schools**
  - **Estonia - Computer Emergency Response Team (CERT) was centralized with authority to defend country - set up fire walls, then blocked all traffic from .ru, then blocked all traffic from outside Estonia**
    - **CERT leader socially networked with the Vetted who control the world's 13 root DNS servers to selectively kick rogue computers running botnets off Internet**
    - **- Joshua Davis, Web War I, Wired, Sept 2007**

Computing Case Study Summary - Russia vs. Estonia Cyber War - April 27 - May 29, 2007

- **Intangibles / Mistakes**
  - Plausible deniability due to anonymity of attacks
  - "In the 21st century, the understanding of a state is no longer only its territory and its airspace, but also its electronic infrastructure."
  - "If you have a missile attack…it is an act of war…If the same result is caused by computers, then how else do you describe that kind of attack?"
- **Outcome**
  - Is an effects-based operation
  - Is a systems disruption whose aim is to disrupt target society, leaving it unable to function as modern country
  - Is designed to harm, scare, leave no visible imprint, be instantly reversible, not kill anyone
  - Is efficient + without collateral damage, causes massive panic on shoestring budget, tough to catch perpetrators
  - Creates no uproar, results in no economic sanctions, doesn't seem to be real form of warfare
    - NATO did not regard it as an armed attack on a member state that needed a response
  - Joshua Davis, Web War I, Wired, Sept 2007

Computing Case Study Summary - Russia vs. Georgia Cyber War 2008

- **Goal**
  - **Politically make an example of Georgia to other ex-Soviet states**
  - **Economically shut down competing Georgian oil pipelines from Caspian Sea**
- **Center of Gravity (Strategy)**
  - **Coordinated cyber + physical attacks**
- **Technology / Equipment**
  - **Botnets located all around the world - not just inside Russia**
- **Training / Leadership / Morale**
  - **Social networks used nationalist appeals to recruit civilian cyber soldiers who were provided with one-click tools which did not require training to launch cyber attacks against lists of suggested targets**
- **Tactics**
  - **Distributed denial of service attacks against 54 Georgian government / bank / media Web sites**
- **Intangibles / Mistakes**
- **Outcome**
  - **First combined operation linking cyber attack with ground attack**

- David A. Fulghum, Cyberwar is Official, Aviation Week, Sept 14, 2009 pp. 54-55

Computing Case Study Summary - Stuxnet 2009-2010

- **Goal**
  - **Delay Iran's nuclear weapon production program**
- **Center of Gravity (Strategy)**
  - **Conduct remote cyber sabotage on Iranian centrifuges used to enrich uranium**
- **Technology / Equipment**
  - **Virus / worm that utilizes 4 Microsoft Windows zero day security vulnerabilities (which would require Windows source code) and genuine stolen digital signatures**
- **Training / Leadership / Morale**
  - **Code appears to be written by 30 people**

- Michael Joseph Gross, A Declaration of Cyber-War, Vanity Fair, April 2011

Computing Case Study Summary - Stuxnet 2009-2010

- **Tactics**
  - **Virus / worm seeks specific programmable logic controllers on centrifuges Iranians had at Vatanz nuclear enrichment facility, sabotages them, hides itself until done**
  - **Spread by USB sticks**
  - **Has self-destruct mechanism set for 2012, which says lawyers oversaw its creation, which says it comes from a Western government**
- **Intangibles**
  - **Who created it - US, Israel, Both?**
  - **Who helped with it - Microsoft, Siemens?**
  - **How can you make a cyber attack side-effect free?**

- Michael Joseph Gross, A Declaration of Cyber-War, Vanity Fair, April 2011

Computing Case Study Summary - Stuxnet 2009-2010

- **Mistakes**
  - **Virus / worm revealed itself before its job was complete**
- **Outcome**
  - **Allegedly, centrifuges were destroyed, program was delayed**
  - **What industrial target in what industrial nation will be next?**

  "Stuxnet is the Hiroshima of cyber-war…We have crossed a threshold, and there is no turning back."

  - Michael Joseph Gross, A Declaration of Cyber-War, Vanity Fair, April 2011

Computing Case Study Summary - Advanced Persistent Threat People's Liberation Army Unit 61398

- **Goal**
  - Enrich intelligence of the Chinese Communist party
- **Center of Gravity (Strategy)**
  - Conduct computer espionage focusing on political, economic, military intelligence
- **Technology / Equipment**
  - Standard Internet tools + social engineering
- **Training**
  - Hundreds to thousands of proficient English speakers with advanced computer security + networking skills
- **Leadership**
  - People's Liberation Army
- **Morale**
  - High
- **Tactics**
  - Spear phishing
- **Intangibles**
  - For long time has been engaged in theft of intellectual property
  - Now is interested in obtaining information on critical US utilities infrastructure
- **Mistakes**
  - Are easily tracked + identified, especially as they relax on social networks
- **Outcome**
  - Digital forensic evidence by Mandiant in 2013 shows an overwhelming percentage of cyber attacks on US corporations, organizations, government come from an office building in Shanghai, China = "Comment Crew" / "Shanghai Group"
  - Is central element of Chinese computer espionage + focuses on political, economic, military intelligence

- David Sanger + David Barboza + Nicole Perlroth, Chinese Army Unit is Seen as Tied to Hacking Against US, New York Times, Feb 18, 2013

Focused Case Study - Russia vs. Ukraine Cyber War 2014

- **You do not need to cyber attack another country when you make its cyber infrastructure and you own the telecommunications companies that run on top of it. By doing this you have free + unfettered access to their network - this is the ultimate Trojan horse**
  - **Ukraine's communications intercept system (like other members of Commonwealth of Independent States) is modeled after Russia's SORM system, including being built upon Russian hardware**
  - **Russian companies own a significant percent of Ukraine mobile market**
- **There are lessons here for the US in regards to China…**

  - Patrick Tucker, Why Ukraine Has Already Lost the Cyberwar Too, Defense One, Apr. 28, 2014

Computing Case Study Summary - Nitro Zeus

- **Goal**
  - Cyberattack on Iran in case diplomatic effort to limit its nuclear program failed
- **Center of Gravity (Strategy)**
  - Disable air defenses, communication systems, power grid
- **Technology / Equipment**
  - Cyberweapons
- **Training**
  - Place electronic implants in Iranian computer networks to prepare battlefield
- **Leadership ~ Morale**
  - NSA Tailored Access Operations unit would penetrate adversary networks
  - US Cyber Command would have executed attack
- **Tactics**
  - Also execute focused cyberattack on Fordo nuclear enrichment site by inserting worm to disable Fordo's computer systems thus degrading the operating of its uranium enrichment centrifuges
- **Intangibles**
  - Only US president can authorize offensive cyberattack
  - Collateral damage hard to predict
- **Mistakes**
  - Was It coupled to a kinetic component?
- **Outcome**
  - Cyberwarfare has become standard element of US military arsenal

- David Sanger + Mark Mazzetti, US Had Cyberattack Plan if Iran Nuclear Dispute Led to Conflict, New York Times, Feb. 16, 2016

Personal Case Study - NotPetya Malware Disguised as Ransomware

- **Role**
  - **Passenger on Deutsche Bahn, traveling from Augsburg to Interlaken**
- **Story**
  - **June 27, 2017 - Standing on train platform in Karlsruhe Hauptbahnhof, waiting to make a transfer**
  - **All the train information screens in the station went blank for one hour, there were not public service announcements, and then they came back up**
  - **The whole time the trains kept running on time**
  - **Originated in Ukraine, used the Windows zero-day exploit EternalBlue that was discovered by the NSA but never disclosed until the NSA was hacked by the ShadowBrokers who released it - was same exploit behind the WannaCry ransomware**
  - **Was initially thought to be a ransomware attack demanding $300 in Bitcoin**
  - **Really was a malware attack against Ukrainian financial system disguised as ransomware**
  - **Was done by the Russian GRU military intelligence agency on Ukraine's Constitution Day**

- Ellen Nakashima, Russian Military Was Behind NotPetya Cyberattack in Ukraine, CIA concludes, Washington Post, Jan 12, 2018

NotPetya

"While many in the security community still see NotPetya's international victims as collateral damage, Cisco's Craig Williams argues that Russia knew full well the extent of the pain the worm would inflict internationally. That fallout, he argues, was meant to explicitly punish anyone who would dare even to maintain an office inside the borders of Russia's enemy. 'Anyone who thinks this was accidental is engaged in wishful thinking,' Williams says. 'This was a piece of malware designed to send a political message: If you do business in Ukraine, bad things are going to happen to you.'"

- Andy Greenberg, The Untold Story of NotPetya, the Most Devastating Cyberattack in History, Wired, Sep. 2019

Focused Case State: Anonymous as Non-State Actor

- **Anonymous is a series of relationships, no membership fee, no initiation**
  - **Anyone who wants to be part of it simply claims allegiance**
- **Non-hierarchial**
- **Can infiltrate anything**
- **Started in 2004 on 4chan, moved in 2008 to Internet Relay Chat channels**
- **Attacks made**
  - **2008 - Church of Scientology - DDOS**
  - **2010 - Operation Payback against Mastercard, Visa, PayPal who had stopped facilitating donations to WikiLeaks - DDOS**
  - **2011 - Numerous Operations in support of Arab Spring - DDOS, hacks, cyber care packages for protestors**
  - **2013 - Million Mask March with several thousand people marching in support of Anonymous in 450 cities around world**
  - **2014 - Operation Save Gaza against Israel - DDOS**
  - **2014 - Operation Ferguson - including cyber care packages for protestors + doxing those it feels were responsible**
- **2012 - General Keith Alexander, Director of NSA claims Anonymous may be capable of destabilizing national power grids in 2 years**
  - **Anonymous may be most powerful nongovernmental hacking collective in world but has never demonstrated ability or desire to damage key public infrastructure**
    - **- David Kushner, The Masked Avengers, New Yorker, Sep. 8, 2015**

Zero Day Warfare

- **Goal - win war before it starts by penetrating opponent's territory years before conflict begins + by focusing on shattering opponent's physical + logical cohesiveness**
  - **Autonomous robots + software bots penetrate opponent physically (their territory) + logically (their computer systems)**
    - **Most hidden + dormant but some actively + passively map opponent networks, analyze them for vulnerabilities**
  - **When activated, autonomous robots + software bots conduct coordinated attack from inside opponent's territory + computer systems**
    - **Together they damage, degrade, seize control of physical infrastructure + computer systems to enable rapid entry of conventional forces**
  - **External forces (conventional + autonomous robots) utilize this disruption to rapidly seize control of opponent's territory**
- **Will be possible within 10 years**

- John Robb, Zero Day Warfare, Global Guerillas Feb. 21, 2016

Morality of Cyberwar

- **3 principles for going to war justly**
  - **Right purpose - acting in self-defense**
    - Cyberwar may move nations in direction of preemptive + preventive action
  - **Due authority - seek authorization from national or supranational body**
    - Cyberwar does not require armed forces but rather malicious software + skilled hackers
    - Authority loses meaning in world where individuals can wage cyberwar
  - **Last resort - Pursue diplomatic efforts until they will not resolve crisis**
    - Cyberwar's covert deniable nature means it can be used during negotiations
- **Ideas of fighting**
  - **Noncombatant immunity - focus on military vs. civilian targets, avoid deliberate targeting of civilians**
    - Cyberwar will cause less lethal harm to noncombatants, but with great economic cost inflicted upon innocent
  - **Proportionality - avoiding excessive force**
    - Cyberwar may influence type of action taken rather than degree of intensity of action
- **Conclusion**
  - **In whether to go to war, cyberwar may encourage preemptive action + erode idea of war as tool of last resort**
  - **In whether to target civilians, cyberwar may provide means for causing disruption without killing**
  - **Non-state actors will outflank "authority" principle**
  - **Nations might employ disproportionate physical force in response to virtual attack**

- John Arquilla, The Ethics of Cyberwar, Communications of the ACM, Oct. 2015

The Internet Has a Physicality To It

"Mr. Blum's book…is a timely antidote to oft-repeated abstractions about "cyberspace" or "cloud computing." Such terms gloss over the face that, just like the pipes that carry water, the tubes that carry bits are reliant on old-fashioned, low-tech spadework, human contact and the geographical reality in which all that exists."

- Mapping the Tubes, The Economist, June 23, 2012

- The Internet is a globe spanning tangle of wires, cables, routers, computers, cooling fans and data centers

- Andrew Blum, Tubes: A Journey to the Center of the Internet

The Internet Has a Geography

"Geography still matters to us because ultimately cyber is supported by physical devices, physical networks, physical connections. So I care about submarine and terrestrial cable routes, although they're often difficult to map exactly. Those cables run through a number of chokepoints, and they get damaged quite frequently; they're very vulnerable. Internet exchanges and major telephone links [show] there is a lot of critical infrastructure underneath the Internet which is important to understand, to map and to know about. And satellite ground stations are another vulnerability in the global information infrastructure."

- David Ferbrache, Head of Cyberspace Policy and Plans, British Ministry of Defense

Submarine Cables

- 1898 - Spanish American War - US cut Spain's submarine cables and cut Spain off from the world
- 1914 - World War I - United Kingdom cut Germany's submarine cables and cut them off from the world
    - Forced Germany to communicate via wireless telegraphy which could be easily intercepted
    - By owning and controlling the only world-wide submarine cable network (The All Red Line), the United Kingdom forced all other countries to send their messages over it, and by forcing those countries to send their messages unencoded over it (except for certain diplomatic messages), the United Kingdom had the world's greatest intelligence network
- 1939 - World War II - (unknown)
- 1970's+1980's - Cold War - US submarines physically tapped Soviet Union submarine cables in Operation Ivy Bells
- War on Terror - US tapped underground cables in US and sent data to NSA, when this was outlawed, US turned to capturing US data flowing across submarine cables as Google / Facebook / Microsoft backed up their US data centers to their overseas data centers
- Today - Russians are assumed to be tapping submarine cables today in the Atlantic while US is tapping submarine cables worldwide with submarine USS Jimmy Carter
- Today - 99% of world's trans-oceanic data goes through submarine cables (not through satellites)

- Stephenson, Neal - Mother Earth Mother Board, Wired, December 1996
- Starosielski, Nicole - The Undersea Network
- Blum, Andrew - Tubes: A Journey to the Center of the Internet
- Reed Winkler, Jonathan - Silencing the Enemy: Cable-Cutting in the Spanish-American War, War on the Rocks, Nov. 6, 2015
- Kennedy, Paul - Imperial Cable Communications and Strategy, 1870-1914
- Reed Winkler, Jonathan - Nexus: Strategic Communications and American Security in World War I, English Historical Review, Oct. 1971

The New SLOCs

- **Sea lines of communications (SLOCs) - traditionally they refer to ships carrying cargos**

- **Naval power is all about protecting commerce and SLOCs**

- **Submarine cables are digital SLOCs**

- **US has decided it must secure the sovereignty of its telecommunications infrastructure against malign foreign actors, hence the desire to keep China / Huawei out of the US 5G infrastructure, and a desire to keep them out of allies 5G infrastructure, especially 5 Eyes 5G infrastructure**

- **Will the US pursue a similar stance of sovereignty over the submarine cables that US data travels over?**

  - **US needs to ensure the sovereignty of undersea cable networks and the data flowing across them to protect the US and its allies**

  - **In 2020 US blocks submarine cable being built by Facebook and Google from connecting to China's submarine cable network**

- **Data is the new oil!**

Computing Case Study Summary - Mapping Cyberspace / Internet Mapping Project

- **Background**

  "It (the voyage of HMS Beagle) was another great step in the Enlightenment project of mapping, and therefore controlling, the world."

  - **Neil MacGregor, A History of the World in 100 Objects, Episode 91 Ship's Chronometer from HMS Beagle**

- **Goal**

  - **Acquire + save Internet topological data over long period of time**

- **Center of Gravity (Strategy)**

  - **To control the battle space, you must first map the battle space**

Computing Case Study Summary - Mapping Cyberspace / Internet Mapping Project

- **Technology / Equipment / Training / Leadership / Morale**
    - Conduct frequent traceroute-style path probes, one to each Internet entity
    - Build a graph showing the path to most of nets on Internet
    - Generate map from graph showing topology at center of Internet

Computing Case Study Summary - Mapping Cyberspace / Internet Mapping Project

- ## Tactics / Intangibles / Mistakes
  - 1998 - Internet Mapping Project launched by Bell Labs, generating beautiful maps for Wired magazine
  - 1999 - Maps Yugoslavia during war
  - 2000 - Spun off into Lumeta, becomes IPSonar
  - 2006 - Principles leave for ATT Labs (William Cheswick) + Google (Hal Burch)
  - 2008 - Beautiful map generated for Inauguration crowds
  - 2010 - Strategic partners = security industrial complex = Northrop Grumman, SAIC
- ## Outcome
  - Number of routers on Internet grows from 88,000 (August 1998) to 159,000 (April 2003) to 450,000 (April 2008)
  - Currently a closed system
  - Open alternatives exist but are not currently operational - OPTE.org + Caida.org (Walrus open source)

Personal Case Study - David L.

- **Role**
  - **White hat hacker**
- **Story**
  - **Only child ~ musician ~ ham radio ~ B.S. CompSci**
    - **Ran world's largest Internet BBS (ISCA) + busiest FTP site (lust) while undergraduate in 1990's**
    - **People drove from around USA to leave offerings at front door**
  - **Wired / networked home including fish tanks**
    - **First MP3 I ever saw - on server in his car in 1992**
  - **Security consultant to FBI**
  - **Started his own Internet Service Provider**
    - **Eventually purchased a telephone company (CLEC)**
  - **…oh and by the way is now highly specialized physician**
  - **Saw him in action**
    - **Needed live phone line for demonstration at computer conference in a Hilton Hotel which hotel could not provide**
    - **In 5 minutes he located a hotel phone closet, hacked into it, and physically ran a phone line 100 yards with a dial tone to our podium ~ "No problem guys!"**

Personal Case Study - David G.

- **Role - Computer security specialist**
- **Story - Ph.D. in computer science, worked at NSA, then Naval Research Laboratory (NRL), now in private industry**
  - **Created Onion Routing at NRL which is a way to camouflage communication over a public network and thus avoid censorship**
  - **Evolved into open-source Tor system**

Personal Case Study - EF-111A pilot

- **Role - First Gulf War pilot**
- **Story**

  "Once we turned our jammers on the first night of the war, the Iraqis were totally blinded…"

Class Simulation

- **Information warfare aspects**

Poem

Slide text

Questions for Further Discussion

- Can a war be won with information warfare alone?
- Can a war be won without information warfare?
- Describe how the Americans used information warfare to defeat the British in the American Revolution
- Is Al Jazeera the printing press of the Arab / Muslim revolution?

- How will the information revolution affect the use of armed force?
- Who invented cyber war, and as usual, missed it?
- When was the first cyber attack?
- What nations have been crippled by cyber war?
- What was the first cyber attack you experienced?
- How will computers change the nature of war?
- Can a war be won with cyber warfare alone?
- Can a war be won without cyber warfare?
- Is the government (civilian or military) with its calcified bureaucracy and inability to pay competitively to attract the best talent the right place to center our cyber defense efforts?

Reading Assignments

- **How to Make War Chapter 18**
- **TED Talks for this Topic**
  - **http://www.warstudiesprimer.org/ToLearnMore.html**

Recommended Reading to Learn More

- **Non-fiction**
  - **Clifford Stoll - The Cuckoo's Egg**
  - **Steven Levy - Hackers**
- **Fiction**
  - **Neal Stephenson - Snow Crash**
- **Movies**
  - **The Control Room**
- **Simulations**

Conclusion

"In virtually every case, those whose rule is based on an ideology of hate have understood better than we have the power of ideas and the power of communicating ideas."

- Newton Minnow

Conclusion

"This instrument can teach, it can illuminate, and yes it can even inspire. But it can do so only to the extent that humans are determined to use it to those ends. Otherwise it's nothing but wires and lights in a box."

- Edward R. Murrow

Conclusion

"So, for me, the real meaning of cyber warfare is on the battlefield. Much as aircraft which couldn't break societies with bombardment transformed 20th century warfare, I think cyber attacks will transform 21st century warfare. Militaries which are highly dependent on secure information systems will be absolutely crippled, just as if they didn't have aircraft above to protect them in the 20th century. If they don't have good cyber defenses in the 21st century, they'll be absolutely helpless."

- Professor John Arquilla, Naval Post Graduate School

Conclusion
Rules of Computer Security

- **RULE ONE: Do not own a computer.**
- **RULE TWO: Do not power it on.**
- **RULE THREE: Do not use it.**
    - **Robert Morris Sr., NSA cryptographer**

Topic 13

How I Learned to Stop Worrying and Love the Bomb

Weapons of Mass Destruction

Song

Little Johnny Jones he was a US pilot
And no shrinking violet was he
He was mighty proud when World War III was declared
He wasn't scared, no siree
And this is what he said on
His way to Armageddon...

So long Mom, I'm off to drop the Bomb
So don't wait up for me
But while you swelter down there in your shelter
You can see me on your TV

While we're attacking frontally
Watch Brink-e-ly and Hunt-e-ly
Describing contrapuntally
The cities we have lost
No need for you to miss a minute
Of the agonizing holocaust

So so long mommy, I'm off to kill a commie
So send me a salami and try to smile somehow
I'll come back to you when the war is over
Just an hour and a half from now
        - Tom Lehrer, So Long Mom I'm Off To Drop The Bomb

Thematic Quote

"If the radiance of a thousand suns were to burst forth at once in the sky, that would be like the splendor of the Mighty One...I am become Death, the destroyer of worlds"

- J. Robert Oppenheimer quoting the Bhagavad Gita

The Painting

Painting Name
- Artist's Name
(Location of painting)

The Question

Can you win a nuclear war?

The Big Questions

- **How to deter nuclear war?**
- **Effectiveness of antiballistic missiles?**
- **When to start a preemptive nuclear war?**
- **Once nuclear war breaks out, how to exercise command and control over your forces?**
- **How to stop a nuclear war?**
- **How to determine who won the nuclear war?**
- **How to govern after nuclear war?**
- **Health effects of nuclear weapons?**

Van Creveld on Impact of Nuclear Weapons

- **Link between victory and preservation of your political organization was cut**

- **Leads to rise of deterrence**

- **Where nuclear weapons appear, interstate warfare is abolished**

    - Martin Van Creveld, Through a Glass, Darkly

Nuclear Hot Spots Today

- **North Korea / Japan / US**
- **Iran / Israel**
- **India / Pakistan**

Nota Bene

- **For Command and Control of nuclear weapons**
  - **See Topic 14 Graceful Degradation**

Nota Bene

- **For effects of Weapons of Mass Destruction as toxic environmental waste**
  - **See Topic 24 Lawfare**

Focused Case Study - Black Death = Bubonic Plague

- **~ 1346 - Begins in Mongol Empire**
  - **Europeans believe they will be isolated from it**
    - **Have one contact with East: Traders from Genoa + Venice have trading posts in Black Sea / Sea of Azov to connect with traders along Silk Road**
- **1346 - Spreading via Silk Road, bubonic plague attacks Tartars in Crimea**
  - **Muslim Tartars blame it on Christian Genoese + Venetians so they lay siege to Genoese at their post at Kaffa**
    - **Could not take post by force, so catapult bodies of Tartars who died from plague into post - this is the first biological warfare attack**
    - **Genoese threw bodies of Tartars out of post into sea, becoming infected in the process, then sailed back to Italy + spread plague themselves**
- **1348 - Plague spreads through much of Europe**
- **1350 - Plague spreads through all of Europe**
- **1351 - Plague burns out, 1/3rd Europe is dead**
  - **First and most spectacular example of biological warfare**
  - **- John Brown, A First in Biological Warfare, Strategy & Tactics # 235, p. 24.**

Case Study Summary - Third Battle of Britain: V-1 in June 1944 - Sept. 1944 + V-2 in Sept. 1944 - Mar. 1945

- **Goal**
  - **Inflict decisive levels of destruction + casualties on Britain by attacking London + knocking Britain out of the war**
- **Center of Gravity (Strategy)**
  - **Coordinated attack of V-1, V-2, bombers against Britain**
- **Equipment**
  - **German - V-1 flying bomb + V-2 ballistic missile which was technologically immature**
  - **British - Against V-1: Radar, fighters, anti-aircraft guns helped by better radar + proximity fuse, barrage balloons, first use of Gloster Meteor jet fighter**
  - **British - Against V-2: Nothing to be done**
  - **British - Against V-1 + V-2 fixed missile launching bunkers - reconnaissance planes to find them, bombers with Tallboy bomb to attack them**
- **Training**
- **Leadership**
- **Morale**

- Steven Zaloga, V-1 Flying Bomb 1942-52, 2005
- Steven Zaloga, V-2 Ballistic Missile 1942-52, 2003
- Steven Zaloga - German V-Weapon Sites 1943-45, 2008
- Alfred Price, Britain's Air Defenses 1939-1945, 2004

Case Study Summary - Third Battle of Britain:
V-1 in June 1944 - Sept. 1944 + V-2 in Sept. 1944 - Mar. 1945

- **Tactics**
  - **German - Fixed bases modeled on U-Boat pens, V-1 used dispersed bases + fixed bases + air launch, V-2 used fixed bases + mobile bases**
  - **British - Preemptively find + strike V-1 + V-2 weapons before launching (Operation Crossbow) : attack Peenemunde (R+D center), attack fixed bases, try to find + attack dispersed bases, hit factories, hit rail system so new missiles can't be brought up**
- **Intangibles**
  - **German - Coordinated attacks failed due to delays in weapon availability, one key V-2 limitation was LOX production**
  - **German - V-1 was simpler + easier to make + more practical in combat conditions than V-2**
  - **British - No warning system for civilians - V-1 or V-2 could land at any time, unlike during the Blitz**
- **Mistakes**
  - **V-2 was army program so due to Inter Service Rivalry, the Luftwaffe came up with V-1**
    - Steven Zaloga, V-1 Flying Bomb 1942-52, 2005
    - Steven Zaloga, V-2 Ballistic Missile 1942-52, 2003
    - Steven Zaloga - German V-Weapon Sites 1943-45, 2008
    - Alfred Price, Britain's Air Defenses 1939-1945, 2004

Case Study Summary - Third Battle of Britain:
V-1 in June 1944 - Sept. 1944 + V-2 in Sept. 1944 - Mar. 1945

- **Outcome**
  - **10,000 V-1s launched with 85% from ground + 15% from air, 25% of ground launched + 10% of air launched reached their target, caused 6,184 deaths + 17,981 injured**
  - **1,359 V-2s launched against London with 12% failed shortly after launch + 10% disintegrated in flight + 1,054 reached England + 517 hit London, caused 2,754 deaths + 6,523 injured**
  - **There was a 75% V-1 interception rate and a 0% V-2 interception rate**
  - **V-1 attacks caused panic in London, caused formal + informal evacuation of London**
  - **V-1 was more effective than V-2 because of smaller cost of developing / manufacturing / employing missile**
  - **Greater vulnerability of V-1 led to great deal of effort by Allies to counter it, first in Crossbow bombing + then in air defense against it**
  - **Crossbow bombings were effective, caused Germans to shift towards more mobile basing which was less efficient way to use weapon**
  - **V-2 mobility made it resistant to air attack but inefficient due to complexity of missile + system**
  - **- Steven Zaloga, V-1 Flying Bomb 1942-52, 2005**
  - **- Steven Zaloga, V-2 Ballistic Missile 1942-52, 2003**
  - **- Steven Zaloga - German V-Weapon Sites 1943-45, 2008**
  - **- Alfred Price, Britain's Air Defenses 1939-1945, 2004**

Case Study Summary - Third Battle of Britain: V-1 in June 1944 - Sept. 1944 + V-2 in Sept. 1944 - Mar. 1945

- **Outcome**
  - **Greatest role played by V-2 was in post-war space program**
  - **In fall of 1944, when fate of Third Reich was at hand, > 50% of explosive production went to V weapon warheads, to kill only 1,000 civilians a month**
  - **British ultimately had to overrun launch sites to stop attacks**
  - **V attacks caused misery, had no impact on morale, served a purpose for revenge, but were military folly**
  - **London was first city to live through attack by cruise missiles / ballistic missiles / weapons of mass destruction**
  - **Modern equivalents - Cold War, War of the Cities with Scuds in Iran-Iraq War, First Gulf War, Hezbollah / Hamas vs. Israel, Non-nuclear or nuclear Iran vs. Israel**
  - **Lessons Learned - Don't have faith in technology until it is tested, Importance of intelligence to learn of the weapons + locate them + plan to take action against them, Preemption does not always work as raid on Peenemunde killed few key scientists + forced production to be moved to impregnable mountain so it delayed the German program (mowed the lawn) but did not stop it, Counterforce targeting against V2 bunker launch complexes really didn't work (too heavily protected), Counterforce targeting against V1 launch complexes did work as they were soft targets**
    - Steven Zaloga, V-1 Flying Bomb 1942-52, 2005
    - Steven Zaloga, V-2 Ballistic Missile 1942-52, 2003
    - Steven Zaloga - German V-Weapon Sites 1943-45, 2008
    - Alfred Price, Britain's Air Defenses 1939-1945, 2004

What George Orwell Thought About Drones

"I notice that apart from the widespread complaint that the German pilotless planes "seem so unnatural" (a bomb dropped by a live airman is quite natural, apparently), some journalists are denouncing them as barbarous, inhumane, and "an indiscriminate attack on civilians."... But I would not deny that the pilotless plane, flying bomb, or whatever its correct name may be, is an exceptionally unpleasant thing, because, unlike most other projectiles, it gives you time to think. What is your first reaction when you hear that droning, zooming noise? Inevitably, it is a hope that the noise won't stop. You want to hear the bomb pass safely overhead and die away into the distance before the engine cuts out. In other words, you are hoping that it will fall on somebody else."

- George Orwell, June 1944

Case Study Summary - Hiroshima + Nagasaki

- **Goal**
  - **Force unconditional surrender of Japan without invasion of home islands**
- **Center of Gravity (Strategy)**
  - **Drop atomic bombs**
- **Equipment**
  - **Base on Tinian ~ B-29 ~ Enola Gay (Little Boy / uranium bomb) on Hiroshima, Bockscar (Fat Man / plutonium bomb) on Nagasaki**
- **Training ~ Leadership ~ Morale**
  - **509th Composite Group ~ Colonel Paul Tibbets**
- **Tactics**
  - **Fly unarmed, alone, high**

Case Study Summary - Hiroshima + Nagasaki

- **Intangibles ~ Mistakes**
    - **Will it work? What will it do?**
- **Outcome**
    - **~ 100,000 killed immediately in each attack, many more later**
    - **After second attack, Emperor intervenes and surrenders Japan**
    - **US invasion of home islands averted along with millions of casualties**
    - **Enola Gay represents end of military empire + dawn of economic empire for Japanese visitors to Smithsonian Paul Garber Restoration Facility**
    - **Paul Tibbets (pilot of Enola Gay) never had any regrets ~ Nor did Dutch Van Kirk (navigator of Enola Gay)**

"You have various thoughts. You are going to kill a lot of civilians obviously. You regret that. But if you are in a war, you have to have the guts to fight the war to win it."

"The Japanese were a licked people before we ever dropped the atomic bombs. We practically burned Japan down before we ever dropped the atomic bombs. The atomic bombs did not win the war. It just gave Japan the excuse to get out of the war and save face. It was not the reason, it was the excuse."

- Dutch Van Kirk, navigator of the Enola Gay, reflections on dropping the atomic bomb in talk at Museum of USAF, 2012

Were the Atomic Bombs Necessary?

- **US Strategic Bombing Survey states that Japan was close to collapse before use of atomic bomb on Hiroshima and Nagasaki**
  - **Was written without access to Ultra intelligence intercepts**
- **Ultra intelligence intercepts of Japanese diplomatic communications from that time show Japanese government had no intention of surrendering prior to atomic bombing**
- **The Japanese hoped to inflict major casualties on US during upcoming invasion of Kyushu in November 1945, thus paving way for favorable negotiations**

- Norman Polmar, Paul Nitze and the A-Bomb, Naval Historical Foundation, Jun. 19, 2013

Staff Ride - Hiroshima
August 6, 1945

- **Prelude - Politics - Strategy**
  - Force unconditional surrender of Japan without invasion of home islands
- **Approach of armies to battlefield - Why was battle fought here**
  - US government's factors in target selection - "The targets chosen should be places the bombing of which would most adversely affect the will of the Japanese people to continue the war. Beyond that, they should be military in nature, consisting either of important headquarters or troop concentrations, or centers of production of military equipment and supplies. To enable us to assess accurately the effects of the bomb, the targets should not have been previously damaged by air attacks. It is also desirable that the first target be of such size that the damage would be confined within it, so that we could more definitely determine the power of the bomb."
  - General Leslie Groves, director of the Manhattan Project favored Kyoto, the ancient capital of Japan which also had great religious significance
  - Interim Committee's recommendations for first use of atomic bomb: 1) It should be used as soon as possible, 2) It should be used on a military installation surrounded by houses or other buildings most susceptible to damage, 3) It should be used without explicit prior warning of the nature of the bomb
  - Target Committee considered Kokura, Kyoto, Hiroshima, Niigata - Kyoto was chosen as primary target for psychological factors, making first use of bomb "sufficiently spectacular for the importance of the weapon to be internationally recognized when publicity on it was released"
  - Secretary of War Henry Stimson would not approve Kyoto as target - "Kyoto is an historical city, and one that is of great religious significance to the Japanese. I visited it when I was Governor-General of the Philippines, and was very much impressed by its ancient culture."
- **Leaders**
  - General Leslie Groves - leader of Manhattan Project, ~ Colonel Paul Tibbets - Commander of 509 Composite Group
- **Logistics**
  - Manhattan Project to develop the atomic bomb
- **Weapons - Direct and indirect**
  - Little Boy - gun type fission weapon
- **Order of Battle**
  - 509 Composite Group - B-29
- **Organization - Units and formations**
  - 509 Composite Group - B-29's to deliver the weapon
- **Command, control, communications, intelligence**
  - The US government got him in the air, but Tibbets would make the final decision by himself, in the air, with the latest weather information, on what the target would be
- **Tactics**
  - Fly unarmed, alone, at high altitude
  - Begin bombing run east of city, approaching Hiroshima at 90 degrees to rivers bisecting it, with any riverbank providing handy reference point for bombardier
- **Weather**
  - Need clear weather for visual bombing to ensure bomb is placed on target ~ Only 6 days / month in August when there would be three-tenths cloud or less
  - "Suppose no weather forecast at all was made, but that the mission started out on a given day, preceded by spotter planes who would radio back weather reports to the bomber while it was in the air. The bomber could then proceed to that target showing the clearest weather."
- **Terrain**
  - Hiroshima resembled a human hand, encased in natural bowl filled with arms factories + military bases
  - Built to burn with 90% of houses made of wood + antiquated fire fighting equipment + poorly trained personnel
- **Operational**
  - Everything went according to plan on the day
- **Chronologic narrative of battle taking note of friction and fog**
  - In first millisecond after 8:16 am - glowing fireball hundreds of feet wide causing temperature of several thousand degrees centigrade at Shima clinic / ground zero - flash heat started fires 1 mile away + burned skin 2 miles away
  - Of 320,000 civilians + soldiers in city, 80,000 killed instantly or seriously wounded, 33% casualties were soldiers, most deaths in 4 square miles around Aioi Bridge
  - 62,000 out of 90,000 building destroyed ~ All utilities + transportation systems wrecked ~ 70,000 breaks in water mains ~ 16 pieces of fire-fighting equipment survived
  - 180 / 200 doctors + 1,654 / 1,780 nurses were dead or injured ~ 3 / 55 hospitals + first-aid centers were usable
  - Largest single group of casualties around Hiroshima Castle, 900 yards from ground zero where several thousand soldiers were in the open + were incinerated
  - Extreme temperature lit Radio Hiroshima on fire, burned trolley cars / trucks / railroad cars ~ Fused clothing to skin ~ Imprinted clothing patterns on skin
  - Clogged sewage system, affected water table under ground, sent shattered glass throughout area, firestorm erupted
  - Enola Gay crew saw intense light from flash, then saw + experienced shock wave from blast
- **Decisions - What good and bad ones were made**
  - Text
- **OODA loop - Who is inside the other's**
  - US inside Japan's
- **Who thought they won, who really won**
  - The US thought they won, and they did
- **What effect did it all have - Aftermath of battle**
  - After second attack on Nagasaki, Emperor intervenes and surrenders Japan
  - US invasion of home islands averted along with millions of casualties
  - Enola Gay represents end of Japanese military empire + dawn of its economic empire
  - In 2015, the grandson of Colonel Tibbets, Brig. Gen Paul Tibbets IV, a B-1 and B-2 pilot, took command of 509 Bomb Wing which flies the B-2

- Gordon Thomas + Max Morgan Witts, Enola Gay

Long-term Effects of Radiation Exposure on Health

- **Radiation exposure increases risk of cancer throughout life**
- **Survivors have clear radiation-related excess risk of cancer**
- **People exposed as children have higher risk of radiation-induced cancer than those exposed at older ages**
- **At high doses, and possibly at low doses, radiation might increase risk of cardiovascular disease and some other non-cancer diseases**
- **Hereditary effects in the children of atomic bomb survivors have not been detected**
- **Dose-response relation for cancer at low doses is assumed, for purposes of radiological protection, to be linear without a threshold, but has not been shown definitively**

- Kenji Kamiya et.al, Long-term effects of radiation exposure on health, The Lancet, Aug. 1, 2015

Words to Live By

- **Be filial to your parents**
- **Be affectionate to your brothers and sisters**
- **Be harmonious as husbands and wives**
- **Trust and be trusted by your friends**
- **Bear yourself in modesty and moderation**
- **Extend your benevolence to all**
- **Devote yourself to learning and gain an occupation**
- **Acquire knowledge and develop your talent**
- **Improve your character**
- **Work to promote public good**
- **Respect the constitution and observe the law**
- **Should emergency arise, offer yourself courageously to the state**

- Emperor Meiji's Imperial Rescript on Education in 1890

Focused Case Study - Food as a National Security Issue

- **The health of a nation's food system is a critical issue of national security**
- **Era of cheap + abundant food drawing to a close**
- **Food system is tied to:**
  - **Health care system - US diet leads to preventable chronic diseases**
  - **Energy independence - huge amounts of fossil fuels needed to produce industrialized food**
  - **Climate change - industrialized farming creates greenhouse gases**
  - **Rest of world - low prices of US commodity crops used to undermine other countries farmers, when the prices are raised the countries starve and they become reluctant to rely on US as source of food = "food sovereignty"**
- **Food is a national security issue - when country loses ability to substantially feed itself, it is at mercy of markets + governments**
  - **Safety of food is another issue - a country has little control over safety of imported food**

  "I, for the life of me, cannot understand why the terrorists have not attacked our food supply, because it is so easy to do." - Tommy Thompson, Secretary of Health + Human Services, 2004

- Michael Pollan, Farmer in Chief, New York Times Magazine, Oct. 12, 2008

Focused Case Study - Dr. Strangelove

- **Chrome Dome = Wing Attack Plan R**
  - **12 B-52's loaded with nuclear weapons always on airborne alert**
- **General LeMay = General Ripper**
  - **Procedures existed and were very loose for transferring the ability to launch a nuclear attack from the President to generals**
- **Herman Kahn = Dr. Strangelove**
  - **Book was "On Thermonuclear War"**
    - **One chart was titled "Tragic But Distinguishable Postwar States"**
    - **One chapter on mine shafts was titled "Will The Survivors Envy the Dead?"**

  - Fred Kaplan, Truth Stranger Than Strangelove, New York Times, October 10, 2004

Focused Case Study - Dr. Strangelove

- **Doomsday Machine**
  - **Soviets built a doomsday device - Perimetr**
  - **Operational in January 1985**
  - **Semi-automatic doomsday device**
  - **"Yes, but the…whole point of the doomsday machine…is lost…if you keep it a secret! Why didn't you tell the world, eh?"**
    - **- Dr. Strangelove**

- Ron Rosenbaum, The Return of the Doomsday Machine? Slate, Aug. 31, 2007

Case Study Summary -
The Other Missiles of October

- **Goal**
  - Soviet Union - balance the first-strike capability of U.S. Jupiter Intermediate Range Ballistic Missiles in Turkey + protect Castro regime in Cuba
- **Center of Gravity (Strategy)**
  - Soviet Union - Place Ballistic Missiles in Cuba
- **Equipment**
  - Soviet Union - Medium + Intermediate Range Ballistic Missiles along with medium range bombers and Surface to Air Missiles to defend them
  - US - US Air Force, Army, Navy, Marines arrayed against Cuba along with overwhelming nuclear superiority
- **Training**
  - Soviet Union - fair ~ United States - excellent
- **Leadership**
  - Soviet Union - Krushchev ~ US - Kennedy + Executive Committee of National Security Council (ExComm)

  - Benjamin Schwarz, The Real Cuban Missile Crisis, The Atlantic, Jan. 2013

Case Study Summary -
The Other Missiles of October

- **Morale**
  - **Eventually both sides become terrified of what they have wrought**
- **Tactics**
  - **Soviets placed missiles + bombers secretly to be presented eventually as fait accompli**
  - **US announces presence of missiles + demands their unilateral removal, implements quarantine of Cuba**
- **Intangibles**
  - **Missiles did not pose a military threat to US but rather posed a political threat to Kennedy Administration who could not appear to be weak on Cuba**
- **Mistakes**
  - **Kennedy took world to brink of nuclear war to preserve US credibility when he did not have to**
- **Outcome**
  - **Publically Soviets agree to remove missiles from Cuba in exchange for US promise to not overthrow Castro**
  - **Privately US agree to remove missiles from Turkey, but this was known only to a few who lied about it + covered it up until late 1980's**

- Benjamin Schwarz, The Real Cuban Missile Crisis, The Atlantic, Jan. 2013

Focused Case Study - Crisis Management

- **Lessons learned from Cuban Missile Crisis**
  - **View from Oval Office can be very limited**
    - **President may be best-informed person in world but there is much he does not know**
    - **Beginning of wisdom for President is understanding you are groping about in the dark**
  - **Somebody always screws up**
    - **Makes precisely calibrated crisis management impossible**
    - **Chances of dangerous unpredictable events skyrocket once you set machinery of war in motion**
  - **Personality matters**
    - **Need capacity for independent judgment separate from military brass + spymasters**
    - **JFK had just read "The Guns of August" by Barbara Tuchman**
    - **"How did it (World War I) happen?" - "If only one knew…"**

- Michael Dobbs, Cool Crisis Management? It's a Myth. Ask JFK, Washington Post, June 22, 2008

Computing Case Study Summary - Safeguard Anti-Ballistic Missile (ABM) System

- ## Goal
  - **Provide defense against Soviet ballistic missile threat**
- ## Center of Gravity (Strategy)
  - **From Nike-Zeus (point defense) to Sentinel (US population defense) to Safeguard (US missile field defense) to defending single missile field near Grand Forks North Dakota**
- ## Technology / Equipment
  - **Radars - Perimeter Acquisition Radar for long range tracking / Missile Site Radar for guiding Spartan + Sprint interceptors to targets**
  - **Missiles - Spartan long range missile / Sprint short range missile**
  - **Computers - SAGE on steroids ~ Largest programming project up to that time ~ Run by Western Electric ~ Written in assembly language for speed ~ Shaving microseconds off the program would let them save more cities ~ Ran on UNIVAC fault tolerant computers ~ Would have worked against non-MIRVed enemy**

- Mark A. Berhow, US Strategic and Defensive Missile Systems 1950-2004 pp.30-36

Computing Case Study Summary - Safeguard Anti-Ballistic Missile (ABM) System

- ## Training ~ Leadership ~ Morale
  - This is a computer system with a number of computer programs that have to work perfectly the first time…or else - doubt over whether it can…
  - Is the video game Missile Command a good simulation of this?
- ## Tactics
  - First intercept incoming warheads in space with 5 MT nuclear warhead from Spartan, then intercept those that get through in atmosphere with low KT warhead on Sprint
  - - Mark A. Berhow, US Strategic and Defensive Missile Systems 1950-2004 pp.30-36

Computing Case Study Summary - Safeguard Anti-Ballistic Missile (ABM) System

- **Intangibles / Mistakes**
  - What is the effect of Electro magnetic pulse (EMP) from system's nuclear warhead explosions on the system's operation?
  - What is the effect of radiation from system's nuclear warhead explosion on population you are defending?
  - How can Spartan avoid being overwhelmed by decoys in space?
  - How can Sprint avoid being overwhelmed by multiple independent reentry vehicles (MIRVs)?
- **Outcome**
  - 99.5% uptime
  - Ultimately limited to 1 site with 100 missile launchers by SALT I ABM treaty
  - Shut down by vote of Congress 8 months after deployed in 1975 for stated fiscal reason of it being too expensive a system to defend only 1 missile field…and for unstated reason of belief in the doctrine of Mutually Assured Destruction (MAD) rather than defense
  - For the first time, offense (MIRVs) become cheaper than defense (ABM)
  - Mark A. Berhow, US Strategic and Defensive Missile Systems 1950-2004 pp.30-36

The Real Meaning of the Strategic Defense Initiative (SDI)

"We cannot equal the quality of U.S. arms for a generation or two. Modern military power is based on technology, and technology is based on computers. In the US, small children play with computers.... Here, we don't even have computers in every office of the Defense Ministry. And for reasons you know well, we cannot make computers widely available in our society. We will never be able to catch up with you in modern arms until we have an economic revolution. And the question is whether we can have an economic revolution without a political revolution."

- Marshal Nikolai Ogarkov, First Deputy Defense Minister and Chief of the Soviet General Staff as told privately to US journalist Leslie Gelb soon after the announcement of SDI

How Close Did the US + USSR Come to Nuclear War? - Operation RYAN

"Soviet intelligence services went on alert in 1981 to watch for US preparations for launching a surprise nuclear attack against the USSR and its allies. This alert was accompanied by a new Soviet intelligence collection program, known by the acronym RYAN, to monitor indications and provide early warning of US intentions. Two years later a major war scare erupted in the USSR. This study traces the origins and scope of Operation RYAN and its relationship to the war scare.

Some observers dismissed the alert and the war scare as Soviet disinformation and scare tactics, while others viewed them as reflecting genuine fears. The latter view seems to have been closer to the truth. The KGB in the early 1980s saw the international situation--in Soviet terminology, the "correlation of world forces"--as turning against the USSR and increasing its vulnerability. These developments, along with the new US administration's tough stance toward the USSR, prompted Soviet officials and much of the populace to voice concern over the prospect of a US nuclear attack.

New information suggests that Moscow also was reacting to US-led naval and air operations, including psychological warfare missions conducted close to the Soviet Union. These operations employed sophisticated concealment and deception measures to thwart Soviet early warning systems and to offset the Soviets' ability--greatly bolstered by US spy John Walker--to read US naval communications.

In addition, this study shows how:

The war scare affected Soviet responses to the Reagan administration's Strategic Defense Initiative (SDI), the administration's condemnation of the Soviet Union following the 1983 shoot down of a South Korean airliner, and a NATO nuclear-release exercise late that same year.

British Prime Minister Margaret Thatcher sought to use the Soviet alert/war scare to influence President Reagan's thinking about the USSR.

Moscow's threat perceptions and Operation RYAN were influenced by memories of Hitler's 1941 surprise attack on the USSR (Operation BARBAROSSA).

The Kremlin exploited the war scare for domestic political purposes, aggravating fears among the Soviet people.

The KGB abandoned caution and eschewed proper tradecraft in collecting indications-and-warning intelligence and relied heavily on East German foreign and military intelligence to meet RYAN requirements."

                                    - Benjamin Fischer, A Cold War Conundrum: The 1983 Soviet War Scare, 1997

Case Study Summary - A Missile Defense System That Works - Iron Dome

- **Goal**
  - **Protect Israel from rocket attacks from Gaza Strip**
- **Center of Gravity (Strategy)**
  - **Track incoming missiles, determine if they will hit populated area, if so intercept them, all within 15 seconds**
- **Equipment**
  - **Battery = battle management control unit, detection and tracking radar, 3 launchers each with 20 missiles**
  - **Each battery covers a city, there are 10 batteries total**
  - **Incoming Hamas rockets are few feet long + few inches wide**
- **Training**
  - **Excellent**
- **Leadership**
  - **Israeli maverick mathematician-general overcame skeptics by circumventing Israeli procurement system with Skunk Works-like operation that nearly landed him in jail**

- Dome Warfare, The Economist, Nov. 24, 2012
- Charles Levinson + Adam Entous, Israel's Iron Dome Defense Battled To Get Off Ground, Wall Street Journal, Nov. 26, 2012

Case Study Summary - A Missile Defense System That Works - Iron Dome

- **Morale**
  - **Raises Israeli civilian morale**
- **Tactics**
  - ***Not* a ballistic missile defense system (those are David's Sling + Arrow)**
  - **Used against short range, non maneuverable rockets without decoys with no precision guidance**
  - **Hamas rockets cost $1,000 / each**
  - **Iron Dome missiles cost $45,000 / each**
- **Intangibles**
- **Mistakes**
- **Outcome**
  - **1,500 rockets launched on Israel, 421 successfully intercepted for 84% interception success rate, only 1 Hamas missile got through + killed 3 Israeli civilians**
  - **In Operation Pillar of Defense in November 2012, Israeli Air Force preemptively destroyed 90% of Hamas rockets + missiles in concrete silos previously identified by Israel ISR. This coupled with Iron Dome's ability to intercept vast majority of remaining missiles launched meant ground invasion of Gaza was averted, with correspondingly fewer civilian casualties**

- Dome Warfare, The Economist, Nov. 24, 2012
- Charles Levinson + Adam Entous, Israel's Iron Dome Defense Battled To Get Off Ground, Wall Street Journal, Nov. 26, 2012

Computing Case Study Summary - BiodefenseEducation.org Digital Library

- **Goal**
  - **Deliver initial + continuing education on biodefense in efficient + effective manner**
- **Center of Gravity (Strategy)**
  - **Biodefense researchers, first responders, providers, journalists**
- **Technology / Equipment**
  - **Blog software (Manila) + intelligent agents (Google News)**
- **Training ~ Leadership ~ Morale**
  - **Principals are physicians + digital librarians + informaticians**
- **Tactics**
  - **Daily surf + intelligent agents, curation, post news stories, archive**
- **Intangibles ~ Mistakes**
  - **Authoritative open source news sources used ~ English only**
- **Outcome**
  - **Over time unstructured biodefense curriculum unfolds in practice**
  - **Well regarded ~ Had high impact factor in Google**

Personal Case Study - Captain Mike R.

- **Role - SSBN Commander, USN**
- **Story**
    - **Calm, cool, collected, competent**
    - **Exactly the kind of person you would imagine you would want to entrust with a nuclear arsenal**

Personal Case Study - My Civil Defense

- **At height of Cold War, what was the status of my civil defense?**
  - **My fallout shelter, at my high school, had been outfitted during Cuban Missile Crisis in 1962**
    - **In 1980 it was opened + inventoried - cracker tins were filled with dust, water barrels were filled with rusty water**
  - **In a medical school application essay in 1980 I chose as a theme that US doctors should be organized beforehand so they could be mobilized and efficiently + effectively used in case of nuclear war. I received a reply back from a professor telling me I was naïve - that organized civil defense was an oxymoron - and rejecting my application**
- **Compare this official + unofficial US attitude towards civil defense to Switzerland's**
  - **A civil defense shelter was provided for every citizen in every home + building - and is maintained to this day. The Swiss planned to survive a nuclear war, and then emerge + turn a profit on it**

Class Simulation

- **Weapons of mass destruction aspects**

Poem

Slide text

Questions for Further Discussion

- **Can a war be won with Weapons of Mass Destruction alone?**

Reading Assignments

- **How to Make War Chapter 20**
- **TED Talks for this Topic**
  - **http://www.warstudiesprimer.org/ToLearnMore.html**

Recommended Reading to Learn More

- **Non-fiction**
  - **John Hersey - Hiroshima**
- **Fiction**
- **Movies**
  - **Andromeda Strain**
  - **Failsafe**
  - **The War Game**
- **Simulations**
  - **Missile Command - Atari 800**

Conclusion

"Cry Havoc, and let slip the dogs of war"
- Marc Antony in William Shakespeare's Julius Caesar

Topic 14

Graceful Degradation

(C4I - Command, Control, Communications, Computers, Intelligence)

Song

We'll meet again, don't know where, don't know when,

But I know we'll meet again, some sunny day.

Keep smiling through, just like you always do,

'Til the blue skies drive the dark clouds far away.

So will you please say hello to the folks that I know,

Tell them I won't be long.

They'll be happy to know that as you saw me go,

I was singing this song.

- Ross Parker + Hughie Charles, We'll Meet Again

Thematic Quote

"Gentlemen, you can't fight in here! This is the War Room"

- President Merkin Muffley, Dr. Strangelove

Thematic Quote

"The "75" (mm gun) is firing. The "37" (mm gun) is firing, but it is traversed round the wrong way. The Browning is jammed. I am saying "Driver advance" on the A set, and the driver, who can't hear me, is reversing. And as I look over the top of the turret and see twelve enemy tanks fifty yards away, someone hands me a cheese sandwich."

- Ken Giles, subaltern in 'B' Squadron, Nottinghamshire Sherwood Rangers Yeomanry, Western Desert 1942 (in From Alamein to Zem Zem by Keith Douglas p. 123)

The Painting

Future Past

- Robert Tinney

(Byte Magazine)

The Question

Exactly just how much control does a commander really have over their forces?

How will the information revolution affect the use of armed force?

"'Doctrine' - that which you do automatically."

- Anonymous

"There is no time in battle to give orders. People must know what to do before they go into battle."

- Admiral Arleigh Burke

The Perfect Command & Control System, in Order of Importance

- **Prerequisites for avoiding defeat:**
  - **1. Preserving the order and cohesiveness of one's own forces**
  - **2. Controlling the pace of battle and avoiding fatal blunders**
- **Prerequisites for winning:**
  - **3. Ensuring "non-zero effectiveness"**
  - **4. Optimizing allocations, strategies, or force compositions - command and control of assured efficiency**

- Maj. General Jasper A. Welch

Pre-Purple Communications - Invasion of Grenada 1983

"When American troops did get ashore, they were plagued by poor communications and no unified command. Army officers had to fly out to Navy ships to arrange ship-to-shore bombardments. One Army officer in Grenada was so frustrated in trying to communicate with the Navy that he used his AT&T calling card on a pay telephone to contact his command at Fort Bragg, asking them to relay his plea for fire support to the Navy ships just a few miles away from him."

- Gregory L. Vistica, Fall From Glory: The Men Who Sank the US Navy, p. 181

"Imagine a meter for measuring the commander's satisfaction with his communications, reading from zero to 100, zero being none and 100 being perfect. If a commander had only very rudimentary communication, barely adequate but at least something, he might be up to 50 or so on the meter. He only gets double that with a perfect system."

- Lt. General John Cushman

"Tactical complexity is a peacetime disease. After the transition from peace to war, a marked simplification of battle tactics occurs. The tactical theorist underestimates the difficulty of executing complex operations in the heat of battle, and military historians are too quick to point out opportunities that could never have been exploited. Even peacetime naval leaders fall victim to this tendency. Cleverness, ingenuity and complex maneuvers work best for solo performers and small units that can be highly trained. Extraordinary evolutions, such as the High Seas Fleet's proficiency at executing a 180-degree turn in the midst of battle, must be doctrinal, heavily practiced and few in number."

- Captain Wayne P. Hughes USN

4 Generations of Computing

- In your room (mainframe)
- On your desk (personal)
- In your hand (mobile)
- On your clothes (wearable)

…as size decreases, network connectivity increases…

4 Generations of Communication

- **By analog voice (spoken word)**
- **By analog paper (written word)**
- **By analog wire (telegraph) + radio + TV**
- **By digital network (Internet)**

- **…as communications become digital, the amount of information communicated increases exponentially**

Communications Case Study Summary - Nike! (Victory!)

- **Goal**
  - **Communicate news of Greek victory over Persians at Marathon to Athens**
- **Center of Gravity (Strategy)**
  - **Run 26 miles**
- **Technology / Equipment**
  - **Sandals**
- **Training / Leadership / Morale / Tactics**
- **Intangibles**
  - **Nike is Greek goddess of victory**
  - **Story appeared 600 years after the battle, not in Herodotus' History**
- **Mistakes**
- **Outcome**
  - **Phidippides drops dead after delivering message**

Communications Case Study Summary - Admiralty Semaphores

- **Goal**
  - **Long distance message conveyance in times of crisis**
- **Center of Gravity (Strategy)**
  - **Use the high ground (hill tops)**
- **Technology / Equipment**
  - **1588 Spanish Armada - Used chain of huge bonfires on hilltops covering length + breadth of England which were lit when Armada was spotted - Each could be seen miles away**
  - **1793 Napoleon threatened invasion - semaphore signal posts set up between Portsmouth + London**
- **Training / Leadership / Morale / Tactics**
- **Intangibles / Mistakes**
  - **How would semaphore system work at night?**
- **Outcome**
  - **Evolved into British railroad mechanical semaphore signaling**

- OS Nock, The Dawn of World Railways 1800-1850, p. 126

Communications Case Study Summary - Victorian Internet

- **Goal**
  - **Speed up communication**
- **Center of Gravity (Strategy)**
  - **Connect the world with wires**
- **Technology / Equipment**
  - **1790's - Optical / mechanical telegraphs developed by French**
  - **1844 - "What hath God wrought?" - First telegraph message by Samuel Morse**
  - **1850 - News that had taken a week to get from New York to Washington DC now took seconds**
  - **1865 - First transatlantic cable, no longer had to wait 6 weeks to learn what was happening on other side of Atlantic**
  - **1870s - world wide network**
- **Training / Leadership / Morale / Tactics**
  - **Required skilled operators to learn Morse code**

- Tom Standage, The Victorian Internet

Communications Case Study Summary - Victorian Internet

- ## Intangibles / Mistakes
  - ### Commonalities between telegraphy in 19th century + Internet
    - Hype, skepticism, hackers, online romance, chat rooms, flaming, information overload, predictions of outbreak of world peace, speculative stock market bubbles in tech companies, cryptography usage, government regulation, address spaces
    - Sped up business, commerce, news gathering, war
- ## Outcome
  - Telegraph was Internet of its age
  - Telegraph caused greater changes in society than Internet did through speeding up communication
  - Militarily, centralizes C2 especially for Royal Navy
  - Evolves into telephone (speaking telegraph) that could by used by unskilled operators (everyone)

- Tom Standage, The Victorian Internet

Focused Case Study - T-Mail Background

- **US Civil War influenced by three new technologies**
  - **Railroad expanded battlespace**
    - **Increased area from which troops could be sent to battlefield (see First Battle of Bull Run)**
  - **Rifled musket expanded killing power**
    - **Extended range + killing efficiency of soldier (see Pickett's Charge at Gettysburg)**
  - **Telegraph expanded national leader's reach**
    - **Eliminated physical distance as controlling factor in exchange of information, allowing coordination between disparate forces and national leadership**
    - **Allowed national leader to electronically monitor battle he was not present at for first time**
  - **- Tom Wheeler, Mr. Lincoln's T-Mails**

Focused Case Study - T-Mail Politics

- **At beginning of Civil War all communication with Union military forces was in military hands**

- **In 1862 US Military Telegraph Corps - a civilian agency - was formed and placed in War Department across street from White House**

  - **All military traffic flowed through it, putting communication with Union military forces in civilian hands**

  - **Proximity to White House gave Lincoln easy access**

  - Tom Wheeler, Mr. Lincoln's T-Mails

Focused Case Study -
T-Mail Technique

- **War Department telegraph office, across street from White House, became Lincoln's situation room where he read all incoming traffic and sent his own outgoing traffic**
  - **Lincoln was a techie - an early adaptor - only president to hold a patent**
  - **Telegraph was his personal news service…a Big Ear to eavesdrop on what is going on and a Long Arm for projecting his leadership informed by newly gathered information**
  - **Allowed him to practice management by walking around with the telegraph doing the walking**
  - **…and yet his hierarchy of communications was first - face to face, second - written letter, and third - telegram**
  - **- Tom Wheeler, Mr. Lincoln's T-Mails**

Focused Case Study - T-Mail Result

- **Historical relationship between leader in the political capital and generals in the field was altered by Lincoln**
    - **Never before had commander in chief been able to issue orders + dialog with generals in almost real time without leaving capital**
    - **Lincoln used ability to read telegraph traffic to and from generals - even though it may have been addressed to others - as way to eavesdrop on headquarters tents of his armies**
    - **He developed this model of electronic leadership on his own**
    - **First national leader to project himself electronically ~ Helped him win the war**
    - **Tom Wheeler, Mr. Lincoln's T-Mails**

Focused Case Study - T-Mail Failure

- **Confederacy did not benefit from telegraph because historically the South had discouraged industrialization which would be at odds with current Southern agricultural existence, including**
  - **Transportation (railroads)**
  - **Communication (telegraph)**
  - **- Tom Wheeler, Mr. Lincoln's T-Mails**

Thing / Hardware - Motorola SCR-536 Handy-Talkie

- **Firsts / Achievements / Uniqueness / Significance**
  - **First hand-held, self-contained handy-talky two-way radio with range of few hundred feet to 1 mile**
- **Place Produced (Company / Institution) ~ Year ~ Country**
  - **Galvin Manufacturing (Motorola) ~ 1940 ~ USA**
- **People involved (Designer)**
  - **Don Mitchell**
- **Type**
  - **Hand-held radio transceiver**
- **Price / Cost**
  - **Text**
- **Size**
  - **5 pounds in weight ~ 13 x 3.5 x 3.1 inches**
- **Computing technology**
  - **5 vacuum tubes, dry battery powered which lasted ~ 1 day, 40" antenna**
- **Computing speed (in MIPS)**
  - **N/A**
- **Primary memory type / technology ~ Size ~ Word length**
  - **N/A**
- **Secondary memory type / technology ~ Size**
  - **N/A**
- **Uses / Applications / Software**
  - **AM communication, 6 per rifle company - 1 in each of 3 rifle platoons, 2 in weapons platoon, 1 for CO**
- **Predecessors - None ~ Successors - Raytheon AN/PRC-6**

Communications Study Summary - Nuclear C4I in 1970's + 1980's

- **Goal**
  - **Allow President of the United States (POTUS) / National Command Authority (NCA) continued C3 of US nuclear forces during (limited) nuclear war**
- **Center of Gravity (Strategy)**
  - **World Wide Military Command and Control System (WWMCCS) established 1962**
- **Technology / Equipment**
  - **Early Warning**
    - **BMEWS radar for ICBMs**
    - **PAVE PAWS radar for SLBMs**
    - **DSP satellite for ICBM launches**
    - **Vela satellite for nuclear blast detection**

- Desmond Ball, Can Nuclear War Be Controlled?, Adelphi Papers, No. 169, 1981

Communications Study Summary - Nuclear C4I in 1970's + 1980's

- ## Technology / Equipment
  - ### Communications
    - Emergency Rocket Communication System (ERCS) to launch ICBMs
    - Looking Glass EC-135 aircraft to launch ICBMs
    - Take Command and Move Out (TACAMO) EC-130 aircraft with Very Low Frequency (VLF) radio to launch SLBMs
    - Extremely Low Frequency (ELF) radio to launch SLBMs
    - National Emergency Airborne Command Post (NEACP) E-4 for POTUS
- ## Training ~ Leadership ~ Morale ~ Tactics
- ## Intangibles
  - An ad hoc C3 system
  - C3 system was physically vulnerable to nuclear attack (blast + radiation / EMP), conventional attack, sabotage
  - C3 system was operationally vulnerable to human error, natural phenomena, equipment failure, jamming, failure of communications security

- Desmond Ball, Can Nuclear War Be Controlled?, Adelphi Papers, No. 169, 1981

Communications Study Summary - Nuclear C4I in 1970's + 1980's

- **Mistakes**
  - **Hotline between Moscow and Washington DC not redundant - how do you talk to other side?**
  - **Paucity of satellite ground stations which are very vulnerable**
  - **Soviets did not believe in idea of limited nuclear war**
- **Outcome**
  - **US C3 over nuclear forces could be maintained for no longer than hours to days**
  - **You can see why they wanted to develop the Internet as a survivable robust communications system to use for nuclear C3**
    - **Disasters Internet has survived: San Francisco earthquake, NY City on 9-11, Indonesian tsunami**
    - **NECAP not even activated on 9-11**

- Desmond Ball, Can Nuclear War Be Controlled?, Adelphi Papers, No. 169, 1981

A Professor That Made A Difference

- **In conclusion, the concept of a "limited" nuclear strike was unworkable**

  "By the time you started to use even small numbers of devices your command and control system starts crumbling. Inevitably you lose your eyes and your ears and you start moving into very large-scale, all-out strategic nuclear exchanges very, very quickly."

  - Desmond Ball, Professor

  "Desmond Ball's counsel and cautionary advice based on deep research made a great difference to our collective goal of avoiding nuclear war."

  - President Jimmy Carter

Communications Case Study Summary - Nuclear C3 Today - E-6B Mercury

- **Goal**
  - **Provide survivable, reliable, endurable airborne C3 between NCA + US strategic forces**
- **Center of Gravity (Strategy)**
  - **Serve as a communications relay <u>or</u> airborne command post**
- **Technology / Equipment**
  - **For TACAMO mission to link NCA with SSBNs - VLF communications system with dual trailing antennas**
    - **Also can provide communications from NCA to all strategic forces**
  - **For Looking Glass airborne command post mission to link NCA with ICBMs - Airborne Launch Control System (ALCS) - UHF communications system - can retarget missiles in silos**
- **Training ~ Leadership ~ Morale ~ Tactics**
  - **16 aircraft ~ EMP hardened ~ 72 hour endurance with in-flight refueling**
  - **Self supporting in TACAMO mission aside from perishables + fuel**
- **Intangibles ~ Mistakes ~ Outcome**
  - **Used for airborne tactical communications relay for convoys in Iraq in 2007**

Communications Case Study Summary - ARPANET

- **Goal**
  - **"There ought to be one terminal that goes anywhere you want to go." - Bob Taylor**
- **Center of Gravity (Strategy)**
  - **Packet switching**
- **Technology / Equipment**
  - **Interface Message Processors (IMPs) [= today's routers] running at 56Kbits per second handle networking independently from mainframe computers**
    - **Leads to network being independent of the computers it connects**
- **Training ~ Leadership ~ Morale ~ Tactics**
  - **Turned on in 1969 ~ 113 nodes by 1983 when it was split into MILNET (68 nodes) and ARPANET (45 nodes) ~ Turned off in 1989 (superseded by NSFNet)**
  - **Network applications - remote login to computers, file transfer, e-mail(!)**
- **Intangibles ~ Mistakes**
  - **Was designed to survive network losses due to unreliability of IMPs + network links ~ Not directly designed to be resistant to nuclear war**
- **Outcome**
  - **World's first operational packet switching network**
  - **Predecessor of Internet**

Focused Case Study - September 11, 2001 - From WTC to WTF

- **First major attack on continental US since 1812**
- **Excellent example of fog and friction of war**
  - **Tracking**
    - **Hijackers turn off IFF**
    - **Radars look outwards from US rather than inwards**
    - **Hijacked planes very difficult to track**
  - **Military personnel keep asking if this is a simulation**
  - **Military personnel unsure if they have authority to shoot**
  - **Best intelligence source is open source - CNN**
- **Military remarkably composed - made right snap decisions**
  - **But UAL Flight 93 could not be found + stopped 90 minutes into attack ~ Military covers this up**
  - **- Michael Bronner, 9/11 Live: The NORAD Tapes, Vanity Fair, August 2006**

Personal Case Study:
What Did You Do During 9/11?

From: XXXXXXXXX@us.med.navy.mil

To: "'Michael P. D'Alessandro, M.D.'" <michael-dalessandro@uiowa.edu>

Subject: RE: Attack on the US

Date: Tue, 11 Sep 2001 16:18:04 -0400

Michael,

Thank you for your vigilance. Let me know if there are any changes in usage patterns over the next few days. Otherwise nothing special right now. This is an unprecedented attack on the US and we don't even have a defined enemy right now.

I am home right now but will monitor my email closely. Please use my XXXXXXXXX@aol.com address as well as the normal addresses during the next few days. Internet traffic has been relatively stable so far. RSB

RSB, MD

Captain, Medical Corps, US Navy

-----Original Message-----

From: Michael P. D'Alessandro, M.D.

Sent: Tuesday, September 11, 2001 3:04 PM

To: XXXXXXXXX@US.MED.NAVY.MIL

Subject: Attack on the US

R,

We've been monitoring events here all day. I've asked our Systems Programmer to keep an especially close eye on the servers for security attacks.

I've just heard on the news that the Atlantic Fleet is being sortied from Norfolk to assist in disaster relief operations.

I've been adding the newly approved content to the server all day yesterday and today and will continue doing so. Please let me know anything else we can at this end to assist as the relief operations move forward.

V/R,

Michael

Personal Case Study: What Did You Do During 9/11?

- **Diary entries**
  - **September 11, 2001 - "Terrorist attacks today against World Trade Center + Pentagon. Watched coverage all day on BBC World TV on QuickTime TV. Served my penance by doing Virtual Naval Hospital Work - got all humanitarian relief info online as US Navy sorties towards New York City.**

  - **September 12, 2001 - "For my sins they gave me a mission…I'm working all week on the Virtual Naval Hospital, getting all new content online.**

  - **September 20, 2011 - "All new Virtual Naval Hospital content online, need to stomp out bugs."**

- **October 7, 2011 - Operation Enduring Freedom begins**

Art of the Possible Today

- **Satellite phones today allow the President to talk to squad leaders**

- **Real time video feeds from Predators allow for micromanagement from Pentagon**

- **Blue Force Tracker makes the battlefield transparent**

History of Military Computers

- **Human calculators**
- **Babbage**
- **Mark I**
- **Enigma bombes**
- **Colossus**
- **ENIAC**
- **SAGE**

Computing Case Study Summary - Charles Babbage 1823

- **Goal**
  - **Build mechanical computer powered by steam that would calculate + print mathematical tables automatically (starting with navigational tables)**
- **Center of Gravity (Strategy)**
  - **Math tables have military uses ~ Get funding from British government**
- **Technology / Equipment**
  - **Difference Engine - started 1823, abandoned 1842**
    - **Automatic calculator that calculated using repeated addition via Method of Differences**
  - **Analytical Engine - started 1834, abandoned at death 1871**
    - **Real computer with store (memory) + mill (CPU)**
    - **Controlled by punch cards for input / output, had program loops, conditional branching, microprogramming**

- Doron Swade, Building Babbage's Dream Machine, New Scientist, June 21, 1991
- Glyn Jones, The Life and Times of a Computing Pioneer, New Scientist, June 21, 1991
- Tom Standage, The Little Engine that Couldn't, Feed Magazine, Jan. 15, 1999

Computing Case Study Summary - Charles Babbage 1823

- **Training ~ Leadership ~ Morale ~ Tactics**
  - **Babbage was diffuse - also invented cowcatcher for trains, speedometer, operational research for improving railway safety, flashing lighthouse**
  - **Babbage had many enemies**
  - **Ada Countess of Lovelace - an ally - the first computer programmer**
- **Intangibles**
  - **Victorian engineering was equal to task of implementing the designs, in terms of precision manufacturing of parts**
- **Mistakes**
  - **They were too expensive to make - there was no mechanical Moore's Law**
- **Outcome**
  - **Babbage dies in obscurity, derided by contemporaries**
  - **Difference Engine built in 1990's by Science Museum**
  - **Analytical Engine never built (…yet - see Plan 28…)**
  - **Directly influenced Howard Aiken, creator of IBM / Harvard Mark I Computing Engine**
  - **Babbage today regarded as father of computing**

- Doron Swade, Building Babbage's Dream Machine, New Scientist, June 21, 1991
- Glyn Jones, The Life and Times of a Computing Pioneer, New Scientist, June 21, 1991
- Tom Standage, The Little Engine that Couldn't, Feed Magazine, Jan. 15, 1999

Computing Case Study Summary - Google

- **Date - The present**
- **Goal**

  "Google's mission is to organize the world's information and make it universally accessible and useful."

- **Center of Gravity (Strategy) [Deliver results in]**
  - **Delivers results with sub second response time - ultimately wants to do so at speed of light**
  - **Search has 4 components - comprehensiveness, relevance, speed, user experience**
- **Technology / Equipment**
  - **Googleplex = Logistics, logistics, logistics**
    - **Today there are 25 data centers, each is the size of 3 football fields = 3 * (100 x 50 meters) = 15,000 square meters**
    - **Each data center holds tens of thousands of computer servers located near hydroelectric power**
    - **Own their own fiber network**

- **Markofff John + Hansell Saul, Hiding in Plain Sight, Google Seeks More Power, New York Times, June 14, 2006**

Computing Case Study Summary - Google

- **Training ~ Leadership ~ Morale**
  - **The apex of the pyramid in Silicon Valley**
- **Tactics [Interface]**
  - **Free text search tied to page rank**
- **Intangibles [Indexes]**
  - **Googol = 1 x 10^{100}**
  - **Indexes "tens of billions (10^9) of pages" in June 2007**
- **Mistakes**
  - **Heat!**
- **Outcome**
  - **Number one search engine running away from rivals**
  - **Google CEO Eric Schmidt has long described the company's collection of massive data centers around the world as the world's largest supercomputer**

- Markofff John + Hansell Saul, Hiding in Plain Sight, Google Seeks More Power, New York Times, June 14, 2006

The Data Center is the Computer

"In the early 1950's a person could walk inside a computer and by 2010 a single computer (or cluster) with millions of processors will have expanded to the size of a building."

- Gordon Bell, computer engineer

- Gordon Bell, Bell's Law for the Birth and Death of Computer Classes, Communications of the ACM, Jan 2008 pp.86-94

"The data center is now the computer"

- Luis Barroso, computer engineer, Google

…companies like Google are now hiring computer architects

- David A. Patterson, The Data Center is the Computer, Communications of the ACM, Jan. 2008, p.105

Google is the Walk-Through Computer

- **~ Dozen data centers with "hundreds of thousands" of servers**
- **Indexes 20 billion Web pages / day**
- **Handles 3 billion search queries / day**
- **Conducts millions of ad auctions in real time**
- **Services 425 million Gmail accounts**
- **Plays millions of YouTube videos / day**
- **Has its own Red Team (Site Reliability Engineering Team) to attack Google in Disaster Recovery Testing**
- **Google's network + data centers are ultimate competitive advantage**
  - **http://www.google.com/about/datacenters/**

- Steven Levy, Google Throws Open Doors to Its Top-Secret Data Center, Wired, Oct. 2012

Military Applications of Google

- **Intelligence**
  - **Google Search for discovery**
  - **Google News for open source intelligence**
  - **GMail for communications intercept of suspects**
- **Mission Planning**
  - **Google Maps**
- **Mission Rehearsal**
  - **Google Earth**
- **Targeting**
  - **Google Maps**
- **Communications**
  - **GMail, Talk (Instant messaging)**
- **Information warfare**
  - **YouTube**

From Search Engine to Question Answering System Through Artificial Intelligence

- ## Artificial Intelligence
  - ### Arises not through rules but through statistics
- ## Example question answering systems
  - ### Watson - IBM
    - Inspiration - computer on Star Trek
    - Interface - natural language processing
    - Approach - statistical computation - using hundreds of statistical algorithms simultaneously, then chooses best answer from amongst them
    - Hardware - very fast, lots of memory

- Clive Thompson, What is IBM's Watson? New York Times Magazine, June 20, 2010
- James Bamford, The New Thought Police, for PBS Nova Feb 3, 2009
- Steven Levy, The AI Revolution is On, Wired, Jan 2011

From Search Engine to Question Answering System Through Artificial Intelligence

- **Example question answering systems**
  - **Aquaint (Advanced Question Answering for Intelligence) - NSA**
    - **Approach - inhale all public information on Internet along with all personal information on your phone calls, credit card receipts, social networking posts, GPS tracks, cell phone geolocation, Internet searches. library loan records, EZPass toll records**
    - **Goal - Use this information to know where people are, what they are doing, what they are thinking**
      - **"We are building HAL" - Former NSA researcher**
    - **Part of the surveillance-industrial complex**
      - **Big Brother is beginning to watch everything you do**

- Clive Thompson, What is IBM's Watson? New York Times Magazine, June 20, 2010
- James Bamford, The New Thought Police, for PBS Nova Feb 3, 2009
- Steven Levy, The AI Revolution is On, Wired, Jan 2011

From Search Engine to Question Answering System Through Artificial Intelligence

- **Example question answering systems**
  - **WolframAlpha computational knowledge engine**
    - **For the rest of us…**

- **Clive Thompson, What is IBM's Watson? New York Times Magazine, June 20, 2010**

- **James Bamford, The New Thought Police, for PBS Nova Feb 3, 2009**

- **Steven Levy, The AI Revolution is On, Wired, Jan 2011**

"People ask me if this is HAL. HAL's not the focus; the focus is on the computer on 'Star Trek,' where you have this intelligent information seek dialogue, where you can ask follow-up questions and the computer can look at all the evidence and tries to ask follow-up questions. That's very cool."

"The computer on 'Star Trek' is a question-answering machine. It understands what you're asking and provides just the right chunk of response that you needed. When is the computer going to get to a point where the computer knows how to talk to you? That's my question."

"Wouldn't it be great to be able to communicate with the computer like Captain Picard or Captain Kirk does on "Star Trek," where you can fluently dialogue with an information-seeking computer that can understand what you're asking, ask follow up questions, and get exactly at the information that you need? That would be incredible. That's kind of this motivating vision, and whether Watson loses or not in this big game is really not the point. The point is we were able to take a step forward in that direction, and I think that's what we're most excited about."

- David Ferrucci, PhD, IBM, principal investigator DeepQA / Watson

Computing Case Study Summary - Star Trek

- **Date**
  - **USS Enterprise in The Original Series / The Animated Series - Early 23rd century**
- **Goal**

  "Deep in the heart of this ship are our computer banks. They operate the entire ship. They also contain the whole of human + humanoid knowledge. They are indisputably reliable. Our lives depend on them."
- **Center of Gravity (Strategy) [Deliver results in]**

  "In a matter of a few seconds, we can obtain an answer to any factual question, regardless of its complexity."
- **Technology / Equipment**
  - **Data center 1,900 square meters**
- **Training ~ Leadership ~ Morale**

- Schmucker KJ, Tarr RM, The Computers of Star Trek, Byte, December 1977

Computing Case Study Summary - Star Trek

- **Tactics [Interface]**
  - **Unrestricted conversational voice input / output**
  - **Automatic programming in natural language**
  - **Computer analysis of complex, ill defined problems**
    - **Semantic comprehension of natural language ~ Computer understanding of the meaning of a statement ~ Has an English compiler which can accept + correctly process unrestricted English**
- **Intangibles [Indexes]**
  - **Indexes everything - cached copy of United Federation of Planets knowledge because transmission speed in space via subspace radio is too slow**
  - **Estimated to be 10^{22} bits = 10^{14} volumes, each volume = 1,000 pages => 10^{17} pages - each page is 1,000 words => 10^{20} words - each word is 6-8 letters =>10^{21} words => each word represented by 8 bits => 10^{22} bits**
- **Mistakes**
  - **Computer security still a problem**
- **Outcome**
  - **Works quite well**

- Schmucker KJ, Tarr RM, The Computers of Star Trek, Byte, December 1977

Computing Case Study Summary - Multivac

- **Date - 2061 to end of time**
- **Goal**
  "How can the net amount of entropy of the universe be massively decreased?" => "How may entropy be reversed?"
- **Center of Gravity (Strategy) [Deliver results in]**
  - **Minutes to seconds**
- **Technology / Equipment**
  - **2061 - Multivac - "miles and miles" to Planetary AC's "hundreds of square miles" in size ~ Self adjusting + self correcting**
  - **2161 - Microvac - half the volume of a space ship**
  - **22061 - Galactic AC - 1,000 feet across on its own planet**
  - **1,022,061 - Universal AC - 2 foot diameter globe, diffusely woven into fabric of hyperspace ~ self designing + self replicating**
  - **100,000,000 - Cosmic AC - in hyperspace, neither matter nor energy**
  - **10,000,000,000 - AC**
  - **- Asimov, Isaac, The Last Question**

Computing Case Study Summary - Multivac

- **Training ~ Leadership ~ Morale**
- **Tactics [Interface]**
  - Multivac - Typing input ~ Printing output
  - Microvac - Voice input ~ Printing output
  - Galactic AC - Voice input + output
  - Universal AC - Thought input + output
  - Cosmic AC + AC - Complete assimilation of man into computer
- **Intangibles [Indexes]**
  - Indexes everything
- **Mistakes**
  - Once last question was answered there was no man left to give answer to…so AC does a demonstration instead
- **Outcome**
  - "Insufficient data for a meaningful answer."=> "Let there be light!"
  - Asimov, Isaac, The Last Question

Personal Case Study - Touching the Internet in 1988

- **Role - Visitor**
- **Story**
    - **At ARPA contractor in suburban Washington DC, I got to reach out and touch an ARPANET Interface Message Processor (IMP)**
        - **Now called a router**
        - **A physical manifestation of ARPANET**
            "Touching the cloud"

Personal Case Study - Mark Herman

- **Role - Wargame designer for US government and civilians**
- **Story**
  - **Apprenticeship in game design at Simulations Publications, Inc.**
  - **President of Victory Games**
  - **Vice President of Modeling, Simulation, Wargaming, and Analysis for Booz Allen Hamilton**
  - **Publishing prolifically for GMT Games**
    - **Incredible on line support for his games**

The Senior Commander's Conundrum

"How do I manage risk in an environment of uncertainty?"

"My day job as a Defense Consultant has brought me into contact with many four star generals and admirals. To further my professional understanding of my craft I have asked every one of them a single question, 'what is the most important thing that they focus on in warfare.' Every one of them essentially said the same thing, 'how to mange risk in an environment of uncertainty.' "

- Mark Herman, My Philosophy Behind Card Driven Game Design, C3i Magazine #17, 2005

God of War vs. Fog of War

"My continuing study of warfare both for game design purposes and professionally have convinced me that real combat is chaos because senior decision makers lack perfect knowledge. This has been the case for all wars including recent ones where people got killed because the real information was absent or not believed. The more successful commanders were those who were able to succeed in this constant environment of imperfect information. Consequently I have come to the view that the most important variable to simulate in a wargame is uncertainty."

- Mark Herman

Class Simulation

- **C4I aspects**

Poem

IF you can keep your head when all about you

Are losing theirs and blaming it on you,

If you can trust yourself when all men doubt you,

But make allowance for their doubting too;

If you can wait and not be tired by waiting,

Or being lied about, don't deal in lies,

Or being hated, don't give way to hating,

And yet don't look too good, nor talk too wise:

If you can dream - and not make dreams your
   master;

If you can think - and not make thoughts your aim;

If you can meet with Triumph and Disaster

And treat those two impostors just the same;

If you can bear to hear the truth you've spoken

Twisted by knaves to make a trap for fools,

Or watch the things you gave your life to, broken,

And stoop and build 'em up with worn-out tools:

If you can make one heap of all your winnings

And risk it on one turn of pitch-and-toss,

And lose, and start again at your beginnings

And never breathe a word about your loss;

If you can force your heart and nerve and sinew

To serve your turn long after they are gone,

And so hold on when there is nothing in you

Except the Will which says to them: 'Hold on!'

If you can talk with crowds and keep your virtue,

' Or walk with Kings - nor lose the common touch,

if neither foes nor loving friends can hurt you,

If all men count with you, but none too much;

If you can fill the unforgiving minute

With sixty seconds' worth of distance run,

Yours is the Earth and everything that's in it,

And - which is more - you'll be a Man, my son!

- Rudyard Kipling, If

Questions for Further Discussion

- **Review how the British, in the Battle of Britain, used technology in the form of radar, to aid C4I and thus decrease the fog of war and friction in the battle**

- **Would a nuclear war have provided the ultimate fog of war?**

- **What are the lessons of the computer revolution on warfare? -- or is it too early to tell?**

Reading Assignments

- **TED Talks for this Topic**
  - **http://www.warstudiesprimer.org/ToLearnMore.html**

Recommended Reading to Learn More

- **Non-fiction**
  - **Peggy Kidwell + Paul Ceruzzi - Landmarks in Digital Computing**
  - **Tracy Kidder - Soul of a New Machine**
- **Fiction**
- **Movies**
  - **Dr. Strangelove**
- **Simulations**

Conclusion

"He showed you the true nature of war - it was never a chess game calmly between two masters, it was always bloody chaos."

- Antony Beevor on John Keegan's The Face of Battle

Topic 15

How To Win A War

A Discussion of Strategy

Song

It was back in nineteen forty-two,
I was a member of a good platoon.
We were on maneuvers in-a Loozianna,
One night by the light of the moon.
The captain told us to ford a river,
That's how it all begun.
We were -- knee deep in the Big Muddy,
But the big fool said to push on.

The Sergeant said, "Sir, are you sure,
This is the best way back to the base?"
"Sergeant, go on! I forded this river
'Bout a mile above this place.
It'll be a little soggy but just keep slogging.
We'll soon be on dry ground."
We were -- waist deep in the Big Muddy
And the big fool said to push on.

Song

The Sergeant said, "Sir, with all this equipment
No man will be able to swim."
"Sergeant, don't be a Nervous Nellie,"
The Captain said to him.
"All we need is a little determination;
Men, follow me, I'll lead on."
We were -- neck deep in the Big Muddy
And the big fool said to push on.

All at once, the moon clouded over,
We heard a gurgling cry.
A few seconds later, the captain's helmet
Was all that floated by.
The Sergeant said, "Turn around men!
I'm in charge from now on."
And we just made it out of the Big Muddy
With the captain dead and gone.

- Pete Seeger, Waist Deep in the Big Muddy

Thematic Quote

"The object of war is to break the will of the other side by striking at his vital center of gravity"

- Clausewitz

Thematic Quote

"Tactics is the art of using troops in battle; strategy is the art of using battles to win the war."

- Clausewitz

Thematic Quote

"When (men) go to war, what they want is to impose on their enemies the victor's will and call it peace."

- Saint Augustine

Thematic Quote

"Strategy without tactics is the slowest route to victory. Tactics without strategy is the noise before defeat."

- Sun Tzu

Thematic Quote

"No bastard ever won a war by dying for his country. He won it by making the other poor dumb bastard die for his country."

- General George S. Patton, Jr.

The Painting

Painting Name

    - Artist's Name

    (Location of painting)

The Question

How do you win a war?

How do you lose a war?

Is it always clear who won a war?

"Gentlemen we have run out of money. Now we have to think."

- Winston Churchill

"However beautiful the strategy, you should occasionally look at the results."

- Winston Churchill

"A lot of people in Washington talk about strategy. Most of them can spell the word, but that's all they know of it."

- John Boyd

"It is not true the Pentagon has no strategy. It has a strategy, and once you understand what that strategy is, everything the Pentagon does makes senses. The strategy is, don't interrupt the money flow, add to it."

- John Boyd

- **"The two questions which we know throughout history that have been vital to ask before you launch any military operation:**
  - **What are our objectives? and**
  - **Are they attainable?**
- **And its amazing how often throughout history politicians have launched troops without asking those questions."**

  - Max Hastings, military historian

"It's the oldest strategic planning story: planning for failure is easy, but planning for success - especially runaway success - is amazingly hard"

- Thomas P.M. Barnett

What is National Strategy?

"…defined as "aligning goals with resources.""
                                        - Bill Sweetman

Strategy vs. Grand Strategy

- **Strategy = How to use military forces**
- **Grand strategy = Why to use military forces**

   "Grand strategy is nothing more than the art of making more friends and allies than enemies."

   - Chet Richards, The Fight For Friends, Armed Forces Journal, April 2008

What is Grand Strategy?

- **A grand strategy focused our nation's actions - political, economic, and military - so as to:**

    - **Increase our solidarity, our internal cohesion**

    - **Weaken our opponents' resolve and internal cohesion**

    - **Strengthen our allies' relationships to us**

    - **Attract uncommitted States to our cause**

    - **End conflicts on favorable terms, without sowing the seeds for future conflicts**

        - John Boyd

What is Grand Strategy?

"A grand ideal, overarching theme, or noble philosophy that represents a coherent paradigm within which individuals as well as societies can shape and adapt to unfolding circumstances -- yet offers a way to expose flaws of competing or adversary systems. Such a unifying vision should be so compelling that it acts as a catalyst or beacon around which to evolve those qualities that permit a collective entity or organic whole to improve its stature in the scheme of things."

- John Boyd, Patterns of Conflict, Chart 143

Napoleonic Strategy

- **The destruction of the enemy's armies is the main objective**

- **This objective is essential and every man must be directed towards attaining it**

- **Move always for effect, always threaten the enemy's flanks and rear to confuse and unbalance him**

- **Always attempt to cut the enemy's line of communications, supply and retreat**

- **Always preserve your own lines of communication, supply and retreat**

Cost of Grand Strategy Done Wrong

- **Germany invaded France through neutral Belgium in 1914 to quickly knock France out of the war so it could concentrate on Russia**
    - **Brings Great Britain into war to defend Belgium**
    - **Invasion of neutral enrages world, allows Britain to portray Germany as unmitigated evil force**
        - **Reinforced by continued German grand strategy blunders of Zimmerman Telegram and unrestricted submarine warfare that morally isolates it**
        - **Britain escapes criticism while conducting even more ruthless commerce blockade of Germany**
        - **Even America with large German population + widespread anti-British sentiment joins war against Germany**
    - **At Versailles Conference Britain imposes vindictive terms on Germany that paves way for Nazi Germany**
    - **Today's problems in Balkans, Middle East, Russian heartland, Caucus can be traced back to Word War I**
    - **- Chuck Spinney, Criteria of a Sensible Grand Strategy**

US Grand Strategy in World War II: Europe First

The three primary goals of the global war, had to be "the security of England, the retention of Russia in the war as an active war ally, and the defense of the Middle East."

"All other operations must be considered highly desirable rather than in the mandatory class."

(Memo from Dwight David Eisenhower to George Marshall in March 1942)

- Alfred D. Chandler, *Papers of Eisenhower, The War Years, p. 205*

(Holding the Mideast prevented the linkup of Germany and Japan and also kept open the supply line to Russia, at a time when keeping Russia in the war was essential.)

Major Albert C. Wedemeyer's mid-1941 Victory Plan for the United States in World War II

- **4 questions**
  - **1) What is the national objective of the United States?**
  - **2) What military strategy will be devised to accomplish the national objective?**
  - **3) What military forces must be raised in order to execute that military strategy?**
  - **4) How will those military forces be constituted, equipped and trained?**

- Charles Kirkpatrick, Computing the Requirements For War, The Logic of the Victory Plan of 1941

Major Albert C. Wedemeyer's mid-1941 Victory Plan for the United States in World War II

- 4 questions
  - 1) What is the national objective of the United States?
    - The United States meant to eliminate totalitarianism from Europe and, in the process, to be an ally of Great Britain; further, to deny the Japanese undisputed control of the western Pacific
  - 2) What military strategy will be devised to accomplish the national objective?
    - Keep the United Kingdom and the Soviet Union in the war while the United States built and trained its forces, mobilized a war economy, and built up a base in Great Britain for the eventual attack on Germany
  - 3) What military forces must be raised in order to execute that military strategy?
    - American economic power was as much a weapon of war as military forces, and had to reserve adequate skilled manpower to meet the demands of mobilization and lend lease, as well as to maintain the internal order of the society
  - 4) How will those military forces be constituted, equipped and trained?
    - An armored and mechanized army that, when used in conjunction with Allied air power, could concentrate decisive mass at any given point to defeat Axis forces

- Charles Kirkpatrick, Computing the Requirements For War, The Logic of the Victory Plan of 1941

How The Second World War Was Won

"But he (Andrew Roberts in his book "Masters and Commanders: How Roosevelt, Churchill, Marshall and Alanbrooke Won the War in the West") is admirable for his honesty, rare in British historians, over two vital matters. The first is that in the Wehrmacht the Allies were facing an army very much better than their own - better equipped, better commanded, better trained, more highly motivated - and it continued to be so until the very last days of the war. Secondly, his Masters and Commanders may have "won the war in the West", as he puts it, but they did not win the war as such. Four out of every five of the Germans killed in combat died on the Eastern Front.

By diverting German military strength, and devastating German industry and cities with their bombing, the Western allies certainly made, as he puts it, "a vital contribution". But it was a contribution to a war being fought, and ultimately won, on the Eastern Front. It is time, after more than half a century, that we got this into proportion."

- Michael Howard, How The West Was Won, StandPoint, October 2008

The Superbattlefield - Phillip O'Brien's How the War Was Won

- **Superbattlefield is distinguishing characteristic of modern war**
- **Instead of an isolated battlefield, superbattlefield extends over thousands of miles including all aspects of building, training, deploying military forces**
- **Individual battles of World War II had little consequence on overall outcome of war - there were no decisive battles in World War II - the superbattlefield was where World War II was won**
  - **Allied militaries attacked pre-production phase (transport of materials to be used in production) through unrestricted submarine warfare against Japan and bombing rail lines in Germany**
  - **Allied militaries attacked production phase by attacking factories in Japan and Germany**
  - **Allied militaries attacked Japanese and German forces as they tried to deploy newly built forces**
- **The Japanese and Germans lost because they could not protect their own pre-production, production and deployment of new forces phases - and they could not attack the equivalent Allied phases**
- **So it was not individual battles that won or lost the war but instead the destruction of the systems that allow a side to make battle**

- David Alman, A More Holistic Framework for Military Competition: How the War Might Be Won, The Strategy Bridge, July 7, 2020

What Were They Thinking?
What Was Japan's Path to Victory?
Japanese Grand Strategy in World War II

- The US was freezing Japan's financial assets so Japanese could not pay for imports / exports so they felt they had to do something (see Bankrupting the Enemy)

- Japan thought the Soviets were almost finished off by the Germans by this time (fall 1941) so they did not have to worry about them

- Japanese thought they would start a limited war, get what they want, and negotiate for what they wanted, as they had in the Sino-Japanese and Russo-Japanese wars, and make it so costly for the US to take it back that the US would agree to negotiate, but unconditional surrender demand by Roosevelt took this option away

- Unconditional surrender is not a historical norm - was a Roosevelt invention that makes Germans + Japanese fight to last man

- Attack on Pearl Harbor is about improving the balance of power by sinking US capital ships in the Pacific so the Japanese can attack south into Dutch East Indies without worrying about US Navy because force ratio goes from 1:1 to 3:1 odds after Pearl Harbor

- Philippines is astride Japanese supply lines to Dutch East Indies so the Japanese have to go after the Philippines to secure their flank

- …

- Okinawa is costly victory for US and changes calculus for US + is beginning of Japanese strategy of making it so costly for US starting to work…So US starts thinking about air + naval blockade of Japan to achieve victory and Truman is looking for other solutions...Truman learns about atomic bomb 2 weeks after becoming president and uses atomic bomb to avoid taking 33-50% casualities in invasion of Japan + to end war quickly because US public wants war over

- Soviet Union and Japan never declared war on each other...Great irony is that at the end of the war in summer 1945 when the Japanese asked the Soviets to help them negotiate a peace with the US, the Soviets told them they were declaring war on them

- Mark Herman, Wargames To Go Podcast, Nov. 10, 2015

Why the US Has an Absence of Coherent Strategic Thinking

- **1. Person at the top selected for other skills**
  - **"The typical political leader of the contemporary managerial society, is a man with a strong will, a high capacity to get himself elected, but no very great conception of what he is going to do when he gets into office." - Henry Kissinger, Secretary of State**
- **2. Government is full of people trained as lawyers**
  - **In making foreign policy, "you have to know what history is relevant." But lawyers were "the single most important group in government" and their principal drawback was "a deficiency in history." "The clever lawyers who run our government," have weakened the nation by instilling a "quest for minimum risk which is our most outstanding characteristic." - Henry Kissinger, Secretary of State**

- Niall Ferguson, The Real Obama Doctrine, Wall Street Journal, Oct. 9, 2015

The US Has No Global Strategy

- **Real problem with US policy has been the absence of any clear strategy like the one that guided the US in the Cold War**

  "We all implicitly accepted [George] Kennan's view that if we contained the Soviets long enough, their internal contradictions would finally lead to their collapse, even if nobody had any idea when.

  If you accept the premise that we face a generation-long period of turbulence and violence in the Middle East, the lack of an overarching strategy for how you react to a region in flames is a problem. Are there fires we should just let burn out? Who are our friends? Who should we support?"

  - Robert Gates, US Secretary of Defense

- Holman Jenkins, The US Has No Global Strategy, Wall Street Journal, Jan. 29, 2016

Grand Strategies Throughout History

- **The Wooden Walls - England**

- **Empire - England**

- **Isolationism - US**

- **Monroe Doctrine - US**

- **Containment of Soviet Union in Cold War - US**

- **Globalization - Core/Gap (Barnett) as solution to the Failed State (Peters/Kaplan)**

How to Execute a Strategy

"There are four enormous tasks that strategic leaders have to get right.

The first is to get the big ideas right.

The second is to communicate the big ideas throughout the organization.

The third is proper execution of the big ideas.

The fourth is capture best practices and lessons and cycle them back through the system to help refine the big ideas"

- General David Petraeus

How to Execute a Strategy

"Feed success, starve failure"

- Anonymous

Means of Accomplishing Strategies

- **John Boyd and the OODA loop - this is how command works, when you master this loop you win**

- **Effects-Based Operations**

- **Shock and Awe**

- **Centers of Gravity - targeting them**

    "The hub of all power and movement, on which all depends." - Clausewitz's definition of center of gravity

What are the Tactical, Operational, and Strategic Levels of War?

"The operational level of war lies between strategy and tactics. While great commanders have always thought and fought at the operational level, the concept was not formally recognized until the 19th century. As usual, it was the Prussian army that led the way...

The U.S. Army did not officially recognize the operational level of war until 1982, but the tsarist Russian army and later the Soviets picked up on it. By 1944-45, the Red Army was as competent at what they called "operational art" as the Wehrmacht. That was never true of the Western allies.

The Russian term, operational art, is a good one, because unlike tactics or strategy it is not a thing but a link. It is the art, not science, of using tactical events, battles and refusals to give battle, victories and sometimes also defeats (from the North Vietnamese perspective, the Tet offensive was a tactical defeat but a decisive operational victory) to strike as directly as possible at the enemy's strategic center. Because it resorts to battle only when and where necessary, operational art is a great economizer of fighting strength-even a battle won eats up soldiers, fuel, equipment, and, most importantly, time."

- William S. Lind, Unfriendly Fire, On War, June 27, 2012

The Principles of War

- **1. The Principle of the Objective**
- **2. The Principle of the Offensive**
- **3. The Principle of Mass**
- **4. The Principle of Economy of Forces**
- **5. The Principle of Maneuver**
- **6. The Principle of Surprise**
- **7. The Principle of Security**
- **8. The Principle of Simplicity**
- **9. The Principle of Unity of Command**

- United States Military Academy Handbook (1952 Bugle Notes)

9 Principles of War

- **Mass - Concentrate combat power at the decisive place and time**
- **Objective - Direct every military operation towards a clearly defined, decisive, and attainable objective**
- **Offensive   - Seize, retain, and exploit the initiative**
- **Surprise - Strike the enemy at a time, at a place, or in a manner for which he is unprepared**
- **Economy of force - Allocate minimum essential combat power to secondary efforts**
- **Maneuver   - Place the enemy in a position of disadvantage through the flexible application of combat power**
- **Unity of command - For every objective, ensure unity of effort under one responsible commander**
- **Security - Never permit the enemy to acquire an unexpected advantage**
- **Simplicity - Prepare clear, uncomplicated plans and clear, concise orders to ensure thorough understanding**

- Army Field Manual FM-3 Military Operations

Terms of Operational Art

- **Center of Gravity**
  - **The center of gravity of an armed force refers to those sources of strength or balance. It is that characteristic, capability, or locality from which the force derives its freedom of action, physical strength, or will to fight.**

- **Lines of Operation**
  - **Lines of operation define the directional orientation of a force in relation to the enemy. Lines of operation connect the force with its base or bases of operation on the one hand and its operational objective on the other.**

- **Culminating Points**
  - **Unless it is strategically decisive, every offensive operation will sooner or later reach a point where the strength of the attacker no longer significantly exceeds that of the defender, and beyond which continued offensive operations therefore risk over extension, counterattack, and defeat. In operational theory, this point is called the culminating point.**

Tactics 101

- Planning the axis of advance
- Hitting one area hard
- Refusing a flank
- Keeping a reserve back

Commander's Briefing

- **General situation**
- **Enemy situation**
- **Your team's mission**
- **Your routes of movement**
- **Your objectives**
- **Simple scheme of maneuver**

What is a Pyrrhic Victory?

- **A victory that is offset by staggering losses**
    - **- American Heritage Dictionary**
- **Pyrrhus**
    - **Greek King of Epirus who defeated the Romans at Heraclea (280 BC) and Asculum (279 BC) despite his own staggering losses**

    "Another victory like this and I will be ruined"

Setting Victory Conditions and Achieving Them

"Iraq is like a wargame, where the people playing the US did not read the victory conditions before they started the game"

- Joseph A. Murphy, III

What is the Difference Between a Battle and a War?

"Battle is about breaking things and killing people. War is about achieving a particular political end state"

- Frederick Kagan

"...to achieve that end state...you're going to have to use diplomacy...you're going to...engage in stability and support operations...you're going to have to interact with the local population...you're going to be in a much more complicated environment than one in which you simply have targets and weapons systems that attack them."

- Frederick Kagan

"Nations do not wage war for war's sake, but in pursuance of policy. The military objective is only the means to a political end. Hence the military objective should be governed by the political objective...The objective in war is a better state of peace - even if only from your own point of view. Hence it is essential to conduct war with constant regard to the peace you desire."

- B.H. Liddell-Hart

How Can You Win The Battles But Lose The War?

"One of the rules of warfare is that a higher level dominates a lower. You can be brilliant tactically, but if you are outmaneuvered operationally, you lose. You can be consistently superior at the operational level, but if you are defeated strategically, you lose."

- William Lind

How Can You Win the Battles But Lose the War?

- **Winning battles is not enough to win wars:**

"The North Vietnamese Army never defeated US forces on the field of battle."

- Colonel Harry Summers, USA

"That may be so, but it is also irrelevant."

- North Vietnamese Army Colonel

How Can You Win the Battles But Lose the War?

"Doubt, our modern crown of thorns"

- T.E. Lawrence

"You have to have men who are moral... and at the same time who are able to utilize their primordial instincts to kill without feeling... without passion... without judgment... without judgment. Because it's judgment that defeats us."

- Colonel Kurtz in Apocalypse Now

"Defeat is the result of men not having the courage to be either completely good or completely bad"

- Niccolo Machiavelli

Staff Ride - Battle of Marathon September 12, 490 BC

- **Prelude - Politics - Strategy**
  - Persians - crush Athens for supporting revolt of Ionian Greeks + burning Sardis ~ Greeks - survive
- **Approach of armies to battlefield - Why was battle fought here**
  - Plain of Marathon had good grazing for Persian horses
  - If Athenians moved forces to Marathon, Athens would be vulnerable to attack by sea
- **Leaders**
  - Persians - Darius I via Datis
  - Greeks - Miltiades (Athenian)
- **Weapons - Direct and indirect**
  - Greek - hoplite - heavy infantry with round shield, bronze helmet, cuirass (body armor), greaves (leg guards), long spear, short sword
  - Persian - no armor (except Immortals), lightweight wood shield, bow, short spear
- **Order of Battle**
  - Persians - 25,000 infantry + archers, 1,000 cavalry
  - Greeks - 9,000 Athenians + 1,000 Plataen infantry (Spartans not present due to religious festival)
  - Persians - are conquered people fighting under compulsion
  - Greeks - underdogs size wise, high morale as fighting for freedom + Marathon is sacred to Hercules + Theseus
- **Organization - Units and formations**
  - Greeks organized in phalanx
- **Command, control, communications, intelligence**
  - Text
- **Tactics**
  - Persians - not as well trained ~ Greeks - very well trained
- **Weather**
  - Text
- **Terrain**
  - Greeks use mountain passes to bottle up Persians on plain of Marathon + use marshes to guard their flanks
- **Operational**
  - Text
- **Chronologic narrative of battle taking note of friction and fog**
  - Athenians + Plataeans hold defensive position astride mountain pass leading to plain of Marathon for 5 days, waiting for Spartan reinforcements
  - On fifth day Persians split force, send cavalry to Athens by sea, send infantry forward to cover them
  - Athenian hoplites surprise attack + charge downhill to get under Persian archer's arrows
  - Athenian center is weak + flanks / wings are strong - Greek flanks were protected by marshes
  - Persians break through center of Athenians, but Greek wings encircle + annihilate them
  - 6,400 Persians killed, 192 Athenians killed, 11 Plataens killed
  - Pheidippides runs 26 miles to Athens - proclaims "Nike!" - then he dies
  - Miltiades force marches army to Athens, confronts Persians at Acropolis, breaks their morale + they flee
- **Decisions - What good and bad ones were made**
  - Persians split their forces and sent part of them to Athens because Persians hoping for some Athenians to betray Athens from within
- **OODA loop - Who is inside the other's**
  - Greeks inside of Persians
- **Who thought they won, who really won**
  - Greeks ~ Greeks
- **What effect did it all have - Aftermath of battle**
  - Triumph of Greek democracy - shifts balance of power from East to West
  - Triumph of variety of individual over monotonous uniformity of an empire - of democracy over despots

Staff Ride - Thermopylae August 18-20th, 480 BC

- **Prelude - Politics - Strategy**
  - Persians want revenge for Marathon 10 years before
- **Approach of armies to battlefield - Why was battle fought here**
  - Greeks hold pass of Thermopylae, only way from Attica to Thessaly and southern Greece, thus giving Greek fleet time to destroy Persian Fleet at Straits of Artemisium
- **Leaders**
  - Persians - King Xerxes I ~ Greeks - King Leonidas of Sparta
- **Logistics**
  - Persians bridging the Hellespont - Xerxes I with a very large force at the end of a very long line of supply
- **Weapons - Direct and indirect**
  - Greek - hoplite - heavy infantry with round shield, bronze helmet, cuirass (body armor), greaves (leg guards), long spear, short sword
  - Persian - no armor (except Immortals), lightweight wood shield, bow, short spear
- **Order of Battle**
  - Persians - 1.8 million (or 180,000) men total - perhaps 30,000 of those fought and 10,000 of them were Immortals, 800 triremes
  - Greeks - 7,000 Spartans, Phokians, Thebans (only 300 Spartans due to religious festivals)
- **Organization - Units and formations**
  - Greeks organized in phalanx, 8 men deep with overlapping shields
- **Command, control, communications, intelligence**
  - Text
- **Tactics**
  - Text
- **Weather**
  - Text
- **Terrain**
  - Coastal pass was approximately 100 meters wide
- **Operational**
  - Text
- **Chronologic narrative of battle taking note of friction and fog**
  - Greeks make their stand in front of Middle Gate which is 20-30 yards wide - Spartans stand 50 men wide and 6 deep
  - Greeks easily hold on first day, on second day Immortals attack and fail
  - Leonidas holds against frontal assaults for 2 days
  - Traitor Ephialtes shows Xerxes mountain trail to allow flanking maneuver to allow attack from behind
  - Immortals take mountain trail and destroy Phokians who were holding the pass
  - Realizing they were outflanked, rearguard of 1,000 - 2,000 Spartans, Thebans, Thespians (including 300 Spartans) makes final stand on low mound behind Middle gate and lets rest of Greeks escape
  - 2,000 Greeks killed, 20,000 Persians killed
- **Decisions - What good and bad ones were made**
  - Good choice of terrain by Greeks
- **OODA loop - Who is inside the other's**
  - Greeks were inside Persians
- **Who thought they won, who really won**
  - Persians thought they won, Greeks really won
  - "Go tell the Spartans, stranger passing by,
  - That here, obedient to Spartan law, we lie" - Simonides
- **What effect did it all have - Aftermath of battle**
  - Defeat unites Greek city-states by setting example of free men fighting for their country + freedom
  - Persians advance on and destroy Athens Sept. 5, 480 BC
  - Greek fleet withdraws to Salamis, sets up Battle of Salamis - huge naval defeat for Persians Sept. 23, 480 BC
  - After Battle of Platea in August 479 BC Persians leave Greece

Staff Ride - Battle of Salamis September 23, 480 BC

- **Prelude - Politics - Strategy**
  - Greeks are in retreat from Persians after Thermopylae, Athens has been sacked + burned, Persians want to finish Greeks off
- **Approach of armies to battlefield - Why was battle fought here**
  - Greek fleet fought to draw at Battle of Artemisium where it prevented Persians from bypassing Thermopylae by sea by blockading Straits of Artemisium, Greeks retreat to Salamis to regroup
- **Leaders**
  - Persians - Xerxes I ~ Greeks - Themistocles
- **Logistics**
  - Xerxes I with a very large force at the end of a very long line of supply
- **Weapons - Direct and indirect**
  - Trireme has large ram at front + marines onboard
- **Order of Battle**
  - Persians - 750 triremes which were large + crews were more experienced
  - Greeks - 370 triremes which were smaller coming from 20 cities but mainly Athens, Corinth, Aegina
- **Organization - Units and formations**
  - Text
- **Command, control, communications, intelligence**
  - Text
- **Tactics**
  - Text
- **Weather**
  - Text
- **Terrain**
  - Battle on open sea was preferable to Persians due to their superior seamanship and numbers, so an enclosed area like Salamis was advantages for Greeks as it minimized effect of superior Persian numbers
- **Operational**
  - Text
- **Chronologic narrative of battle taking note of friction and fog**
  - Themistocles uses deceit to set battlefield - Night before battle he sends "traitor" to tell Persians that Greek fleet is about to split up and flee (true) and that Athenians will join Persian side if Persians sail immediately at night to surround Greeks (false) - Persians believe "traitor" + sail at night to surround Greek fleet - Wakening at dawn Greeks realize their fleet must fight together + Persians are tired from being up all night
  - Greeks then lure Persians into narrow strait off Salamina where Persians can't maneuver - Greeks get wind gauge and nimble Greek triremes cut up Persians
  - 200 Persian triremes sunk + few Persian crews survived, 40 Greek triremes sunk
- **Decisions - What good and bad ones were made**
  - Good - Themistocles' cleverness in forcing Greeks to stay together ~ Bad - Xerxes I in believing the "traitor" and tiring his men out before battle
- **OODA loop - Who is inside the other's**
  - Greeks inside Persians
- **Who thought they won, who really won**
  - Greeks, Greeks
- **What effect did it all have - Aftermath of battle**
  - Decisive blow in stopping Persian invasion, allowing development of classical Athens + Western civilization
  - Leads to land victory of Greeks over Persians at Platea in 479 BC and naval victory of Greeks over Persians at Mycale off of Samos on August 27, 479 BC

Focused Case Study - Peloponnesian War

- ## Why was it so special?
  - ### Athens lost
    - We associate Athens with Western Civilization ~ Was end of Camelot / dream of Athens
  - ### Two enemies were antithetical to each other
    - Athens - Democracy ~ Cosmopolitan liberal society ~ Great sea power
    - Sparta - Oligarchy ~ Parochial regimented society ~ Great land power
  - ### Thucydides chronicled it
    - A participant in it who was exiled ~ Talked to both sides ~ Philosophically felt man is a savage and used war to illustrate this view of human nature

- Victor Davis Hanson, A War Like No Other (Lecture at Hillsdale College Sept. 7, 2005)

Focused Case Study - Peloponnesian War

- ## From 431 BC - 404 BC ~ 27.5 years
- ## Why did it begin?
  - ### Sparta feared they could not compete with Athens and was being left behind, so it preemptively attacked Athens
- ## Neither side knew how to fight the other
  - ### Sparta a land empire ~ Athens a maritime empire
  - ### War will end when one side can fight other on its own terms

- Victor Davis Hanson, A War Like No Other (Lecture at Hillsdale College Sept. 7, 2005)

Focused Case Study - Peloponnesian War

- ## War begins 431 BC
  - ### Spartans lay siege to Athens, Athenians won't come out and fight
    - Pericles' strategy - keep Athenian fleet going, keep tribute coming, keep allies in line
  - ### Meanwhile Athens is sailing around Peloponnese raiding without effect
- ## Plague breaks out in Athens when under siege for 2nd time
  - ### Kills 1/4 to 1/3 of Athenians
  - ### Was accident of failed strategy
  - ### Causes loss of culture, people revert to animal instincts
  - ### Athens lacks soldiers for rest of war

- Victor Davis Hanson, A War Like No Other (Lecture at Hillsdale College Sept. 7, 2005)

Focused Case Study - Peloponnesian War

- **Since neither side could fight the way they wanted they turned to fighting the third world and developed new tactics**
  - **Both sides raided cities and asked if they were with them or against them**
  - **Terror became weapon to influence people to choose sides**
- **Why were there no hoplite battles to settle war? - Was economical + humane way to settle a war that followed a protocol**
  - **Athens did not want to risk any**
  - **Two greatest hoplite armies - Thebes + Sparta - on same side**
  - **War took place in regions that did not favor hoplite battles**

- **Victor Davis Hanson, A War Like No Other (Lecture at Hillsdale College Sept. 7, 2005)**

Focused Case Study - Peloponnesian War

- **So there were many sieges in this war**
  - **Wall technology > siege technology**
    - **Cities not falling to siege but to starvation**
    - **Everyone suffering from war, not just males**
    - **When city falls, townspeople are executed**
- **Horse most useless animal in ancient world**
  - **Can't be eaten ~ Not useful for farming ~ Ridden for show by rich**
  - **Becomes good for hit and run warfare**
  - **When Athens attacks Sicily / Syracuse (a democracy like itself), Sicily uses cavalry well and causes Athenian hoplites to lose**
    - **Cavalry becomes a symphony rather than a cacophony**

- Victor Davis Hanson, A War Like No Other (Lecture at Hillsdale College Sept. 7, 2005)

Focused Case Study - Peloponnesian War

- ## How does war end?
  - ### When Athens loses in Sicily, Aegean comes alive
    - Athens lost everything, including its fleet
    - Persia open coffers + builds fleet for Spartans
    - Athenians rebuild fleet
    - Spartans lay siege to Athens again and chase their fleet
  - ### 411-404 BC are climactic naval battles
    - Athenian fleet destroyed, survivors executed
    - Lysander sails to Athens, destroys their fleet, surrounds them, they surrender
      - Athens loses democracy / long walls / fleet

- Victor Davis Hanson, A War Like No Other (Lecture at Hillsdale College Sept. 7, 2005)

Focused Case Study - Peloponnesian War

- ## What can we learn?
  - ### Why did Athens lose? - War got out of control
    - Could have defeated Sparta
    - Could not have defeated Sparta, Corinth, Thebes, Sicily, Persia
  - ### What were Athens's losses?
    - 250,000 people ~ Funds equivalent to build 20-30 Parthenons
    - …but within 18 months democracy starts again in Athens
    - …within 15 years Athenian fleet was bigger than it was before
  - ### Wars don't start for actual grievances
    - Look for larger envy / anger / jealousy behind grievances
    - War started because of Spartan fear of power + dynamism of Athens

- Victor Davis Hanson, A War Like No Other (Lecture at Hillsdale College Sept. 7, 2005)

Focused Case Study - Peloponnesian War

- **What can we learn?**
  - **Athenians had lost deterrence**
    - **Sparta paid no penalty for breaking truce and starting war**
    - **People go to war for primordial emotions but don't actualize that intent unless they think they can get away with it**
  - **Most people have no ideology - want to be on side of winner**
    - **This was not a war of ideologies after all**
    - **People's support for war was not based on principles**
      - **20% of people are for or against war ideologically**
      - **60% of people are opportunistic in their support for war**

- Victor Davis Hanson, A War Like No Other (Lecture at Hillsdale College Sept. 7, 2005)

Focused Case Study - Peloponnesian War

- ## What can we learn?
  - ### How do wars end?
    - #### Did not end at Peace of Nicias in 421 BC - status ante quo - bellum interruptus
      - Reasons they went to war never resolved - Athenian empire still there, recruiting allies, charging tribute, growing navy + city
      - Only ends when Athens is destroyed
    - #### If you go to war finish it or you will leave it to your grandchildren

- Victor Davis Hanson, A War Like No Other (Lecture at Hillsdale College Sept 7, 2005)

Focused Case Study - Peloponnesian War

- ## What can we learn?
  - ### Lessons of war learned by losers + not by victors
    - #### Athenians learned why they lost
      - Empire undermined, city was occupied, imported food cut off
    - #### Athenians after war does not repeat mistakes
      - Formed Athenian Sea League (not imperial power but coalition), built new fortifications, intensified agriculture
      - Not invaded again until Philip and Alexander
    - #### Sparta did not learn how they could have lost
      - Defeat Spartan army, create democratic states to surround it, free the 250,000 Helot slaves that feed Spartans
    - #### 30 years later Thebes defeats Sparta in 1 year this way

- Victor Davis Hanson, A War Like No Other (Lecture at Hillsdale College Sept. 7, 2005)

Who Really Won the Peloponnesian War? (Who Really Won the Iraq War?)

"The conventional wisdom is that Sparta won, because Athens ultimately surrendered and faced total destruction. But as Robert Strassler points out in his epilogue to the Landmark edition, which I read this time, the big winner was not a belligerent. Rather, victory belonged to an observer, Persia, which stood on the sidelines and encouraged the fight, and then moved in to collect its winnings. I think too often we don't consider that as an outcome in wars."

- Thomas Ricks

"Thus it was the King of Persia who seems to have gained most from the war, for with the destruction of the Athenian Empire he recovered his territories in Asia at little cost to himself and was able to maintain his hold on them by playing off the always-contentious and now utterly disunited Greek Poleis against each other."

- Robert B. Strassler, The Landmark Thucydides - A Comprehensive Guide to the Peloponnesian War

The Peloponnesian War

- **Happened because of growth of Athenian power + angst it caused in Sparta**
- **Ultimate winner was neither Sparta nor Athens**
  - **Both damaged so badly economically + physically that war marks end of Golden Age of Greece**
  - **True winner was non-combatant Persia sitting on sidelines as its neighbors destroyed each other**
- **Lessons**
  - **Don't be dragged into a war based on alliances**
  - **Any democracy will break down in a long war**

- Mark Herman, designer of the wargame "The Peloponnesian War"

Staff Ride - Siege of Osaka Castle 1615

- **Prelude - Politics - Strategy**
  - 1467-1615 - Age of Warring States - Japan gradually unifies under Oda Nobunaga + Toyotomi Hideyoshi
  - 1591 - Japan united under Toyotomi Hideyoshi's control, when he died his son Toyotomi Hideyori was 5 years old + was put under care of guardian led by Toyotomi Hideyoshi's second in command (Tokugawa Ieyasu) who wants to be Shogun
  - 1543 - 1600 - Spain + Portugal Catholics have monopoly on trade with Japan + give them arquebus
  - 1600 - Dutch Protestants land in Japan with Englishman William Adam ('Samurai William") + Tokugawa Ieyasu takes his cannon
  - 1600 - Battle of Sekigahara Tokugawa Ieyasu destroys rival coalition
  - 1603 - Tokugawa Ieyasu names himself Shogun + makes Edo administrative capital of Japan + builds Nijo Castle in Kyoto to contain Emperor
  - 1611 - Tokugawa Ieyasu meets Toyotomi Hideyori + is impressed by him
  - 1614 - Tototomi Hideyori completes Great Buddah statue in Kyoto, bell cast for it has inscriptions insulting to Tokugawa Ieyasu - this + Toyotomi Hideyori's accumulation of ronin in Osaka Castle convinces Tokugawa Ieyasu time is now for attack
- **Approach of armies to battlefield - Why was battle fought here**
  - Osaka Castle was family castle of Toyotomi clan
- **Leaders**
  - Toyotomi Hideyori - indecisive, poor leader ~ Tokugawa Ieyasu - brave, astute diplomat, grand strategist ~ Tokugawa Hidetada (son) is Shogun now but lets father run show
- **Logistics**
  - Osaka Castle prepared for siege
- **Weapons - Direct and indirect**
  - Tokugawa has 5 English + 5 Dutch large cannon + 290 smaller Japanese cannon ~ Toyotomi has only small Japanese cannon
- **Order of Battle**
  - Text
- **Organization - Units and formations**
  - Daimyos bring armies of ashigaru (foot soldiers) armed with long spears / arquebuses / bows and samurai armed with spears / bows / katana
  - Toyotomi also had ronin
- **Command, control, communications, intelligence**
  - Toyotomi has divided command ~ Tokugawa has unified command
- **Tactics**
  - Text
- **Weather**
  - Text
- **Terrain**
  - Osaka Castle prepared for long siege with supplies, 3 rings of moats with outer moat formed by river with temporary walls around it + inner moats overseen by steep walls 120 feet high
- **Operational**
  - Winter Campaign - Toyotomi has 100,000 men ~ Tokugawa has 200,000 men
  - Toyotomi allows Tokugawa to approach Osaka Castle unhindered
  - Tokugawa takes outlying forts then lays siege to Osaka Castle by January 1615
- **Chronologic narrative of battle taking note of friction and fog**
  - Jan. 3-4 - Tokugawa attacks Sanada Maru + its rudimentary outer defense are briefly breached ~ Tokugawa convinced normal siege would not work
  - Jan 8-19 - Bombardment by Tokugawa's 10 heavy European cannon that are long range - inneffective against walls but effective against inner wooden structure - targeted Toyotomi's mother + terrified her, made her son negotiate for peace
  - Jan. 21 - Peace declared, Tokugawa's men start dismantling outer wall + filling in moat
  - Summer Campaign - Toyotomi has 60-120,000 men ~ Tokugawa has 150-160,000 men
  - Tokugawa plan is to lay siege to weakened castle ~ Toyotomi's plan is to maneuver to stop Tokugawa's army on road from Kyoto to Osaka + fight in open
  - Tokugawa justfies campaign as Osaka Castle moats are being re-excavated + ronin are returning
  - June 3 - Skirmishes along route to Osaka, including Battle of Domyoji, Toyotomi eventually retreats to inside Castle
  - June 4 - Battle of Tennoji fought south of Osaka Castle - Toyotomi plan was tto fight outside Castle with main force to hold center + then outflank Tokugawa from both sides + then have Toyotomi appear with father's standard on battlefield to rally troops
  - Instead Toyotomi's center forces attacked rather than holding + flanking forces got lost + commander was killed, thus Tokugawa's forces push them into Osaka Castle ~ Castle set fire to by own people, smoke gives cover to Tokugawa's breaching army
  - June 5 - Toyotomi + mother commit seppuku
- **Decisions - What good and bad ones were made**
  - Text
- **OODA loop - Who is inside the other's**
  - Text
- **Who thought they won, who really won**
  - Tokugawa thought he won Winter and Summer Campaigns and he did
- **What effect did it all have - Aftermath of battle**
  - Last battle between two samurai armies
  - House of Toyotomi destroyed ~ End of Age of Warring States ~ House of Tokugawa rules Japan for 250 years cut off from West
  - First event in Japanese history to be described in English due to presence of East India Company

- Stephen Turnbull, Osaka 1615 The Last Battle of the Samurai

Case Study Summary - Rule Britannia

- **Goal**

  "Rule Britannia! Britannia rule the waves. Britons never, never, never shall be slaves"

- **Center of Gravity (Strategy)**

  - Strong Royal Navy to keep sea lines of communication open for Empire and trade

- **Equipment**

  - King William III unleashes revolutions in finance, industry, agriculture which allows him to rebuild Royal Navy in 1700

  - Charles Middleton - copper bottom of ships gives them tactical edge in speed + maneuvering

- **Training**

  - Always at sea

  - Robert Blake - Articles of War + Fighting Instructions

  - Dan Snow, Empire of the Seas

Case Study Summary - Rule Britannia

- ## Leadership
  - ### Francis Drake - patriot + privateer
  - ### By Horatio Nelson's time a meritocracy - "England expects every man will do his duty"
- ## Morale
  - ### Admiral John Byng found guilty by court martial of "failing to do his utmost" to prevent French capture of Minorca in 1756 at start of 7 Years War - gave signal to fire to his own firing squad. Voltaire wrote that in England "it is thought good to kill an admiral from time to time to encourage the others."
- ## Tactics
  - ### Close with the enemy as close as possible and engage
  - ### - Dan Snow, Empire of the Seas

Case Study Summary - Rule Britannia

- **Intangibles**
  - **Samuel Pepys - administrator par excellence - lays foundation of civil service**
  - **Captain Cook - explorer par excellence**
- **Mistakes**
  - **By Jackie Nelson's time leadership was no longer a meritocracy**
- **Outcome**
  - **1588 - Spanish Armada defeated, Britain transformed into seafaring nation whose wealth + power lay at sea**
  - **1650's + 1660's - Dutch Navy defeated in Anglo-Dutch Wars**
  - **1759 - French Navy defeated in 7 Years War**
  - **180x - Napoleon defeated**
  - **1918 - German Navy defeated, but World War I bankrupts British Empire**
  - **- Dan Snow, Empire of the Seas**

Staff Ride - Waterloo

- **Prelude - Politics - Strategy**
    - Napoleon invades Russia in 1812, beaten @ Leipzig in 1813, in 1814 he loses Paris + is sent to Elba + Louis XVIII put in charge but peasants feared land confiscated after revolution would be redistributed + emigres were employed while veterans were retired + France began to miss Napoleon
    - 100 Days - Napoleon returns from exile on Elba to Paris on March 20 1815 -> Second restoration of King Louis XVIII on July 8 1815, is last gasp of Napoleon vs. War of 7th Coalition
    - Napoleon raises an army thus threatening Europe's old regimes so they mobilize ½ million soldiers against him
    - Britain + Prussia will attack across upper Rhine, Russia will attack across middle Rhine, Austria will attack across lower Rhine
    - Napoleon does not want allied armies to unite
- **Approach of armies to battlefield - Why was battle fought here**
    - June 16 Napoleon strikes Prussians at Ligny + beats them back to Wavre, preventing British - Prussian link up
    - June 16 Outnumbered 5:1, British block Ney at Quatre Bras crossroads, giving Wellington choice of defensible terrain + time to prepare at Mont-St. Jean
- **Leaders**
    - Napoleon - Armee du Nord - sought decisive battles + to win them by decisive action + would move fast to surprise, confuse, unbalance before attacking ~ lead from rear
    - Wellington - Multinational British, Dutch, Belgian, German army ~ lead from the front
    - Blucher - Prussians
- **Logistics**
    - Wellington's lines of communication run north through Brussels to English Channel ~ Blucher's lines of communications run east through Leige to Germany
    - Napoleon's troops at start of a campaign had 8 days rations + extra clothing / boots + ammunition train which let them travel light as their food supply was acquired improvisationally along the way so Napoleon's success depended on conducting short campaigns in prosperous regions
- **Weapons - Direct and indirect**
    - Muskets are short range, low accuracy + rate of fire but easy to make + train user
- **Order of Battle**
    - Napoleon has 72,000 men + 266 cannons ~ Wellington has 67,000 men + 156 cannon ~ Blucher has 30,000 men
- **Organization - Units and formations**
    - Text
- **Command, control, communications, intelligence**
    - Text
- **Tactics**
    - Infantry - line for defense vs. column for moving - fire 3 rounds / minute at less than 200 yards with 20% misfire rate - Infantry used squares to defend against cavalry
    - Light infantry = skirmishers
    - Cavalry used for defensive screening, reconnaissance, pursuit
    - Artillery in massed batteries for direct fire up to 1,100 meters + very mobile
- **Weather**
    - Rain on June 16 + June 17 but clear on June 18
- **Terrain**
    - Muddy from previous rain storms, made moving cannons hard + reduced killing impact of cannon balls, caused Napoleon to delay attack to wait for ground to dry - first to 0900 + then to 1300

Staff Ride - Waterloo

- **Operational**
  - Wellington's plan = Sit tight + let French exhaust themselves + then he could attack them…while waiting for Prussians to show up - played to Wellington's defensive skills + realistic appraisal of his allies
  - Napoleon's plan = Use II Corps to screen Wellington's right + draw reserves from Allies left, use Grand Battery to open up on Wellington's left and then attack this area with I Corps towards Mont-St. Jean cutting Wellington's lines of communication + dividing his forces - uncomplicated but ultimately screwed up by suboordinates + Napoleon was losing his powers
- **Chronologic narrative of battle taking note of friction and fog**
  - Diversion attack towards Hougoumont (II Corps) ~ Cavalry + 10,000 infantry from second line will screen approaching Prussians from Wavre
  - Ney launches main attack on center of Allies (I Corps) involving 4 infantry divisions / 16,000 men up the center making a dense target for artillery + muskets, when they get 20 yards away from sunken Ohain Road that British are hiding behind the British stand up and massacre them
  - Lord Uxbridge's cavalry pursues retreating French + attack French Grand Battery of artillery but mud wears them down + they were eaten up by Napoleon's heavy cavalry which counterattacked them
  - Napoleon then tells Ney to take La Haye Sainte with only 2 brigades + he is repulsed
  - Meanwhile French artillery is having effect on center + Wellington tells men behind ridge to lie flat
  - Wounded Allies start to return to Brussels, Ney mistakenly thinks this is retreat so he launches cavalry charges against right center of line without infantry or artillery support, but cavalry is slowed by mud + can't break Wellington's infantry in 20 squares so Napoleon sends cavalry reserves to help without success
  - Napoleon orders Ney to take La Haye Sainte again + he succeeds
  - Prussian corps appears at Plancenoit in Napoleon's right rear + attacks, Napoleon has Young Guard recapture Plancenoit
  - French artillery keeps pounding left + center of line, Wellington places last cavalry behind infantry to prevent mass desertions
  - At 1930 Napoleon commits last reserve - Old Guard with Ney but they are hit by British behind Ohain Road + break, then whole French line breaks
  - Wellington + Blucher meet at La Belle Alliance, Napoleon goes to Elba
- **Decisions - What good and bad ones were made**
  - Ney's failure to move his troops from Quatre Bras + take Prussians from rear let them escape to fight another day + Napoleon had to repeat "defeat in detail" at Waterloo
  - Napoleon delaying his attack at Waterloo to allow ground to dry gave time to Wellington to perfect his defenses + for Prussians to arrive
  - Ney - first attack at center too dense, second attack at La Haye Sainte too weak, third attack at center cavalry only with line of advance blocking supporting artillery
  - Grouchy had 1/3rd of Napoleon's forces to chase Prussians after Ligny but he failed to prevent Prussians from joining Wellington + failed to "move to the sound of the guns" + join Napoleon at Waterloo
  - "In his final campaign, Napoleon encountered an accumulation of setbacks and misadventures that were beyond his control and indeed beyond all comprehension. The war should have ended at Ligny (June 16) if Ney had been true to his potential. … Two days later, victory would have been won [at Waterloo] if Ney had not bungled his tactics and above all if Grouchy had been at the top of his form. Despite Ney's failure, victory might yet have been won if not for the untimely rain that delayed the start of the attack by three hours. Considering the precarious Anglo-Allied position when Blücher arrived, Wellington could not have held out for three more hours. Waterloo was an unthinkable disaster, as if the gods had willed it to be so. Despite all this, Napoleon did not fail his reputation as a great captain." - Dr. Ben Weider, Founder and President of the International Napoleonic Society
- **OODA loop - Who is inside the other's**
  - Text
- **Who thought they won, who really won**
  - "A damned near run thing" / "the nearest-run thing you ever saw in your life" - Wellington
- **What effect did it all have - Aftermath of battle**
  - Defeat breaks Napoleon's spell, Armistice signed on July 3rd, Napoleon exiled to St. Helena

- Fletcher Pratt, The Battles That Changed History + Joseph Mitchell / Edward Creasy, Twenty Decisive Battles + Richard Holmes, War Walks + Donald Featherstone Battlefield Walkers Guide

Focused Case Study: U.S. Civil War

- **As Commander in Chief in time of war, President oversees 3 principle functions:**
  - **1. Policy = War aims - Political goals of nation in time of war**
  - **2. National Strategy = mobilization of political, economic, diplomatic, psychological as well as military resources of nation to achieve war aims**
  - **3. Military Strategy = Plans for employment of armed forces to win victories that will further their political goals**
  - **(4.) Military operations = Organization, logistics + movements of armies in particular campaigns to carry out the purpose of military strategy**

- James M. McPherson, Tried By War: Abraham Lincoln As Commander in Chief, Lecture at Pritzker Military Library March 13, 2008

Focused Case Study: U.S. Civil War

- **Lincoln as Commander in Chief**
  - **1. Policy / War aims**
    - **Preservation of US as one nation, indivisible, a republic based on majority rule**
  - **2. National Strategy**
    - **A. Commission political generals to mobilize their political + ethnic constituencies**
    - **B. Slavery + emancipation**
      - **Slave labor sustained Confederate economy + logistics of Confederate army**
      - **To win this war over an enemy fighting for + sustained by slavery, the North must strike against slavery**
      - **So, issue Emancipation Proclamation after Battle of Antietam Sept. 1862 to confiscate Confederate slaves to weaken Confederacy**
      - **Emancipation evolved from a means to win the war to a war aim over last 2 years of war**
  - **3. Military Strategy**
    - **Lincoln disappointed with his leading generals' procrastination until US Grant**
      - **Advocated concentration in time to overcome interior lines of communication**
      - **Go after enemy armies + attack them; rather than just trying to capture places**
    - **He finally got this with US Grant who destroyed enemy army + Sherman who destroyed enemy resources**

- James M. McPherson, Tried By War: Abraham Lincoln As Commander in Chief, Lecture at Pritzker Military Library, March 13 2008

Staff Ride - Battle of First Manassas, July 21, 1861

- **Prelude - Politics - Strategy**
  - Union wants to fight decisive battle to capture Richmond + end war using 90 day volunteers before their enlistment is up
- **Approach of armies to battlefield - Why was battle fought here**
  - Manassas Junction is a railroad junction, 25 miles south of Washington DC, between Manassas Gap Railroad in Shenandoah Valley + Orange and Alexandria Railroad which goes to Gordonsville + then connects to Virginia Central Railroad to Richmond
  - Union wants to capture Manassas Junction which is astride best overland approach to Richmond
- **Leaders**
  - Union has McDowell with Army of Northeast Virginia coming from Washington DC + Patterson with Department of Pennsylvania Army in Shenandoah Valley
  - Confederacy has Beauregard with Army of Potomac in Manassas + Johnston (former Quartermaster General of US Army) with Army of Shenandoah in Shenandoah Valley
- **Logistics**
  - Both sides well + equally equipped at start of war
- **Weapons - Direct and indirect**
  - Text
- **Order of Battle**
  - Union has 35,000 troops, mainly 90 day volunteers who are poorly trained / inexperienced / poorly disciplined + 3 battalions of Regular Army
  - Confederacy has Beauregard with 22,000 troops at Manassas + Johnston with 10,000 troops in Shenandoah Valley
- **Organization - Units and formations**
  - Union had trained with units at regimental level but not at brigade + division levels so did not know how to move large formations of troops around
- **Command, control, communications, intelligence**
  - Both - Poor leading to piecemeal attacks + inability to employ whole force effectively
  - First use in combat of signal flags
- **Tactics**
  - Text
- **Weather**
  - Hot, dusty
- **Terrain**
  - Road network could not handle the Union's left flanking maneuver
- **Operational**
  - Confederacy - use of Manassas Gap Railroad to send Johnston's troops to reinforce Beauregard was a masterstroke
- **Chronologic narrative of battle taking note of friction and fog**
  - 7/16 - McDowell leaves Washington DC
  - 7/18 - McDowell arrives in Centreville + probes Confederate right flank unsuccessfully
  - 7/19 + 7/20 - McDowell scouts Confederate left flank
  - 7/20 + 7/21 - Johnston breaks contact with Patterson + sends his troops from Shenandoah Valley to Manassas Junction
  - Union plan was to turn Confederate left flank, seize Stone Bridge, destroy Manassas Gap Railroad at Gainesville thus dividing Confederate forces by using diversions at Stone Bridge + Blackburn's Ford
  - Union plan relied on rapidity of movement + element of surprise - but they did not move fast enough from 0230 jump off due to friction crossing Cub Run bridge, having to improve road to Sudley Ford, not being able to find Poplar Ford, taking wrong road to Sudley Ford. Thus their bayonets were spotted @ 0845 while they were trying to turn the Confederate left flank which is when Confederates realize Stone Bridge attack is diversion
  - 7/21 at 0530 - Battle is joined with Union diversionary attack at Stone Bridge
  - 7/21 at 0800 - Confederacy - E.P. Alexander on Signal Hill to Evans at Stone Bridge via signal flags - "Look out for your Left, you are turned"
  - 7/21 at 0830 - McDowell turns Confederate left flank at Sudley Springs Ford + Evans advances to Matthews Hill
  - 7/21 at 1200 - Union sweeps Confederates from Matthews Hill but pauses giving Confederates time to reinforce Henry Hill
  - 7/21 at 1400 - Union moves on to Henry Hill where "There stands Jackson like a stone wall! Rally behind the Virginians!" leading to Union attack being stopped
  - Confusion over colors of uniforms on both sides leads to fog
  - 7/21 at 1600 - Confederates turn Union right flank on Chinn Ridge, Union begins orderly retreat covered by Union Regular Army troops but this turns into disorderly retreat, Confederates too disorganized to pursue
- **Decisions - What good and bad ones were made**
  - Union - McDowell waiting 2 days to attack after right flanking probe repulsed allowed Confederates to reinforce from Shenandoah Valley
  - Union scouting of Confederate left flank was incomplete because Union scouts did not want to alert Confederate outposts of their scouting, thus Union did not realize the road network could not handle the Union left flanking maneuver
  - McDowell waiting 2 hours after winning on Matthews Hill before attacking Henry Hill allows Confederacy to reinforce - but his troops were exhausted + due to lack of cavalry he had no idea what was on Henry Hill [fog of war]
  - Union - Failed to protect artillery on Henry Hill
  - Why didn't Confederates pursue Union all the way back to Washington DC? - The Confederate troops were green + exhausted
- **OODA loop - Who is inside the other's**
  - Text
- **Who thought they won, who really won**
  - Text
- **What effect did it all have - Aftermath of battle**
  - Union - Initially gloomy - realizes this won't be short + easy war, defeat eventually steels them with resolve
  - Confederacy - Initially euphoric leading them to underestimate their enemy, eventually Stonewall Jackson's opinion of First Manassas was along the lines of "I fear all we have done is to awaken a sleeping giant and fill him with a terrible resolve."

Staff Ride - Shiloh (Pittsburg Landing) April 6-7, 1862

- **Prelude - Politics - Strategy**
  - Union wants to possess Mississippi Valley ~ Confederacy wants to strike Army of Tennessee before it unites with Army of Ohio in order to protect its rail junction at Corinth
- **Approach of armies to battlefield - Why was battle fought here**
  - Junction of Memphis + Charleston Railroad (East-West) + Mobile + Ohio Railroad (North-South) which were vertebrae of Confederacy, Sherman sent to raid this junction at Corinth + failed due to high water, Sherman recommended regrouping at Pittsburg Landing
- **Leaders**
  - Union - U.S. Grant ~ Confederacy - Albert Sidney Johnston - motivational leader for Confederacy volunteers
- **Logistics**
  - Union uses river as superhighway ~ Nearest Union railhead at Cairo Illinois ~ Confederacy uses Corinth railhead for supplies
- **Weapons - Direct and indirect**
  - Union small arms not better here ~ Artillery parity
  - Model 1855 Springfield rifled musket (2 rounds / minute), 12 pound gun howitzer muzzle loading smoothbore (Napoleon) (2 rounds / minute), rifled guns were Rodman or Parrott
- **Order of Battle**
  - Day 1: Union Army of the Tennessee (Grant) - 40,000 men at Pittsburg Landing ~ Confederacy Army of the Mississippi (Johnston) - 44,000 men ~ Green units on each side ~ Day 2: Union Army of the Ohio (Buell) - 20,000 men
- **Organization - Units and formations**
  - Regiment (colonel) = 10 x 7 men companies = 878 men ~ Brigade (Union=colonel, Confederacy=brigadier general) = 3-5 regiments ~ Division (Union-brigadier general, Confederacy=major general) = 2 or more brigades
  - Rather than recruit replacements for existing volunteer regiments, new volunteer regiments would be raised due to state politics + therefore experienced regiments would collapse from losses + new regiments had no veterans to train them
- **Command, control, communications, intelligence**
  - Although top leaders had military experience it had been at lower levels ~ No formal artillery control for both sides but was decisive when concentrated by Ruggles at Hornets Nest + Grant at Pittsburg Landing
- **Tactics**
  - Rifled musket allowed tactical defense to dominate tactical offense: 1) required attacker to deploy farther away from defender + thus increase distance attacked had to pass, 2) increased number of defenders who could engage attackers (enfilading fired), 3) reduced density of attacking + defending formations, 4) shifted infantry battles to firefights rather than shock attacks, 5) caused battles to last longer because units could not close for decisive shock action, 6) encouraged use of field fortifications, 7) forced cavalry to battlefield's fringes, 8) forced artillery to abandon its offensive maneuver of moving to within canister range of defending troops
- **Weather**
  - Roads are wet + muddy due to rain
- **Terrain**
  - 90% of battle is fought in old growth open forest with high canopy which leads to difficulty identifying the enemy + increased fog of war + friendly fire
  - Shiloh Church commanded best road between Corinth + Pittsburg Landing which was needed by Confederacy for reinforcement or retreat via Corinth
- **Operational**
  - Johnston wants to turn Union left, cut off their line of supply + retreat to landing, force them to Owl Creed + make them surrender
- **Chronologic narrative of battle taking note of friction and fog**
  - April 6 day - Confederate surprise attack, pushes Union back to defensive line that is finally broken near end of day driving Union back to line around landing where they are reinforced by fire from river gun boats
  - April 6 night - Union reinforced by Buell with 17,000 troops on left + Wallace with 6,000 troops on right giving them nearly 2:1 advantage ~ Confederates don't reorganize + are shelled by Union gun boats
  - April 7 - Union advances at dawn to seize initiative + quickly regain most of terrain they had lost, Confederacy attritted in hard fought battle all day + run out of troops + retreat, Union too exhausted to pursue
- **Decisions - What good and bad ones were made**
  - Union mistakenly thinks Confederacy are in place to defend the railroads + won't attack and therefore Union does not entrench their camps
  - Johnston does not truly turn the Union left because he does not understand geography of area + does not realize how far north Pittsburg Landing is + he thinks Prentiss was Union left but really Stuart was
  - Once Johnston thinks he has turned Union left he sends 66% of his forces to fight 50% of Union army at Shiloh Church + cracks it but leaves the rest of the battlefield sparsely populated
  - Confederacy taking time to plunder Union camps on first day + not reorganizing their forces overnight during the battle
- **OODA loop - Who is inside the other's**
  - By second day Confederacy is exhausted + losing command + control of its force
- **Who thought they won, who really won**
  - 13,000 Union casualties ~ 11,000 Confederacy casualties
  - Confederacy says we won first day + were winning until we withdrew ~ Union says we won second day
- **What effect did it all have - Aftermath of battle**
  - Confederacy abandons Corinth on May 30 which severs the Memphis Chattanooga Railroad

- Dillahunty, Albert - Shiloh National Military Park
- Gudmens, Jeffrey - Staff Ride Handbook for the Battle of Shiloh

Staff Ride - Battle of Second Manassas, August 25-30, 1862

- **Prelude - Politics - Strategy**
  - Pope's Army of Virginia mission - protect Washington DC against attack from Richmond, ensure safety of Shenandoah Valley, draw Confederate troops from Richmond by operating against Gordonsville
  - McClellan with Army of Potomac goes on offensive March 1862 in Peninsular Campaign to capture Richmond by sea but Johnston + then Lee push him back from Richmond in Seven Days Battles and McClellan is ordered to unite with Pope
  - Lee wants to attack Pope before he can reunite with McClellan's Army of Potomac so Lee decides to attack Pope's rear area / supply depot / communications links at Manassas Junction
- **Approach of armies to battlefield - Why was battle fought here**
  - Manassas Junction is Pope's supply depot / communications hub
- **Leaders**
  - Union - McClellan has Army of Potomac which he organizes + trains, Pope has Army of Virginia + has promised to be aggressive, unlike McClellan
  - Confederates - Lee has Army of Northern Virginia, he is daring + skillful coordinator of troops, outmaneuvers Union
- **Logistics**
  - Text
- **Weapons - Direct and indirect**
  - Text
- **Order of Battle**
  - Troops on both sides now seasoned veterans
- **Organization - Units and formations**
  - Text
- **Command, control, communications, intelligence**
  - Union command was divided, Pope misread battle at critical times - he was always believing Confederates were about to retreat
- **Tactics**
  - Text
- **Weather**
  - Text
- **Terrain**
  - Text
- **Operational**
  - Text
- **Chronologic narrative of battle taking note of friction and fog**
  - 8/25 - Jackson stars outflanking maneuver with 50 mile march into Pope's rear towards Manassas Junction - "foot cavalry"
  - 8/27 - Jackson seizes Manassas Junction
  - 8/28 - Jackson attacks Pope on Warrenton Turnpike at Brawner's Farm in late afternoon to stop him from crossing Bull Run and being able to be reinforced from Washington DC
  - 8/29 - Pope attacks Jackson at unfinished railroad grade
  - 8/30 - Pope attacks Jackson again at Deep Cut, Longstreet unleashes devastating counterattack against Pope, Union forces buy time for orderly retreat at Chinn Ridge / Henry Hill and then withdraw, it is a draw
- **Decisions - What good and bad ones were made**
  - Why didn't Pope understand the importance of Thoroughfare Gap in terms of reuniting Jackson's + Longstreet's commands?
  - Pope lost because he refused to trust his subordinates
  - Lee lost chance for decisive blow on 8/29 because he trusted Longstreet's cautious judgment too much
- **OODA loop - Who is inside the other's**
  - Text
- **Who thought they won, who really won**
  - "The braggart who had begun his campaign with insolent reflections…had been kicked, cuffed, hustled about, knocked down, run over, and trodden upon as rarely happens in the history of war. His communications had been cut; his headquarters pillaged; a corps had marched into his rear, and had encamped at its ease upon the railroad by which he received his supplies; he had been beaten or foiled in every attempt he had made to 'bag' those defiant intruders' and in the end, he was glad to find a refuge in the entrenchments of Washington." - Historian of US II Corps on General Pope
- **What effect did it all have - Aftermath of battle**
  - Lee reversed strategic situation completely - he removed 150,000 invading Union troops from deep in Virginia around Richmond and relieved threat of attack against it - now Union army ends up besieged in Washington DC and Union is threatened by invasion
  - Leads to Confederate first invasion of Union - Battle of Sharpsburg / Antietam

Staff Ride - Battle of Antietam, September 17, 1862

- **Prelude - Politics - Strategy**
  - Momentum in war has shifted from siege of Richmond to up into Pennsylvania thanks to Confederate victories at Seven Days Battles + Battle of Second Manassas
  - Lee wants to maintain initiative and keep winning more victories to offset Union superiority in men + material
  - Lee wants to shift war off of Confederate territory, take war out of Virginia, but Washington DC is heavily defended so has to do something to keep Union out of Virginia, marching into Maryland threatens Washington DC + Baltimore
  - Lee wants to break Northern political will by continually fighting them + inflicting pain on them - his center of gravity is the people of the North whose morale he wants to break as they head towards midterm elections so they may vote the Union government out of power
  - Lee wants to liberate people of Maryland whom he believes are sympathetic to Confederate cause [mistake - East Maryland is for secession, West Maryland is not]
  - Lee wants to break Baltimore & Ohio East-West rail link in Pennsylvania
  - Lee thinks McClellan is poor leader and is too cautious
  - British + French thinking of mediating the dispute + recognizing Confederacy if Confederates win one more big battle
  - Slavery not on table yet
  - McClellan's job is to shield Washington DC + eject Confederates from Maryland
- **Approach of armies to battlefield - Why was battle fought here**
  - Text
- **Leaders**
  - McClellan merges Army of Potomac + Army of Virginia together - does good job of organizing men + increasing morale after Second Manassas
  - McClellan's army culture is cautious - he is more worried about losing the battle than winning the battle
  - Lee's army culture - is risk taking
  - Lee's officers are better staff because they had worked together longer
  - Lee's command system based on personal interaction + skill
- **Logistics**
  - Lee has outrun his supplies - soldiers are shoeless on crushed stone roads - soldiers are eating green apples + green corn + developing dysentery - army decreasing in size as it heads north due to straggling - regiments at 17% strength
- **Weapons - Direct and indirect**
  - Rifled Union artillery made a difference
  - Smoothbore vs. rifled muskets - firepower vs. shock
- **Order of Battle**
  - Armies are huge - Army of Potomac is second largest city in South after New Orleans
  - Lee had 40,000 troops total that were veterans and he used all of them - McClellan had 87,000 troops but only used 60,000 on day of battle and some were green
- **Organization - Units and formations**
  - Company = 100 men, Regiment = 1,000 men, 5 regiments in a brigade, 3 brigades in a division, 3 divisions in a corps
  - Union does not use replacement system - formed new units instead
  - Regiment of ~ 500 men has frontage of 200 yards (2 ranks of 250)
  - Union - uses unit replacement system, disbands regiments when they become weak + form new ones with associated patronage
  - Confederates - use individual replacement system, keeps same regiments forever
- **Command, control, communications, intelligence**
  - Close order formation also needed for command and control by officers so they could maintain visual + verbal control over troops
- **Tactics**
  - Stand shoulder to shoulder in 2 lines, march in regular time of 120 steps / minute
  - When in doubt follow the flag which is held by bravest in regiment
  - Close order formation of soldiers trained to maneuver in concert + fire in volleys - linear tactics of troops advancing in line, two ranks deep, taking cadenced steps and stopping for fire volleys on command and then rushing enemy with bayonet charge at end - these are tactics of 18th century smoothbore single shot muzzle loaders with range of 80 yards - which favored offense - close order used to concentrate firepower
  - Change to rifled muskets strengthened defense thus increasing attackers casualties as they could now be hit up to 1,000 yards away
- **Weather**
  - Text

Staff Ride - Battle of Antietam, September 17, 1862

- **Terrain**
  - Lee is up on Sharpsburg Ridge which is gently rolling with good view, but his back is to Potomac
  - Lee has interior lines via Hagerstown Pike
- **Operational**
  - 9/7 - McClellan moves rapidly from Washington DC against Lee
  - 9/9- Lee needs to first secure his flank + supply route + lines of communication by eliminating Union garrison at Harper's Ferry - divides his forces thinking he has plenty of time to do this [mistake]
  - 9/13 - Lee's Special Order 191 captured by Union troops in Fredericksburg after they leave
  - 9/14 - Lee fights desperate battle to hold South Mountain passes so his forces can reunite - McClellan wins Battle of South Mountain
  - 9/15 - Jackson wins at Harper's Ferry - largest surrender of US troops until World War II, Lee chooses Sharpsburg Ridge as good ground
  - McClellan thinking about moving Lee's army out of Maryland, Lincoln thinking about destroying Lee's army which McClellan has done by deploying across Antietam Creek to block Lee
- **Chronologic narrative of battle taking note of friction and fog**
  - 9/17 - 0600 - 0930 - Northern phase of Battle - Hooker's 1st Corps attacks Confederates in North Woods on left flank at 0600 and Hood's desperate counterattack by hungry men works but destroys Hood's unit, then at 0700 Mansfield's 12th Corps attacks and Mansfield is killed + Hooker is wounded thus you have a change in chain of command and McClellan is too far away to help, then at 0900 Summer's 2nd Corps attacks the East Woods and is stopped by counterattack which paralyzes him for rest of day - Union 6th Corps held back from exploiting breakthrough
  - 9/17 - 0930 - 1300 - Central phase of Battle - Sunken Road / Bloody Lane
  - 9/17 - 1300 - 1600 - Southern phase of Battle - Burnside's 9th Corps crosses bridge but halts afterwards (due to friction?), eventually starts advancing towards Sharpsburg and Lee is out of troops to stop him, at last minute A.P. Hill's division arrives from Harpers Ferry at Millers Sawmill Road + Harper's Ferry Road intersection and saves the day
  - 9/17 - Evening - Lee asks if Confederates can go on offensive next day, they decide no
  - 9/18 - Lee dares McClellan to attack
  - 9/19 - Lee withdraws across Potomac showing Union can't defeat him and retains psychological edge over them
- **Decisions - What good and bad ones were made**
  - Lee's mistaken belief that West Maryland is for secession
  - Lee violated axiom of concentration of forces
  - McClellan waits 20 hours to reposition forces after discovering Lee's Special Order 191 - why?
  - McClellan abdicates his role as Army commander to Corps commanders + allows each Corps to attack separately
  - McClellan's attacks failed to achieve force concentration which allowed Lee to counter by shifting forces and moving via interior lines to meet each challenge
  - McClelland did not commit reserves to exploit local successes
  - After Confederate line was pierced at Sunken Road, Union did not follow it up
  - Lee's miscalculations - army was too strained and was poorly equipped and exhausted which led to straggling, he misjudged how fast Union could put army back in the field - but he did delay Union resuming offensive operations in Virginia
- **OODA loop - Who is inside the other's**
  - In specific - Lee inside of McClellan - helps army outnumbered 2:1 save itself from destruction
  - Lee does this because 1) he has interior lines + is mobile while McClellan has exterior lines + is static, 2) Lee personally orders up local counterattacks, 3) Lee knows his men well while McClellan does know know all of his men well due to recent merger of armies
  - In general - Confederate commanders inside Union commanders
- **Who thought they won, who really won**
  - A superior force armed with near-perfect intelligence will lose to opponent led by dynamic confident commander
  - Lee won because of his leadership on the heights
  - McClellan lost because of his leadership - failed to commit forces to battle on 9/15 + 9/16, he commits forces piecemeal on 9/17, he does not renew battle on 9/18, he does not pursue Lee on 9/19
- **What effect did it all have - Aftermath of battle**
  - 23,500 casualties in one day - more than in any other day in US history - single bloodiest day of combat in US history
  - Tactically inconclusive as Lee withdrew successfully - tactical draw
  - Strategically is Union victory as Lee is stopped which leads to announcement of Emancipation Proclamation which elevates war to higher moral plane and makes foreign recognition of Confederacy morally unthinkable
  - War goes from war to preserve the Unio n to war to transform the nation
  - McClellan failed to destroy Lee's army, but in 3 weeks he had provided for defense of Washington DC, created new field army, fought 2 major battles, compelled Lee to evacuate Maryland, established Northern control over Potomac from Washington DC to Williamsport
- **Questions**
  - Why does Lee decide to invade the North?
  - Why was Union at war?
  - How was war about slavery?
  - Why did Lincoln reappoint McClellan?

Staff Ride - Battle of Gettysburg, July 1-3, 1863

- **Prelude - Politics - Strategy**
  - Similar in ways to Antietam - Lee has beaten Army of Potomac at Fredericksburg + Chancellorsville, war in West going bad for Confederacy, Union blockade is working, wants to carry war away from Virginia + resupply in Pennsylvania so he comes to Pennsylvania in search of decisive victory
- **Approach of armies to battlefield - Why was battle fought here**
  - It was where road network leads - 7 roads lead to Gettysburg
  - It is an encounter battle , due to road network controlling how reinforcements trickled in over 3 days
- **Leaders**
  - Meade takes over Army of Potomac during battle
  - Lee not well has stomach flu
- **Logistics**
  - Confederates are short on supplies - are barefoot - that's why they head into Gettysburg, tension between Confederate army held tightly together to reinforce each other vs. spreading out enough to forage
- **Weapons - Direct and indirect**
  - Text
- **Order of Battle**
  - Meade - Army of Potomac = 85,000
  - Lee - Army of Northern Virginia = 75,000
- **Organization - Units and formations**
  - Confederates are better / quicker marchers
- **Command, control, communications, intelligence**
  - Differences in command quality were at Corps and Army levels, where Confederates were better
- **Tactics**
  - Text
- **Weather**
  - Hot!
- **Terrain**
  - Fish hook from Culps Hill to Cemetery Hill to Cemetery Ridge to Round Tops

Staff Ride - Battle of Gettysburg, July 1-3, 1863

- **Operational**
  - Text
- **Chronologic narrative of battle taking note of friction and fog**
  - 7/1 - 0730 First shot on Chambersburg Pike, McPherson's Farm delaying action fought by Union cavalry screen
  - 7/1 - 1030 Union stops Confederates at McPherson's Ridge to west
  - 7/1 - 1600 Union defense north of Gettysburg crumble, but Confederates do not capture Cemetery Hill
  - 7/2 - 1600 - Longstreet's delayed attack on Union left flank makes progress
  - 7/2 - 1900 - Confederate attack stopped on Little Round Tops
  - 7/3 - 0600 - 100 Ewell hits Union right flank and fails
  - 7/3 - 1300 - 1500 Stuart tries to come up behind Cemetery Ridge with large flanking maneuver which is blocked by Union cavalry
  - 7/3 - 1500 Pickett's charge at center of Cemetery Ridge
  - 7/3 - 1600 Armistead breaks through Union line on Cemetery Ridge - High Water Mark of the Confederacy
  - 7/4 - Lee withdraws
- **Decisions - What good and bad ones were made**
  - Lee's planning for what to do in Pennsylvania wasn't clear
  - Although Lee was on strategic offensive he should stand on tactical defensive in any operation
  - Lee split his forces too widely to allow for swift concentration
  - Stuart deprived Lee of his eyes because he was raiding instead of scouting
  - Lee allowed himself to be drawn into battle at time + place he didn't choose - allowed his subordinates to pull him into battle involuntarily
  - Lee suggested Ewell should capture Cemetery Hill "if possible" on 7/1 late afternoon - he should have commanded it
  - Lee's refused to look for a flank on 7/2, attacks were uncoordinated
- **OODA loop - Who is inside the other's**
  - Text
- **Who thought they won, who really won**
  - Text
- **What effect did it all have - Aftermath of battle**
  - Army of Northern Virginia loses its moral superiority of Army of Potomac
  - Union cavalry performs as good as Confederate cavalry for once
  - Lee is stuck in Northern Virginia, pressure on West is not relieved, there is no foreign recognition for the Confederacy
  - Strategically decisive by being tactically indecisive - Confederacy lost last chance to decisively beat Union

Staff Ride - Battle of Gettysburg, July 1-3, 1863 Questions

- What brought these armies to Gettysburg?
- If Stonewall Jackson had been alive and in command would he have attacked?
- If the attack had gone forward, would the Confederates have won?
- If the attack had gone forward, would Battle of Gettysburg and Civil War have come out differently?
- How difficult it is to try to control this chaos, to coordinate troop movement across vulnerable areas up toward the high ground
- Why did Lee think he could win at this point? (At end of July 2nd)
- What made them (Pickett's troops) for forward?
- If the Confederate leadership was so good and Union leadership was so inferior, how did the Union win this battle?
- Why did Meade not counterattack?

- How did the units arrive on the battlefield from Virginia?
- What is the significance of the Gettysburg campaign in the Civil War?
- What is the significance of the Gettysburg campaign in US history?

- GENERAL QUESTIONS ABOUT THE WAR
- Grand Strategy
  - What were the overall goals of each side for the war?
  - What strategy did each side choose in order to accomplish those goals?
  - Were the plans logically linked to the goals?
  - What resources did each side mobilize to accomplish their goals?
  - What difficulties did each side face in mobilizing those resources?
  - What were the strengths and weaknesses of the grand strategies of each side?
- Victory
  - How had each side conceptualized victory?
  - How did the grand strategies of each side logically lead them to victory?
  - What were the expected costs of victory?
- Civil/Military Relations
  - What was the state of civil/military relations on each side?
  - What were the strengths and weaknesses of each sides approach to civil/military relations?
  - What difficulties did each side have with respect to civil/military relations?
  - How did the civilian leader on each side perceive his military role (Huntington versus Cohen)?
- Perceptions
  - How did each side view the other?
  - Did each side understand accurately the strengths and weaknesses (military, political, social, cultural, economic) of the opposing side?
- Clausewitz
  - Is the force used appropriate (in scope and direction) to the political goals?
  - Is the force being used (scope and direction) advancing the political goals of the state?
  - How did each side intend to "break the will" of the other side to resist?
- QUESTIONS ABOUT GETTYSBURG
- What was the purpose of the summer (1863) campaign for each side?
- How was the summer campaign (1863) supposed to advance the political goals of each side?
- What were the primary considerations for each side in the summer of 1863?
- How had the idea/goal of victory changed by the summer of 1863 for each side?
- How had the strengths and weaknesses of each side shifted since the beginning of the war?
- What was the present state of civil/military relations for each side in the summer of 1863?
- How had the view each side had of the other shifted after three years of war?
- How risky (in terms of each sides ability to achieve their goals) was the summer campaign for each side?
- Did the military leaders on each side understand the political limitations of the political leaders?
- Did the political leaders on each side understand the military limitations of the military leaders?
- Were the summer (1863) campaign plans consistent with the logistical limitations of each side?
- To what degree were the summer (1863) campaign plans putting the strengths of one side against the weaknesses of the other? Was this planned or happenstance?

- Strategic Debate
- a. What was the strategic situation that confronted the Confederacy in the late spring and summer of 1863?
- b. What were the options debated by the Confederate leadership to deal with the strategic situation?
- c. Was Lee's argument in the best interest of the Confederacy or was he too focused on Virginia?
- Operational Movement
- d. What was Lee's intent as he moved his force to Pennsylvania?
- e. What was Meade's intent as he moved to engage Lee, and where did he plan to fight?
- f. What caused Lee to concentrate his army and where?
- g. What were Meade's considerations and options regarding a general engagement of the Confederate Army?
- h. What were the operational dispositions of Confederate and Union forces on 30 June 1863?

Staff Ride - Chickamauga September 18-20 1863

- **Prelude - Politics - Strategy**
  - Union wants to cut supply line to Chattanooga ~ Confederacy wants to cut off Union army in Chattanooga
- **Approach of armies to battlefield - Why was battle fought here**
  - Chattanooga is railway center + gateway to South, Union fights 6 month campaign for it, Chickamauga is largest battle in campaign
- **Leaders**
  - Union - William Rosencrans ~ Confederacy - Braxton Bragg
- **Logistics**
  - Confederacy - Transfer of Longstreet's corps from Army of North Virginia to Army of Tennessee = transfer of 15,000 men over 9 days over 900 miles + 16 rail lines
  - Union - to relieve siege of Chattanooga, sends large numbers of troops from East + West via rail
- **Weapons - Direct and indirect**
  - Text
- **Order of Battle**
  - Union = 58,000 men ~ Confederacy = 66,000 men
- **Organization - Units and formations**
  - Text
- **Command, control, communications, intelligence**
  - Text
- **Tactics**
  - Text
- **Weather**
  - Text
- **Terrain**
  - Text
- **Operational**
  - Text
- **Chronologic narrative of battle taking note of friction and fog**
  - Text
- **Decisions - What good and bad ones were made**
  - Text
- **OODA loop - Who is inside the other's**
  - Text
- **Who thought they won, who really won**
  - 28% casualties on both sides, Union = 16,000 casualties, Confederacy = 18,000 casualties
  - Last Confederacy victory in West ~ Union is defeated on battlefield but retreat into Chattanooga so they win strategically
- **What effect did it all have - Aftermath of battle**
  - By November 25, Union wins Battle of Missionary Ridge + controls Chattanooga + turns it into supply base from which next spring Sherman attacks into South's military-industrial complex including Atlanta, leading to death knell of Confederacy
    - Robertson, William Glenn + Shanahan, Edward + Boxberger John + Knapp, George - Staff Ride Handbook for the Battle of Chickamauga
    - Shanahan, Edward - Chickamauga Staff Ride Briefing Book
    - Sullivan, James R - Chickamauga and Chattanooga Battlefields

Focused Case Study - How Hitler Could Have Won the War

- **Don't attack Russia in 1941, instead attack south into Middle East**
  - **Occupy Iraq and Iran and Saudi Arabia**
    - **Go via the Mediterranean Sea or through Turkey**
    - **Grab oil for Germany, deny it to Britain**
    - **Threaten Soviet oil centers from Northern Iran and India from Eastern Iran**
  - **Eventual attack on Russia could be pincer move**

- John Keegan, How Hitler Could Have Won the War: The Drive For the Middle East 1941 in Robert Cowley, What If? - The World's Foremost Military Historians Imagine What Might Have Been

- **Don't declare war on US**

Case Study Summary - Battle of Midway June 4, 1942

- **Goal**
  - **Japan - Sink US carriers missed at Pearl Harbor, revenge for Doolittle Raid**
- **Center of Gravity (Strategy)**
  - **Japan - Grand strategy = Defend + expand control over Pacific to guard natural resources in East Indies**
  - **US - Grand strategy = Germany first, avoid decisive action against major elements of Japanese fleet**
  - **US - Strategy - maintain line of communications between Hawaii + Australia**
- **Equipment**
  - **Japan - Kido Butai (Mobile striking force) = 4 carriers (did not bring carriers damaged at Coral Sea)**
  - **US - 2.5 carriers (Yorktown damaged at Coral Sea) + Midway airfield**
- **Training**
  - **Japan - Highly trained ~ Wargamed it and lost**
  - **US - Highly trained ~ Wargamed it a lot (Rainbow Plans) + comfortable with it**

- Craig L. Symonds, Battle of Midway, Lecture at Pritzker Military Library October 7, 2011

Case Study Summary - Battle of Midway June 4, 1942

- **Leadership**
  - **Strategic Japan - Admiral Yamamoto - If going to war with British + Dutch must take care of Philippines so take out US fleet at Pearl Harbor - then demands a Battle at Midway to sink US carriers**
  - **Strategic US - Admiral Nimitz - Theater commander - calm, unflappable - must decide whether defending Midway worth risk of losing last 2 US carriers rather than waiting for 2 other US carriers under repair that would give him 4 carriers - could win by denying Japan the 2 carriers - but had element of surprise via Magic and expected to win…but tells his commanders if you are on brink of suffering serious losses withdraw**
  - **Operational / Tactical US - Admiral Spruance - Task force commander - surface warfare officer - The Quiet Warrior - overrules his air commander and sends airstrike piecemeal against Japanese**
  - **Tactical US - LCDR McCluskey - USS Enterprise air group commander - fighter pilot - pressed search for Japanese fleet beyond fuel range - leads 27/30 dive bombers against carrier Kaga and sinks it**
  - **Tactical US - LT Best - VB-6 Commander - takes remaining 3 dive bombers against carrier Akagi and sinks it due to secondary explosions…while at same time carrier Soryu 10 miles away being sunk by Yorktown's planes**

- Craig L. Symonds, Battle of Midway, Lecture at Pritzker Military Library October 7, 2011

Case Study Summary - Battle of Midway June 4, 1942

- **Morale**
  - **Hi for both sides**
- **Tactics**
  - **Dive bombing, torpedo planes**
- **Intangibles**
  - **Magic intelligence - US knew Midway was target, in last week May / first week June, that J would use 4-5 carriers**
  - **Japan interservice rivalry huge - Army wants nothing to do with plan until after Doolittle Raid shows Emperor vulnerable to attack**
  - **US has 12 Essex class carriers under construction for delivery in early 1943, Japan had one - so what was real risk for US long term?**
  - **Fog of War - Magic helped US, finding enemy at sea is ultimate fog of war**
  - **Friction - In planning, launching, coordinating carrier air strikes**
- **Mistakes**
  - **Japan had "victory disease" from conquering 1/3rd of globe with few losses**
  - **Japan intelligence underestimated number of surviving US carriers so no need to bring more than 4 carriers to battle**

- Craig L. Symonds, Battle of Midway, Lecture at Pritzker Military Library October 7, 2011

Case Study Summary - Battle of Norway April 9, 1940

- Goal
  - Germany - wants to guarantee safety of shipments of iron ore from Sweden via Norway, thinks it would make good U-boat base + air base to attack Britain from, use it to control North Sea to prevent economic strangulation of Germany like in World War I
  - Britain - Stop German iron ore shipments
- Center of Gravity (Strategy)
  - Germany - seize Denmark + use it as air bridge to Norway + airlift 30,000 troops into Norway's 6 main cities (Oslo, Bergen, Trondheim, Kristiansand, Narvik, Stavanger)
- Equipment
  - Germany - most of surface fleet, 6 army divisions, 1,000 aircraft ~ Britain - disorganized and much lost in shipment ~ Norway - poorly equipped
- Training
  - Germany - very well trained ~ Britain - well trained ~ Norway - untrained
- Leadership
  - Britain - land + sea forces not lead jointly ~ Germany - Kreigsmarine won't operate jointly with others so Luftwaffe refuses to work with them
- Morale
  - Germany - very good ~ Britain - good at first, then poor ~ Norway - poor
- Tactics
  - Text
- Intangibles
  - How to deal with Norwegian neutrality?
- Mistakes
  - Neither side operated jointly so there was no unity of command
- Outcome
  - Germany captures Denmark + Norway in a day
  - Britain attacks on Trondheim driven off by Luftwaffe ~ Britain attacks on Narvik succeeds because out of range of Luftwaffe
  - Britain abandons Norway in June 1940 after fall of France
  - Kriegsmarine surface fleet crippled ~ Occupying Norway required 400,000 German troops during the war
  - Lesson: Control of air by Luftwaffe was more important than control of sea by Royal Navy

- Phillip Meilinger, War Over the Fjords, Air Force, June 2013
- Dick Rustin, The German Invasion of Scandanavia: Norway 1940, Strategy & Tactics, Fall 1983
- Joseph Miranda, Norway 1940: Hitler Turns North, Strategy & Tactics, April-May 2012

Staff Ride - Battle of Hague / Rotterdam May 10-14, 1940

- **Prelude - Politics - Strategy**
  - Germans want to prevent England from using Holland as a base to attack Ruhr + want to use Holland as base for invasion of England ~ Airborne attack on Hague via motorcycles is decapitation strike to capture Queen + Dutch military leaders + force surrender ~ Airborne attack on Rotterdam to seize bridges over Nieuwe Maas river
- **Approach of armies to battlefield - Why was battle fought here**
  - Hague is seat of Dutch government ~ Rotterdam is economic hub of Holland
- **Leaders**
  - Overall Germans: General Kurt Student ~ At Rotterdam: Germans is Oberstleutnant Dietrich von Choltitz at Noorder Island + Willemsbrug, Dutch is Colonel Scharroo ~ German armored spearhead: General von Bock of 9th Panzer Division Herresgruppe B
- **Logistics**
  - Germans have airborne supply line
- **Weapons - Direct and indirect**
  - Germans have light weapons
- **Order of Battle**
  - Germans have 8,000 airborne + air landing troops at Hague ~ Dutch have few troops along with gun boats + torpedo boats on Maas
- **Organization - Units and formations**
  - Text
- **Command, control, communications, intelligence**
  - Dutch command + control very poor despite being home of Phillips
- **Tactics**
  - Hague: Germans attack airfields at Ypenburg, Ockenburg, Valkenburg with bombers, paratroops, air landing
  - Rotterdam: Germans land 90 air landing men (2 platoons) in 12 float planes at Nieuwe Maas bridges + 36 paratroops (1 platoon) at football stadium south of river + air landing troops at Waalhaven airfield (majority of troops)
- **Weather**
  - Text
- **Terrain**
  - Willemsbrug traffic bridge was key
- **Operational**
  - 9th Panzer division moves on Rotterdam via Moerdijk + Dordrecht bridges which were captured via airborne troops
- **Chronologic narrative of battle taking note of friction and fog**
  - May 10 - Germans capture 3 airfields outside Hague but are then driven off them
  - May 10 - 13 - Battle for Rotterdam bridges, Dutch hold north end of them
  - May 14 - Germans ask Dutch to surrender Rotterdam or it will be annihilated, during negotiations under cease-fire 100 German bombers "accidentally" sent to bomb Dutch on north end of bridges, recall was attempted but 2/3 of bombers dropped their bombs which caused a firestorm as vegetable oil / margarine tanks were hit which spread the fire killing 1,000 civilians + displacing 80,000 from their homes while destroying 1.1 square miles of city center due to ancient Dutch fire fighting equipment
- **Decisions - What good and bad ones were made**
  - Text
- **OODA loop - Who is inside the other's**
  - Text
- **Who thought they won, who really won**
  - Text
- **What effect did it all have - Aftermath of battle**
  - Huge loss of German transport aircraft (~ 200)
  - Dutch surrender Rotterdam, Germans than tell Dutch if they don't surrender the country they will bomb Utrecht on May 15 so Holland surrenders
  - On May 15, RAF starts bombing Germany

- Whilhelminia Steenbeck, Rotterdam: Invasion of Holland

Case Study Summary - Battle of Midway June 4, 1942

- **Outcome**

  "They had no right to win, yet they did, and in so doing they changed the course of the war." - Walter Lord

  - **Up to 10 AM that day Japan was winning Pacific War, after that they were losing**

  - **5 minutes to victory**

  - **Not wholly due to luck or chance - won due to sound decision making + courageous leadership - bold + courageous men make own luck.**

  - **End of Japanese naval airpower - losses never replaced**

  - **2 months after Midway US goes on offensive by invading Guadalcanal**

- **Conclusion**

  - **Illustrates interplay between <u>grand strategy / strategy / operational / tactics</u>**

  - **<u>Wargaming</u> used for training + decision making by both sides**

  - **Role of <u>intelligence</u> - helpful but not decisive for US, lethal for Japanese**

  - **<u>Fog of war</u> and <u>friction</u> always present and luck plays a role (Point Luck was name of US task force rendezvous point) but…**

  - **Good decisions from good <u>training</u> and <u>leadership</u> carried the day for US**

- Craig L. Symonds, Battle of Midway, Lecture at Pritzker Military Library October 7, 2011

Staff Ride - Fort Eben Emael - May 10-11, 1940

- **Prelude - Politics - Strategy**
  - Eben Emael was hinge of door of Belgium's defenses, if taken Germans can easily go through Belgium
- **Approach of armies to battlefield - Why was battle fought here**
  - Fort controls crossing of Albert Canal + roads running west from Maastricht
  - After Franco-Prussian War, Belgians realized next war would go through Belgium, so Belgium built forts to protect them against France + Germany, but they left a gap between Vise / Liege + Holland (VISE Gap) + that was where Germany invaded them in World War I, so they plugged that gap with Fort Eben Emael after World War I
- **Leaders**
  - Germans overall was Captain Walter Koch, German leader at Eben Emael was Oberleutnant Witzig who arrived 3 hours late due to tow plane problems
- **Logistics**
  - Germans must hold until relieved ~ Belgians in fort had rations for 2 months
- **Weapons - Direct and indirect**
  - Battery 1 = artillery on roof: Cupola 120 of 2 x 120 mm turret with 360 degree rotation, Cupola North + South each with 2 x 75 mm turrets with 30 degree rotation, 4 casemates (2 to north + 2 to south) each with 3 x 75 mm gun turning 70 degrees, 3 false cupolas
  - Could not shoot at Aachen Germany (too far) or Maastricht as guns could not clear St. Peter's Hill
  - Roof not protected from air attack, had football pitch + ability to be resupplied by air ~ Missing periscopes for Cupola 120
  - Missing explosives to seal off internal galleries, telephones ~ No chicane at entrance to fort
  - Battery 2 = defense bunkers around fort each with 1 or 2 antitank guns of 60 mm, machine guns, searchlights, observation posts for a total of 12 antitank guns + 22 machine guns ~ No barbed wire / mines / trenches near bunkers - they covered each other
  - Germans used hollow charges
- **Order of Battle**
  - Belgians - Fort garrison is 500 artillerymen who lived in fort + rotated out every week + 200 admin staff who lived outside fort ~ Poorly trained ~ Morale low as they were artillerymen forced to do infantrymen job ~ Always many absent
  - Germans - 1 company of infantry + 1 platoon of engineers
- **Organization - Units and formations**
  - Text
- **Command, control, communications, intelligence**
  - Belgians effectively cut off
- **Tactics**
  - Vertical envelopment by Germans
- **Weather**
  - Not a factor
- **Terrain**
  - Eben Emael's position determined by construction on new Albert Canal at deep cut of St. Peter's Hill - to South it covers Gap of VISE and to North it covers roads from Maastricht into Belgium + high bridges over Albert Canal at Voenhoven + Veldwezelt
  - Fort is 800 meters wide + 900 meters long ~ Poorly ventilated ~ Fort had 6 outer walls of reinforced concrete

- USAREUR CG Staff Ride April 2015

Staff Ride - Fort Eben Emael - May 10-11, 1940

- **Operational**
    - Albert Canal designed as antitank barrier, to hold up Germans for several days as French would dig in on Dyle river, was 60 meters wide + 5 meters deep, dirt piled up on west bank to give clear field of fire to east bank
    - West bank of Albert Canal defended by 148 machine gun bunkers, 600-700 meters apart with lateral fields of fire
    - To the west the Albert Canal anchored on "Position fortifice de Antwerp"
    - To the east the Albert Canal connected with Fort Eben Emael
    - Germans could reach Albert Canal in 1 hour, Belgian-Dutch border skirts around Maastrict so Belgians did not control Meuse bridges, if Germans took Albert Canal at Eben Emael they could flank Leige, so Fort Eben Email was meant to prevent this
    - Germans also had to capture bridges over Albert Canal at Canne, Vroenhoven, Veldwezelt
    - The first job of the men manning the MiNorth + MiSouth blocks on roof of fort (whose job it was to defend roof of fort) was to evacuate all important papers from administrative block outside fort into fort so at time of attack MiNorth block was partly manned + MiSouth block was unmanned
- **Chronologic narrative of battle taking note of friction and fog**
    - Each DFS230 glider carried pilot + copilot + 9 infantry
    - Assault Group Concrete of 90 men of 5 infantry + 4 engineering sections - secure bridge over Albert Canal at Vroenhofen + hold until ground forces arrive, 40 minutes later 3 Ju-52's drop 24 infantry + machine guns + ammunition
    - Assault Group Iron of 90 men of 5 infantry + 4 engineering sections - secure the bridge at Canne, 40 minutes later 3 Ju-52's drop 24 infantry + machine guns + ammunition
    - Assault Group Steel of 90 men of 5 infantry + 4 engineering sections - secure bridge at Veldvezelt, 40 minutes later 3 Ju-52's drop 24 infantry + machine guns + ammunition
    - Assault Group Granite of 90 men (all engineers) in 11 gliders land on flat roof of fort, fight off defenders, cripple artillery ~ Commander landed 3 hours later
    - Bridges at Veldvezelt + Vroenhofen seized intact, Germans landed several hundred yards from bridge at Canne which was blown
    - German DFS-230 gliders towed by Stukas land on fort roof, silence resistance on fort roof in 10 minutes
    - Supporting Belgian artillery crushed by Stukas ~ 300 more Fallschirmjägers dropped at dawn as reinforcements
    - At night German engineer battalion moves in ~ Belgians surrender at 1230 hours on May 11
- **Decisions - What good and bad ones were made**
    - Eben Emael was system of systems, when vision cupolas were taken out it was blinded, it was only as strong as its weakest link
- **OODA loop - Who is inside the other's**
    - Germans inside Belgians
    - Tactical surprise achieved by silent approach - silent aircraft "coming in like great birds"
- **Who thought they won, who really won**
    - Germans ~ Germans
- **What effect did it all have - Aftermath of battle**
    - Germans lost 6 killed + 19 wounded
    - Capture of it unhinged Belgian defensive line
    - Was symbol of Blitzkrieg, led to interest in airborne troops in Great Britain + U.S., but Germans felt airborne troops were a novelty
- **- USAREUR CG Staff Ride April 2015**

Staff Ride - Ardennes 1940

- **Prelude - Politics - Strategy**
  - French - politically were appeasers
  - French - militarily believed in "continuous front" theory of 1917 (defensive lines can't be broken) and this takes them from trenches to Maginot line (think also of Vauban)
  - Maginot line covers main invasion routes from Strasbourg to Ardennes with mobile reserve forces behind it
  - Belgians believe in continuous line as well -> Eben Emael
  - Maginot Line cost left little money for modern weapons, caused defensive mentality which discouraged progressive thoughts
- **Approach of armies to battlefield - Why was battle fought here**
  - Allies - thought Ardennes was not passable by tanks so left it lightly screened ~ Germans thought otherwise
  - Sichelschnitt (sickle cut) - Army Group A is center of gravity - smash Allies on Meuse River between Dinant + Sedan
- **Leaders**
  - French - Gamelin, French army stuck in 1918 aside from DeGaulle ~ Germans - Hurry Heinz Guderian
  - French are poorly trained + equipped + led which leads to bad morale ~ Germans are complete opposite
- **Logistics**
  - French - bad ~ Germans - use French gas stations
- **Weapons - Direct and indirect**
  - French - tanks are very good ~ Germans - most tanks are Panzer Mark I's + Panzer Mark II's
- **Order of Battle**
  - 136 divisions + 3000 armored vehicles on each side ~ French have 3 armored divisions, British have 0 armored divisions, Germans have 7 panzer divisions
- **Organization - Units and formations**
  - Panzer division is combined arms organization of tanks, mechanized infantry, reconnaissance troops, field artillery, anti-aircraft artillery, anti-tank artillery, engineers
  - Belgians + British + French - organized + trained to fight in 1918 ~ Germans - well trained + experienced
- **Command, control, communications, intelligence**
  - French - Second Generation army - focused inward + only listened to HQ in rear ~ Germans - Third Generation army - focused outward + cooperated laterally, took initiative, leaders were at the front
  - Took 2 days to relay a French order, took minutes to relay a German order
- **Tactics**
  - "Klotzen, nicht Kleckern" (Smash, don't tap) - Heniz Guderian = Blitzkrieg, Auftragstaktik, Schwerpunkt, Fingerspitzengefuehl
  - Mobility + speed (panzers + Fallschirmjäger), communications (radios), airborne artillery (Stukas)
  - "I have found again and again that in encounter actions, the day goes to the side that is the first to plaster its opponent with fire. The man who lies low and awaits developments usually comes off second best." - Erwin Rommel
- **Weather**
  - Winter had been bad so French could not work on their defenses ~ Was not an issue in this campaign
- **Terrain**
  - Semois River (steep banks) + Meuse River (rocky cliffs that are higher on western side)
  - Some parts of Ardennes forest are constrained + could cause bottlenecks -> relationship between operational results + tactical risk -> Germans took the risk

- Len Deighton, Blitzkrieg + Heinz Guderian, Panzer Leader + Richard Holmes, Complete War Walks

Staff Ride - Ardennes 1940

- **Operational**
  - French will advance to Dyle river, east of Brussels, to meet Germans - "We must go into Belgium" - Marshall Petain
  - German advance is combination of Napoleon's indirect approach + central position ~ Drive of panzers through Ardennes placed German center of gravity between French southern armies in Maginot Line + British / Belgian / French armies in Belgium + Flanders ~ Moving through Ardennes was indirect approach which placed German armies across Allied lines of communication in Belgium using Ardennes Forest as curtain of maneuver ~ German invasion of Holland was pinning operation which diverted Allied attention from critical area ~ Rapid drive to sea was aggressive pursuit of defeated armies
- **Chronologic narrative of battle taking note of friction and fog**
  - May 10 - Attack at Eben Emael
  - May 11 - Guderian tries to cross Semois river at Bouillion but bridge is blown
  - May 12 - Rommel at Dinant
  - May 12 - Guderian fords Semois river at Mouzaive + builds bridge at Bouillon
  - May 12 - Guderian finds bridges at Sedan blown - what to do? Subordinate reminds him of "Smash don't tap"
  - May 13 - Germans cross Sedan in dingies with close air support + finished first pontoon bridge across it by midnight ~ Germans ultimately get to Dyle line first
    - French fortress regiment that was supposed to hold Sedan at all costs abandoned it
    - French use Meuse as natural defense line - French 55th Infantry Division (Class B reserves) manned blockhouses along river, had ¼ of its antitank guns (but there were enough antitank guns in storage to man 10 divisions), had good artillery - French 71st Infantry Division (Class B) behind them but at 50% strength due to leave + illness
    - Germans had practiced crossing + had good intelligence ~ This attack had to succeed for Germans to pivot to the north
    - Germans place tanks + 88mm guns to use direct fire against French pill boxes on other side of river, Germans had good artillery + lots of Luftwaffe support
    - French told to ration artillery fire against clearly visible German tanks because they thought it would take days for Germans to concentrate artillery for attack
    - 10th Panzer Division cross Meuse on rubber boats + scale Marfee Heights on May 13 at 1600 hours taking French bunkers because French troops covering them were hiding from screaming Stukas ~ at 1630 hours engineers had ferry operating across Meuse ~ at 2359 hours engineers had pontoon bridge across Meuse
    - 1st Panzer Division reinforced with GrossDeutchsland Regiment (Hitler's bodyguard) cross Meuse at Glaire in rubber boats and at 1930 are on Marfee Heights
    - 2nd Panzer Division arrives at zero hour + jumps into battle + attacks at seam between French 9th + 2nd Armies and at 1710 hours French 55th Infantry Division loses communication with French 102nd Fortress Division - this gap between French 9th + 2nd Armies was never closed
    - At 1830 hours French begin to falsely report German tanks on Marfee Heights + French 55th Infantry Division breaks - German tanks + Stukas broke French morale without inflicting many casualties
    - French were supposed to counterattack May 14 at 0400 hours but was postponed to 0700 hours. By 0600 hours Germans had a tank brigade across pontoon bridge
    - Guderian at Meuse knew how precarious his position was; French commander far away was clueless. What should he do - wait for French counterattack + protect his bridgehead or strike west? He attacked west with 1st + 2nd Panzer Divisions + left 10th Panzer Division to guard his flank at Stonne at 1500 hours on May 14
    - French counterattack on May 15 at 1500 using 3rd Armored Division + 3rd Motorized Division was postponed to May 15 but on May 15th these units were put into the defensive line
    - French 2nd Army Commander Huntziger did nothing to attack Guderian, was greatest failure of campaign, was later made Minister of War
    - May 15th in morning French Prime Minister Reynard calls Churchill + says "We are beaten, we have lost the battle"
    - May 16th Guderian ordered to halt - he ignores it
    - May 17th Guderian 70 miles past Sedan, starts laying wire for communications so OKH RDF cannot find him, reaches Abbeville (French coast) on May 20
- **Decisions - What good and bad ones were made**
  - Allied airpower did not interdict German troops moving through Ardennes
- **OODA loop - Who is inside the other's**
  - Germans inside the French
- **Who thought they won, who really won**
  - Germans ~ Germans
- **What effect did it all have - Aftermath of battle**
  - Birthplace of Blitzkrieg ~ Victory at Sedan + Stonne let Guderian pivot to coast + cut Allies in two
- Len Deighton, Blitzkrieg + Heinz Guderian, Panzer Leader + Richard Holmes, Complete War Walks

Staff Ride - Normandy June 1944

- **Prelude - Politics - Strategy**
    - **Allies - need to open true second front against Germany to aid Russia, need to liberate Western Europe**
    - **Germans - need to hold on to what they have conquered**
- **Approach of armies to battlefield - Why was battle fought here**
    - **This is a historical site of invasions in both directions - Bayeux Tapestry in Caen**
    - **Allies - Calais was narrowest part of English Channel and therefore obvious landing site, Normandy had reasonable beaches for landing and eventual access to ports at Le Havre + Cherbourg**
    - **Germans - have to defend everywhere - "Atlantic Wall"**
- **Leaders**
    - **Allies - Eisenhower - political general who could get U.S. + Great Britain to cooperate**
    - **Allied Generals lead from the front - Theodore Roosevelt Jr - "We'll start the war from here" on Utah Beach , Norman Cota - "Gentlemen, we are being killed on the beaches. Let us go inland and be killed" on Omaha Beach**
    - **Germans - Rommel - not given complete control of his forces due to command interference from above**
- **Logistics**
    - **Allies - have to create artificial harbors to support initial phase of invasion - Mulberry, PLUTO**
    - **Germans - have had all rail lines in France severed by Allied bombing thus severely limiting their mobility and the resupply**
- **Weapons - Direct and indirect**
    - **Allies - good reliable weapons - M-1 rifle, Sherman tank, jeep**
    - **Germans - Exquisite overengineered weapons that are unreliable - Tiger tank**
- **Order of Battle**
    - **Text**
- **Organization - Units and formations**
    - **Allies - fully manned, completely equipped, well trained, very best troops committed for landing - Airborne, Rangers, Commandoes**
    - **Germans - partially manned, partially equipped, units at beaches poorly trained (ear + stomach units, foreign units), panzer reserves well trained**
- **Command, control, communications, intelligence**
    - **Allies - complete breakdown on first day but initiative from small unit leaders carried the day**
    - **Germans - Operation Fortitude convinced them that huge Allied army, commanded by best general (Patton) would land at Calais**

- Ryan, Cornelius - The Longest Day

Staff Ride - Normandy June 1944

- **Tactics**
  - **Germans - are an immobile army, defend hedgerow by hedgerow and trick Allied mobile army into attacking them one hedgerow at a time**
- **Weather**
  - **Allies - need good weather for landings and logistical resupply over beaches until a port is captured and cleared**
- **Terrain**
  - **Beaches - dunes, bluffs, draws to get off beaches, Atlantic Wall pillboxes**
  - **Inland - flooding of fields by Germans to limit Allied mobility and importance of causeways to move across them, hedgerows (bocage country)**
- **Operational**
  - **Largest use of British airborne troops to date to seize bridges on east flank (Pegasus) to prevent German counterattack + U.S. airborne troops to seize causeways to allow exits from Omaha + Utah beaches - were extremely disorganized but ultimately successful and prevent organized German counterattack against beaches**
- **Chronologic narrative of battle taking note of friction and fog**
  - **Landing on June 6 successful but was contained - Caen not taken on D-Day**
  - **Operation Goodwood on July 18-20 finally captures Caen**
  - **Operation Cobra on July 25 leads to Falaise pocket on August 12-21 and final defeat of German army in France**
- **Decisions - What good and bad ones were made**
  - **Allies - not aggressive enough in expanding beachhead early on**
  - **Germans - refusal to release panzers for counterattack on beachhead to throw Allies back into sea**
- **OODA loop - Who is inside the other's**
  - **Allies inside of Germans because Germans waiting for something that will never happened - an Allied landing in Calais**
- **Who thought they won, who really won**
  - **Allies, Allies**
- **What effect did it all have - Aftermath of battle**
  - **Annihilation of German army at Falaise pocket leads to liberation of Paris and liberation of France and begins to relieve pressure on Russian Front**
- **Ryan, Cornelius - The Longest Day**

Staff Ride - Market (Air) Garden (Ground) - Hell's Highway - Highway to the Reich

- **Prelude - Politics - Strategy**
  - By September 1944 Allied advance coming to halt due to lack of ports + logistics + trucks + replacements - Germans now behind West Wall from Switzerland to Holland + Holland full of marshes + rivers
  - Cross Rhine at Arnhem using airborne carpet and flank Siegfried Line, get to good tank country of North German plain, seize Ruhr and Germany's war-making potential, war over by Christmas
- **Approach of armies to battlefield - Why was battle fought here**
  - Seize 5 bridges in 3 days
- **Leaders**
  - Allies - Montgomery ~ Germans - Model
- **Logistics**
  - Airborne supplied from Britain - it was far
- **Weapons - Direct and indirect**
  - Lightly armed Allied airborne divisions vs. heavily armed German panzer + panzer grenadier divisions
- **Order of Battle**
  - Text
- **Organization - Units and formations**
  - Text
- **Command, control, communications, intelligence**
  - Allies had no contact with First Airborne Division for whole battle
- **Tactics**
  - Vertical envelopment
- **Weather**
  - Fog in England delayed reinforcement + resupply
- **Terrain**
  - Marshes in Holland prevented deployment off road + limited airborne drop locations at Arnhem south of bridge
- **Operational**
  - Waal river + Nederrijn river are extensions of Rhine river + Maas is Meuse river
  - Bridges to capture - Wilhelmina Canal north of Eindhoven, Willems Canal just south of Veghel, Maas River by Grave, Waal River by Nijmegen, Nederrijn at Arnhem
  - Drop 101st Airborne between Wilhelmina Canal + Willems Canal, drop 82nd Airborne between Maas + Waal rivers, drop 1st Airborne at Arnhem
  - Germans successfully blew bridge over Wilhelmina Canal at Son
  - 14 bridges and 1 road - Wilhelmina Canal 4 km north of Eindhoven was 30 meters wide at main crossing at Zon which was blown on D-Day while second crossing at Best 4 km west was blown on D plus 1 while canal was bridged on morning of D plus 2, Zuid Willems Canal at Veghel was 12 km north of Zon and 24 meters wide and highway bridge and rail bridge were both captured there on D-Day, 30 km north of Veghel at Grave was 250 meter wide Maas River highway bridge which was captured on D-Day, Maas-Waal Canal was 65 meters wide and 8 km northeast of Grave and 1 bridge over it was seized on D-Day and one on D plus 1 while 3 other bridges over it were blown, the Waal was 280 meters wide at Nijmegen and the highway bridge and rail bridge over it were taken on D plus 3, the Neder Rijn (Lower Rhine) was 15 km to north where the highway bridge north end was captured on D-Day and the railroad bridge was blown on D-Day and the pontoon bridge had been taken apart

Staff Ride - Market (Air) Garden (Ground) - Hell's Highway - Highway to the Reich

- **Chronologic narrative of battle taking note of friction and fog**
  - September 5-6 - II SS Panzer Corps moves to Arnhem
  - September 6 - Van Zangen's German 15th Army allowed to escape into Holland
  - September 17 - Initial airborne drops - all of 82nd + 101st Airborne, 2 brigades of First Airborne
  - September 18 - Drop of another brigade of First Airborne
  - September 19 - Polish 1st Parachute Brigade drop south of Arnhem bridge postponed
  - September 20 - Bridge at Nijmegen captured by Allies, Arnhem bridge recaptured by Germans
  - September 21 - Polish 1st Parachute Brigade drop south of Oosterbeek
  - September 26 - British evacuate Oosterbeek - of 10,000 troops of First Airborne that dropped only 2,000 escape
- **Decisions - What good and bad ones were made**
  - Landing at objective - a basic airborne tenet - was violated by First Airborne Division
  - Allied intelligence missed presence of II SS Panzer Corps at Arnhem
  - There was no cab rank close air support for Market, there was no aircraft interdiction for Market - all due to bad planning
  - German 15th Army was allowed to escape from Holland + thus formed the force blocking Garden
  - Non use of British 52nd (Lowland) Division for air landing reinforcement
  - Allied mistakes - Division with hardest job (First Airborne) had smallest force, First Airborne moved too slowly to bridge, Not making bridge at Nijmegen a priority, Lack of close air support for Market airborne troops, Narrow front of Garden ground assault
  - Allied intelligence failures - Ignored Dutch underground intelligence of presence of II SS Panzer Corps, Missed escape of German 15th Army of 65,000 men, Missed alternate routes from Nijmegen to Arnhem, Missed ferry over Neder Rijn at Driel, Missed Huissen Ferry over Neder Rijn east of Arnhem
  - German mistakes - Grabner was supposed to leave 1 company to guard Arnhem bridge before heading south to Nijmegen but did not, Model did not blow Nijmegen bridge, Model ignored captured Allied plans
- **OODA loop - Who is inside the other's**
  - "That cannot be. It never snows in September! They must be parachutists!" - Lt. Joesph Enthammer, Wermacht artillery officer in Arnhem
- **Who thought they won, who really won**
  - Germans, Germans
- **What effect did it all have - Aftermath of battle**
  - "There's one officer, at least, who's shaved." - Brigadier General Pip Hicks…"I was well brought up, sir." - Major Robert Cain
  - Bridge too far - 3 month lull in fighting that follows allows Germans to prepare for Ardennes offensive
  - Hunger Winter 1944 - Germans cut supplies to Netherlands + 18,000 Dutch civilians starved

- Cornelius Ryan, A Bridge Too Far + SLA Marshall, Battle at Best + James Delingpole, Coward at the Bridge

Staff Ride - Huertgen Forest / Objective Schmidt

- **Prelude - Politics - Strategy**
  - US wanted to capture dams along Roer (Rur) river so Germans would not flood Roer river and cut off US forces on other side of it
- **Approach of armies to battlefield - Why was battle fought here**
  - US believed Hurtgen Forest posed threat as concealed assembly + counter-attack position
  - If US could break through forest to crossroads in Schmidt they would control highest ridge + facilitate attack onto Monschau plain to Ruhr river + then to Rhine
- **Leaders**
  - US had poor morale due to combat stress ~ Germans had good morale as they were now on German soil fighting for homeland + families
- **Logistics**
  - Ammunition + food were in short supply to US forces due to Kall Trail being hard to negotiate + constantly being re-mined + aggressvively patrolled by Germans
- **Weapons - Direct and indirect**
  - Artillery airbursts in forests were deadly
- **Order of Battle**
  - Text
- **Organization - Units and formations**
  - Text
- **Command, control, communications, intelligence**
  - Troops along Kall trail felt isolated + out of touch with mission + chain of command ~ Foxholes provided no shelter from tree bursts + were places for water to collect
- **Tactics**
  - Germans patrolled aggressively - US did not patrol aggressively
- **Weather**
  - Poor weather greatly reduced American advantages in armor + air support, rain turned everything to mud, fog + mist in forests cut visibility
  - Damp cold + water-filled foxholes -> respiratory diseases + immersion foot
- **Terrain**
  - 50 square miles of closely spaced fir trees 100 feet high, saturated ground, dramatic elevation changes, unimproved roads + trails barely wide enough for 1 vehicle -> greatly reduced American advantages in armor + air support
  - Westwall = system of concrete pillboxes + log and earth bunkers with interlocking fields of fire augmented with concertina wire + minefields led to restricted movement
  - Gemeter-Hurtgen-Grosshau ridge + Simmerath-Schmidt ridge were key terrain features

- Battlebook Hurtgenwald and the Kall Trail, USAREUR
- Charles MacDonald + Sidney T. Matthews, Three Battles: Arnaville, Altuzzo, and Schmidt

Staff Ride - Huertgen Forest / Objective Schmidt

- **Operational**
  - 28th Infantry Division plan - 109th Infantry Regiment - attack north towards Hurtgen + block counterattack along left flank, 110th Infantry Regiment attack south from Germeter through forest + pillbox defense line to form corridor in woods near Simonskall that would provide secure usable main supply route to Schmidt, 112th Infantry Regiment to attack Vossenack and then move down dirt trail to Kall River and cross it and go up ridge to Kommerscheidt and then capture Schmidt
- **Chronologic narrative of battle taking note of friction and fog**
  - **November 2, 1944 - 112th Infantry capture Vossenack**
  - **November 3 - 112th Infantry capture Kommerscheidt + Schmidt**
  - **November 4 - German counterattack recaptures Schmidt**
  - **November 5 - German counterattack against Kommerscheidt**
  - **November 6 - During German artillery bombardment of Vossenack, most US troops break + flee, Germans cut Kall Trail thus cutting off US troops at Kommerscheidt**
  - **November 7 - Germans recapture Kommerscheidt, US recaptures Vossenach**
  - **November 8 - US survivors of Kommerscheidt break out back to US lines**
- **Decisions - What good and bad ones were made**
  - **Americans never controlled Kall Gorge**
- **OODA loop - Who is inside the other's**
  - **Low morale helped lead to 28th Infantry Division failure - horrible weather, fatigue, constant artillery bombardment, diabolical nature of dark forest, isolation -> low morale**
- **Who thought they won, who really won**
  - **Germans ~ Germans**
  - **28th Infantry Division had 6,184 casualties (dead, wounded, captured)**
  - **Why the U.S. 28th Infantry Division lost battle for Schmidt - violent German reaction, adverse weather, inadequate + unprotected main supply route on Kall trail, lack of reserves, wide frontage + diverse missions, inability to neutralize Brandenberg-Bergstein ridge**
- **What effect did it all have - Aftermath of battle**
  - **If the forest had been cleared, the US would have been on the Rhine at Koln + Bonn which may have forced Germans to call off Ardennes offensive**
  - **"A misconceived and basically fruitless battle that could have, and should have, been avoided" - Charles MacDonald**

- Battlebook Hurtgenwald and the Kall Trail, USAREUR

- Charles MacDonald + Sidney T. Matthews, Three Battles: Arnaville, Altuzzo, and Schmidt

Staff Ride - Ardennes 1944 - Wacht Am Rhein

- **Prelude - Politics - Strategy**
  - Germans wished to split Allies in two physically + intellectually and wished to capture Antwerp
  - "Never in history was there a coalition like that of our enemies, composed of such heterogeneous elements with such divergent aims...Even now these states are at loggerheads, and, if we can deliver a few more heavy blows, then this artificially bolstered common front may suddenly collapse with a gigantic clap of thunder." - Adolf Hitler (upon ordering the attack through the Ardennes)
- **Approach of armies to battlefield - Why was battle fought here**
  - Germans had used it successfully in 1870, 1914, 1940
- **Leaders**
  - German army excellence due to rigorous selection process for + training system of officers + NCO's and their subsequent ability to transmit combat skills to soldiers
  - German units had amazing ability to rebound in weeks from huge casualties as long as there was cadre of officers to train replacements
  - Officers were 3% of German army + decreasing while officers were 7% of US Army
  - Company was primary group for Germans ~ Squad or platoon was primary group for US
- **Logistics**
  - US good ~ Germans saved up for offensive but still planned on using captured petrol to fuel the attack
- **Weapons - Direct and indirect**
  - US M1 rifle was excellent weapon
  - US used tank destroyers, which had high muzzle velocity guns, to kill tanks (M10 = 76mm, M18 = 76.2mm, M36 = 90mm) ~ Bazooka was useless antitank weapon
  - US artillery highly effective due to US having most effective fire control system due to great equipment for fire direction / observation / coordination + due to well trained Forward Observers dedicated to their supporting units - In 15th Field Artillery Battalion 32/48 Forward Observers became casualties in 6 days of battle
- **Order of Battle**
  - In US infantry division of 14,000 men, only 3,240 were riflemen ~ 1/15 of US soldiers in Europe were riflemen ~ 75% of all casualties came from rifle platoons ~ rate of loss in rifle platoons was 90% ~ By December 1944 there was a severe infantry shortage in US Army in Europe so began assigning anti-aircraft artillery crews as infantry
  - Hitler used Panzer divisions in Normandy which is infantry terrain…and when Allies broke out of Normandy the Germans had only infantry to contain them
  - Only 100 of 1,300 German tanks + assault guns committed to Normandy made it across Seine river ~ In September 1944 average Panzer division had 10 tanks
  - Germans raise 25 VolksGrenadier divisions by December 1st, small divisions of 10,000 men, 14 assault guns, 75% of transportation is horse driven, recon battalion on bikes
- **Organization - Units and formations**
  - At start Germans have 200,000 troops in 6th Panzer Army in north, 5th Panzer Army in center, 7th Army in south against 80,000 U.S. troops in 1 corps
  - Germans also have Skorzeny's English speaking 150th Panzer Brigade to seize bridges over Meuse + cause rear-area confusion
  - By end U.S. has 600,000 troops
- **Command, control, communications, intelligence**
  - German Volksgrenadiers have 2 months of training ~ U.S. have 1 year of training so are well trained but green
- **Tactics**
  - Text
- **Weather**
  - Prevents use of Allied airpower in first week
- **Terrain**
  - Ardennes forest - which is also hilly - used as battleground, Meuse River

Staff Ride - Ardennes 1944 - Wacht Am Rhein

- Operational
  - "All Hitler wants me to do is cross a river, capture Brussels, and then go on and take Antwerp. All this in the worst time of the year through the Ardennes where the snow is waist deep and there isn't room to deploy four tanks abreast let alone armored divisions. Where it doesn't get light until eight and it's dark again at four and with re-formed divisions made up chiefly of kids and sick old men...and get the job done by Christmas!" - Sepp Dietrich
  - 4 critical points - North shoulder near Elsenborn Ridge, South shoulder which is north of Luxembourg City, Bastogne, St. Vith
- Chronologic narrative of battle taking note of friction and fog
  - December 16 - start with KG Peiper consisting of tank battalion, panzergrenadier battalion, recon battalion, battery of 105 mm howitzers, battalion of King Tigers
  - December 17 -> December 23 - Combat Command B of 7th Armored Division holds control of road net around St. Vith from 16th + 18th Volksgrenadier Divisions + Furher Begleit Brigade
  - December 18 - Patton says in 3 days he can counterattack
  - December 20 - 101st Airborne Division + Combat Command B 10th Armored division surrounded in Bastogne
  - December 22 - Patton counterattack begins at 0600 hours - he disengages 3 divisions + moves them + 100,000 vehicles + supplies 100 miles over icy roads in winter
  - December 23 - Weather clears + close air support begins along with air resupply of Bastogne
  - December 26 - Bastogne relieved by Patton's 4th Armor Division + battle is effectively over

  - At Bastogne US had 101st Airborne division ("Battered Bastards of Bastogne"), CCB 10th Armored division, 1 tank destroyer battalion, 2 artillery battalions ~ Germans attacked initially with 3 divisions + later with 4 more but all were at 50% strength
  - 101st Airborne took huge amount of artillery ammunition + used it well while Germans had little artillery ~ 101st Airborne fought on interior lines while Germans could not move around easily
  - German attacks at Bastogne were piecemeal + without vigor - senior Germans did not believe in plan, there were inadequate roads to move troops + supplies, secrecy of plan gave Germans little time to plan for it, lower German training + morale
- Decisions - What good and bad ones were made
  - U.S. mistakes - failed to predict attack
  - U.S. + British worked well together
  - German mistakes - underestimated speed with which Eisenhower could make decisions, underestimated speed at which Allies could move troops + logistics to counterattack, underestimated desire of U.S. troops to stand + fight rather than break
  - Hitler's planning did not take friction into account - can't fight though Ardennes quickly if someone is resisting - terrain allowed small U.S. forces like platoons to hold up battalions like Thermopylae (American Thermopylae) - Germans should have bypassed St. Vith + Bastogne and got out of Ardennes but they stayed + fought
  - Really was infantry battle, not armor battle and U.S. infantry was better than German Volksgrenadiers
- OODA loop - Who is inside the other's
  - U.S. reacted very quickly
- Who thought they won, who really won
  - Americans, Americans
- What effect did it all have - Aftermath of battle
  - U.S. - 80,000 casualties ~ Germans - > 100,000 casualties
  - Accelerated German defeat since these troops could not defend Germany from east or west
  - Proved Germans lacked men, material, initiative to continue the war
  - Burial place of Blitzkrieg

- Commanding General United States Army, Senior Leader Battlebook for The Battle of the Bulge

Staff Ride - Bridge at Remagen

- **Prelude - Politics - Strategy**
  - Rhine is last barrier to Western allies need to cross to capture Germany, been trying to do so since Fall 1944
- **Approach of armies to battlefield - Why was battle fought here**
  - Ludendorff railroad bridge that had been planked over was 1 of 2 remaining bridges across the Rhine ~ Was not formal U.S. objective but was a great opportunity
- **Leaders**
  - All lower level US commanders did something positive at once, none waited for confirmation or approval from next higher commander before committing their unit to operation ~ Higher level commanders sought approval from higher level headquarters, thus demonstrating poor initiative
  - German leadership confused + contradicted over who was in charge of area - General Botsch who had command at Remagen + had good knowledge of the situation was given a new command on afternoon of March 6
- **Logistics**
  - U.S. logistics good ~ German logistics devastated
- **Weapons - Direct and indirect**
  - Text
- **Order of Battle**
  - US - Task Force Engeman - 27th Armored Infantry Battalion + 14th Tank Battalion (minus 1 company), at head of column was A Company 27th Battalion (Karl Timmerman)+ tank platoon from A Company 14th Battalion with M-26 Pershing tank
  - Germans - Volksstrum that melted away, engineers to blow bridge
- **Organization - Units and formations**
  - Text
- **Command, control, communications, intelligence**
  - U.S. leadership is at front (like Germans used to do) ~ Germans are in chaos
- **Tactics**
  - Text
- **Weather**
  - Not a factor
- **Terrain**
  - Most objectionable crossing sites of Rhine were around Remagen as Westerwald is at most rugged, road net severely limited, Rhine flows through a gorge rather than a valley

- John Montgomery, The Remagen Bridgehead, Military Review
- Charles MacDonald, US Army in World War II, The European Theater of Operations, The Last Offensive

Staff Ride - Bridge at Remagen

- **Operational**
  - U.S. pushing broadly towards Rhine, Germans trying to withdraw as many troops as possible across remaining Rhine bridges
- **Chronologic narrative of battle taking note of friction and fog**
  - March 7, 1945 1300 hours - Task Force Engeman of Combat Command B, 9th Armored Division breaks out of woods overlooking Rhine at Remagen + sees Ludendorff Bridge still standing, a few minutes later the Task Force Commander + infantry battalion commander + Combat Command B commander were at the overlook as well, by 1600 hours 3 armored infantry companies are across bridge
  - Bridge was blown by Germans just before US attempted to cross it but this did not collapse the bridge
  - At this time there were not many US troops in reserve to put across bridge but within 4 days, 3.5 US divisions were moved across bridge
  - Bridge was subjected to 383 air strikes, 6 V-2 attacks, assault by underwater swimmers, fire from 540 mm gun (Karl), continuous heavy artillery shelling
  - Bridge was defended by 9 AA automatic weapon battalions, 4 AA gun battalions, barrage balloons, continuous air cover, booms to intercept waterborne objects, 12 depth charges dropped each night into river to defeat underwater swimmers, radar, boat + shore patrols, search lights
  - March 13 - Bridge closed for repairs
  - March 17 - Bridge collapses injuring 93 + killing 28
- **Decisions - What good and bad ones were made**
  - SHAEF operations officer Major General Harold Bull - taking the bridge at Remagen did not "fit into the plan"
  - General Eisenhower - "To hell with the planners. Sure, go on, Brad, and I'll give you everything we've got to hold that bridgehead"
- **OODA loop - Who is inside the other's**
  - US inside the Germans
- **Who thought they won, who really won**
  - US ~ US
- **What effect did it all have - Aftermath of battle**
  - Caesar first crossed Rhine in 55 BC near Andernach, 12 miles south of Remagen
  - "Cross the Rhine with dry feet" - 9th Armored Division
  - Bridge was not rebuilt after the war

- John Montgomery, The Remagen Bridgehead, Military Review

- Charles MacDonald, US Army in World War II, The European Theater of Operations, The Last Offensive

Shock and Awe

- **Military strategists from Sun Tzu to Clausewitz have understood the value of destroying the enemy's will to resist**

- **Means an attack so massive and sudden that the enemy would be stunned, confused, overwhelmed, and paralyzed**

  - **Harlan K. Ullman and James P. Wade Jr. , Shock & Awe: Achieving Rapid Dominance**

Shock and Awe

"To destroy or so confound the will to resist that an adversary will have no alternative except to accept our strategic aims and military objectives. To achieve this outcome, Rapid Dominance must control the operational environment and through that dominance, control what the adversary perceives, understands, and knows, as well as control or regulate what is not perceived, understood, or known."

- Four defining characteristics of Rapid Dominance were listed: knowledge of the battle space environment, rapidity, control of the environment, and "operational brilliance in execution."

    - Harlan K. Ullman and James P. Wade Jr. , Shock & Awe: Achieving Rapid Dominance,

Focused Case Study - Thunder Run

- **USAF Shock and Awe did not work**
- **Original plan for Battle of Baghdad (p. 71)**
  - **Surround city with armor forces**
  - **Infantry to enter and clear city**
- **US Army decides to try Thunder Run**
  - **David Zucchino, Thunder Run**

Focused Case Study - Thunder Run

- **First Thunder Run - April 5**
  - Was "psychological blow…a way to showcase our ability to go anywhere in the city at any time…This is supposed to be his (Saddam's) city. But we just got here - and we drove right through it. No part of the city is safe for him anymore." - Colonel David Perkins (p. 70)
  - Iraq claimed no American forces had entered Baghdad - "Today the tide has turned…We are destroying them." - Mohammed Said al-Sahaf, Information Minister (p.71)
    - "They've done an outstanding job of propaganda. Their people actually believe the regime is defeating the U.S. That is reason enough for them to stand + fight" - Major Charles Watson (p. 80)
  - BBC did not see US forces in the city (p. 72)
  - "You know, this just changed from a tactical war to an information war. We need to go in and stay." - Colonel David Perkins (p.72)
    - David Zucchino, Thunder Run

Focused Case Study - Thunder Run

- **Toppling Saddam's regime from within**
  - **Create chaos, strike with such violence and speed the regime would be incapable of a coherent response (p. 76) - 5 million people / thousands of troops in the city (p. 82)**
  - **Perkin's lessons learned from April 5 (p. 73)**
    - **Interchanges were critical / Momentum had to be maintained**
  - **Perkin's objectives - key nodes to be seized / held for the night - like planning a third world coup to collapse government (p. 73)**
    - **Presidential palace, top ministries, TV station, security headquarters**
      - **In Baghdad they were all located together and were in open terrain**
    - **Use 970 soldiers / 60 M-1 tanks / 28 Bradleys (p. 82)**
  - **Perkin's logistics - hold Highway 8 as the Line of Communication**
    - **Use few hundred soldiers / 14 M-1 tanks / 30 Bradleys (p. 82)**
  - **Perkin's key decisions**
    - **Whether to spend the night in Baghdad, how to reposition units as battle evolved, how to best use artillery and air support, how to resupply forces in the city, when to send supplies up Highway 8 (p. 84)**
    - **- David Zucchino, Thunder Run**

Focused Case Study - Thunder Run

- **The brief**
  - **What soldiers need in order to fight with vigor and determination - was motivation and inspiration. It wasn't enough to know their missions. They had to know their purpose (p. 80)**
  - **A combat commander needs to perform for his men, to inspire them and persuade them that the mission at hand is the most important thing on earth at that moment (p. 89)**

    "We have set the conditions to create the collapse of the Iraqi regime. Now we're transitioning from a tactical battle to a psychological and informational battle. This is the last big battle tomorrow, gentlemen. They said it would take five divisions to win this war, but there's no question now that we can really do it ourselves tomorrow. We've got to seal the deal now." - Colonel David Perkins (p. 80)

    "We're going to the back of the room where they give the news conferences…and ask for validation for parking for a hundred tanks" - Colonel David Perkins (p. 82)

    - David Zucchino, Thunder Run

Focused Case Study - Thunder Run

- **Course of the Battle**
    - **(Once at Saddam's Palace) Perkins believed he had accomplished his first goal - to create chaos, to disrupt Iraqi defenses with the speed and violence of the armored thrust…his tanks and Bradleys were behind the enemy. The second goal was now attainable - to fight from the inside out, to establish a foothold in the center of the capital and push outward and collapse regime from within (p. 128)**
        - **There was also a strategic matter Perkins knew he needed to address. He had to outflank Mohammed Sahaf…Sahaf had the international press corps at this disposal across the river. Perkins had…Fox News (p. 129)**
    - **Brigade Tactical Operations Center hit by cruise missile**
    - **The battles for Curly, Larry, and Moe**
        - **Line of communication vulnerable, forces low on ammunition**
    - **Resupply convoy ambushed**
    - **Reserves committed**
    - **Perkin's decision support matrix told him to cut his losses, retreat, try again another day**
        - **"…a retreat now would validate Sahaf's outrageous propaganda."**
    - **The counterattack against US forces in Baghdad**
        - **- David Zucchino, Thunder Run**

Case Study Summary - Battle of Baghdad

- **Goal**
  - **Collapse the regime from within**
- **Center of Gravity (Strategy)**
  - **Baghdad palaces**
- **Equipment**
  - **US - armor ~ Iraq - small arms**
- **Training**
  - **US - superb ~ Iraq - none**
- **Leadership**
  - **US - great ~ Iraq - non existent**

Case Study Summary - Battle of Baghdad

- **Morale**
  - **US - way to end war ~ Iraq - OK (Syrians)**
- **Tactics**
  - **US - don't stop moving ~ Iraq - Somali urban fight**
- **Intangibles**
  - **Lack spare parts**
  - **Got inside Iraqi OODA loop + increased their fog of war**
- **Mistakes**
  - **Line of communication under defended**
  - **Lack of intelligence**
- **Outcome**
  - **Ended major combat operations**

Focused Case Study - American Generalship in Afghanistan + Iraq

"American generalship in the wars in Afghanistan and Iraq was too often a tale of ineptitude exacerbated by a wholesale lack of accountability. Both wars began badly, with General Tommy R. Franks failing to understand what he was wading into. In many ways, Franks is the representative general of the post-9/11 era. He concerned himself principally with tactical matters, refusing to think seriously about what would happen after his forces attacked. "I knew the President and Don Rumsfeld would back me up," he wrote in his memoir, "so I felt free to pass the message along to the bureaucracy beneath them: *You pay attention to the day after and I'll pay attention to the day of."* Franks fundamentally misunderstood generalship, which at its topmost levels must link military action to political results."

- Thomas Ricks, General Failure, the Atlantic, November 2012

Personal Case Study -
Lt. Mohamed R. M.D., Iraqi Army

- **Role - Battalion Surgeon Iraqi Army 1990**
- **Story - Graduated from medical school 1988, did 2 year internship**
- **Drafted in Iraqi Army in 1990, participated in invasion of Kuwait**
  - **Assigned to reserve battalion commanded by lawyer**
    - **Was battalion surgeon with 8 physician assistants**
    - **Performed preventive health, treated casualties**
    - **Issued atropine to treat suspected chemical casualties**
  - **Army dug in underground, burned tires to obscure US aircraft ~ Bombed constantly**
  - **Among first in battalion to get leave to go home**
    - **Mother was a judge - would not let him return to battalion**
    - **US invades Kuwait - battalion is destroyed**
    - **Classified as deserter + accused of stealing supplies - given death sentence**

Personal Case Study - Lt. Mohamed R. M.D., Iraqi Army

- **1991, several months later, journeys to Kirkuk to attempt to rejoin his battalion**
  - Goes with cousin who is in Iraqi special operations
  - New battalion commanding officer tells cousin if physician reports for duty he will be executed - but he lets physician go out of respect for cousin's position
  - His mother the judge and his father the law professor find this unacceptable - get in car and drive to see commanding officer
  - Turns out commanding officer had father as professor in law school (father also had Saddam as a student)
    - Commanding officer destroys all records of desertion + stealing
    - Physician allowed back into battalion, treated like royalty, given honorable discharge
- **Immigrates from Iraq -> Jordan -> New Zealand -> US**
- **…Like the Sopranos, but with baklava instead of cannoli…**
- **(Saddam's favorite film was The Godfather)**
- **Is mixed Shia / Sunni**

Class Simulation

- **Strategy aspects**

Poem

'Good morning; good-morning!' the General said
When we met him last week on our way to the line.
Now the soldiers he smiled at are most of 'em dead,
And we're cursing his staff for incompetent swine.
'He's a cheery old card', grunted Harry to Jack
As they slogged up to Arras with rifle and pack.

But he did for them both by his plan of attack.

- Siegfried Sassoon, The General

Questions for Further Discussion

- **What is the difference between grand strategy, strategy, and tactics?**
- **How do you evaluate your adversaries' intentions and capabilities?**

Reading Assignments

- **How to Make War Chapter 16**
- **TED Talks for this Topic**
  - **http://www.warstudiesprimer.org/ToLearnMore.html**

Recommended Reading to Learn More

- **Non-fiction**
  - **Richard Overy - Why the Allies Won**
- **Fiction**
- **Movies**
  - **Paths of Glory**
- **Simulations**
  - **Victory in the Pacific - Avalon Hill**

Conclusion

- **Rules for the conduct of war:**
  - **In War: Resolution**
  - **In Defeat: Defiance**
  - **In Victory: Magnanimity**
  - **In Peace: Goodwill**
                                    - Winston Churchill

Conclusion

"What made her great was men with the spirit of adventure. Men who knew their duty. Men who were ashamed to fall below a certain standard. They gave to her their lives, to all of us for their own selves. They won prizes that never grow old."

- Pericles reflecting on the greatness of Athens

Conclusion

"Good tactics can't fix bad strategy or the absence of strategy."

- Colonel Bob Killebriew

Conclusion

"I'll tell you what war is about. You've got to kill people, and when you've killed enough, they stop fighting."

- General Curtis LeMay

Topic 16

Is That All There Is?

How Do Wars End?

Song

Out west in Gopher Gulch lived Indian tribe.
Then come the pioneers, pushed them aside.
All Indians leave but two, they vow to fight.
What can two Indians do?

Go go gophers, watch them go go go.
Go go gophers, watch them go go go.

Here comes the colonel with his sergeant,
Both are a-roarin' and a-chargin'.
Go go gophers, watch them go go go.

Two little Indians, no others near.
Colonel he vows these two soon disappear.
Fighting the army with soldiers galore.
What can two Indians do?

      - Artist unknown, Go Go Gophers

Thematic Quote

"Wars begin where you will, but they do not end where you please"

- Niccolo Machiavelli

Thematic Quote

"Tell General Howard…I am tired of fighting. Our chiefs are killed; Looking Glass is dead, Too-hul-hul-sote is dead. The old men are all dead. It is the young men who say yes or no. He who led on the young men is dead.

It is cold, and we have no blankets; the little children are freezing to death. My people, some of them have run away to the hills and have no blankets, no food. No one knows where they are - perhaps freezing to death.

I want to have time to look for my children, and see how many of them I can find. Maybe I shall find them among the dead. Hear me, my chiefs! I am tired; my heart is sick and sad. From where the sun now stands, I will fight no more forever."

- Chief Joseph of Nez Perce

Thematic Quote

"You guys (West Point cadets) only do good at those things you're tested in. If we don't test you in it, you don't care anything about it. And we don't test nation-building in the military. We don't test stabilization in the military. We don't test putting a government together and running governmental organizations and handling the quality of life for civilians, and that type of thing. And until we make that part of our institutional training and part of our evaluations, we're never going to do that very good."

- Lt. General Jay Garner

Thematic Quote

"Conceived in uncertainty, reconstruction operations are often conducted with precarious responsibility, and doubtful authority, under indeterminate order, lacking specific instructions."

- USMC Small Wars Manual, 1940

The Painting

Bayeux Tapestry

- Artist unknown

(Bayeux Tapestry Museum)

The Question

How and why do wars end?

Why do people surrender?

What happens after wars?

How will the new challenge of peacekeeping affect the armed forces?

How Wars End According to Clausewitz- The Rational Calculus of War

"Since war is not an act of senseless passion but is controlled by its political object, the value of this object must determine the sacrifices to be made for it in *magnitude* and also in *duration*…Once the expenditure of effort exceeds the value of the political object, the object must be renounced and peace must follow."

- Clausewitz

[Translation: a war should be ended by one side when it costs too much, drags on without end, or appears unwinnable]

How Wars End, According to Clausewitz

"Even the ultimate outcome of a war is not always to be regarded as final. The defeated state often considers the outcome merely as a transitory evil, for which a remedy may still be found in political conditions at some later date."

- Clausewitz

(The victor needs the consent of the vanquished to make the military result permanent. If the vanquished reject the outcome, they set the stage for new rounds of struggle.)

"No war is over until the enemy says it's over. We may think it over, we may declare it over, but in fact, the enemy gets a vote."

- General James Mattis, USMC

How Do Wars End, According to Keegan

- **The exception - The Second World War - ended rather neatly because the Germans and Japanese had the stuffing knocked out of them, were disciplined and law abiding societies...but in the rest of the world The Second World War did not end neatly**
  - **In Greece, guerilla war against Germans became civil war until 1949 killing 150,000**
  - **In China, Vietnam, Indonesia, Burma, Second World War became wars of national liberation lasting years and killing hundreds of thousands**
    - **John Keegan, History Tells Us That Most Conflicts End in Chaos, Daily Telegraph, June 1, 2004**

How Do Wars End, According to Keegan

- **The rule - World War I - On Armistice night, Lloyd George said to Churchill - "The war of the giants is over. The war of the pygmies is about to begin"**
    - **Civil wars began in Germany, Hungary, Poland, Baltic states, Finland, and Russia which killed and starved millions, Greece fought Turkey which led to 300,000 dead**
    - **Iraq attempted to throw the British out**
- **The rule - Iraq 2003**
    - **- John Keegan, History Tells Us That Most Conflicts End in Chaos, Daily Telegraph, June 1, 2004**

How Do Wars End, According to Keegan

- **Why do wars end in unopposed occupation of enemy territory?**
  - Defeated nation has exhausted itself in the struggle and is dependent on victor for necessities and protection against further disaster
- **Why do wars end in opposed occupation of enemy territory ?**
  - War has not done much harm but has broken the power of the state and encouraged the dispossessed and the irresponsible to grab what they can before order is fully restored
  - **- John Keegan, History Tells Us That Most Conflicts End in Chaos, Daily Telegraph, Jun 1, 2004**

Focused Case Study - How Wars Should End

- **August 14 - Japan Surrenders**
- **September 2, 1945 - Surrender ceremony in Tokyo Bay**
- **September 2, 1945 - 7 officers from USS Haddo take sightseeing trip through Tokyo**
  - **Armed with sidearms**
    - **Civilians pay little attention to them, are curious + polite**
  - **Rode train from Yokosuka to Tokyo**
    - **Most of packed-in passengers are Japanese soldiers**
  - **Were first Allied troops into Tokyo**
    - **Railroad official gives them tour of city ~ Notice the devastation ~ Lack of vehicles on road ~ Return train leaves right on time**

- Robert Taylor Rhea, First Into Tokyo, Proceedings August 2005, p. 20-24

Getting Out of a War is Always Harder Than Getting Into One

- **Outside of Europe, the ends of wars of empire usually result in protracted post-war strife**
  - **US in the Philippines**
  - **British in India, Africa, ex-Ottoman empire (Iraq)**
  - **- John Keegan, Getting Out of a War is Always Harder Than Getting Into One, Daily Telegraph, June 26, 2003**

How Wars End According to Zinni

- **Defeating hostile forces militarily does not necessarily mean victory**

- **Victory only comes when the defeated people see that they have a livable future and that they have some say in it**

  - Anthony Zinni, Battle Ready, p. 22

"Victory no longer happens when you capture the enemy capital…victory happens when you put in place a lasting, stable environment."

  - Anthony Zinni, Battle Ready, p.433

Wars That Cannot End

"In past wars - the historical wars we have all studied - it was government against government. Their aims were clear and the ability to defeat them was also clear. But with the instigation of war against non-state actors, where their intentions are less clear, where their center of gravity is difficult to find and where the endgame is a little less clear-cut - that becomes very difficult for the military men."

- Lt. General Richard Mills, USMC

Focused Case Study - Thunder Run - Is That All There Is?

"…it was clear to him the war was ending. (Specialist) Agee was uneasy, and he found himself actually wishing somebody would take a shot at him so that he could get back into the fight. He missed the wild intensity of it all, the purity of effort and will." (p. 307)

- David Zucchino, Thunder Run

Focused Case Study - Thunder Run - Is That All There Is?

"…shortly after the April 7th thunder run was over - many of the soldiers of the brigade had begun to experience a fleeting sense of loss. They had spent months training for combat. They had survived three intense weeks of relentless desert and urban warfare. They had been honed and focused. They had had a clear mission and a defined goal that drove them and united them in a singular, shared purpose. For all the terror and confusion they had experienced in battle, and for all the misery of their living conditions, they had felt a remarkable sense of clarity and fulfillment…After the adrenaline had drained away and they were suddenly at rest, some of them sought out the chaplains and poured out their emotions. They had been fighting and moving and killing for day after day, and suddenly it had all been shut down. They wanted - they needed - to sort through it all. Some soldiers confessed that they had not comprehended precisely what would be asked of them while in pursuit of the enemy…they had not fully realized what it would take to prevail…A few of them realized that they had embraced the thrill of the fight, and this discovery troubled them deeply. But most of all, the men from the Second Brigade felt an ineffable loss of purity. They had been part of a unique moment in modern military history. They had captured something seductive and elusive, and they did not know how to get it back." (p. 325)

- David Zucchino, Thunder Run

Personal Case Study - When the Losers Write the History

- **Yushukan War Museum - it's view of history**
  - In 19th century, the West colonizes Asia
  - Japan is first Asian country to successfully fight back against West (Russia) in 1905
  - Denies atrocities committed in China and World War II
  - Greater East Asian War is Japan's struggle to liberate Asia from Western colonization
  - Surrender in 1945 a temporary setback, Japan eventually prevails, ridding Asia of Western colonization

  - Privately funded ~ Perfectly translated
  - Centerpiece is Suicide Gallery - Kamikaze + Yamato
  - Statues to Kamikaze ~ military horse ~ widowed mothers + families
  - "Fanatic nationalists" <-> Unrepentant nationalists
- **Contrasting bookends**
  - Pearl Harbor / Punchbowl in May 2008 ~ Yushukan in June 2008

Unrepentant Nationalists?

- **2008 competition for the best essay to deny Japan's wartime role as an aggressor and sponsor of atrocities**
- **Winner was General Toshio Tamogami, Chief of Staff of Japanese Air Self Defense Force**
  - **Japan attacked Pearl Harbor because of a "trap" set by U.S. President Franklin D. Roosevelt, Tamogami claimed in his essay, which also argued "that many Asian countries take a positive view" of Japan's role in the war.**
  - **He wrote, too, that the war was good for international race relations: "If Japan had not fought the Great East Asia War at that time, it might have taken another 100 or 200 years before we could have experienced the world of racial equality that we have today."**
  - **The essay concluded that "it is certainly a false accusation to say that our country was an aggressor nation."**
- **He was fired because his views were not the views of the government…but 78 of 230 entrants in essay contest were Air Force officers**

- Blain Harden, WWII Apologists Persist Despite Japanese Policy, Washington Post, Nov. 3, 2008

- The Ghost of Wartimes Past, Economist, Nov 6, 2008

"A soldier of the Great War known unto God" - Kipling

- **Commonwealth War Graves Commission**
  - **Principle was that British war dead should be buried and commemorated as near the spot where they died as possible + no inquests held because cause of death was evident**
    - **Those who died together should be buried together, officers + men alike**
    - **Each casualty should be individually commemorated with standard headstone**
    - **Result is extraordinarily dignified + moving with cemeteries fulfilling their purpose to commemorate, honor, console**
- **But now war dead are being repatriated due to fear of desecration of graves in new battlegrounds in war on terror**

- John Keegan, We'll Miss Our Corners of a Foreign Field, Daily Telegraph, June 6, 2006

Phases of Combat

- **Phase I - Preparation for combat**
- **Phase II - Initial operations**
- **Phase III - Combat**
- **Phase IV - Stability and support operations**

What Comes After War

- **Stability operations**
- **Peacekeeping**
- **Humanitarian operations**
- **Operations Other Than War (OOTW)**

Warriors vs. Police Officers

"Warriors protect people. That is an ethical warrior. A warrior chooses sides and says I am willing to use violence to stop somebody from using violence against my side…

A police officer does not choose sides. He is on the side of the law."

- Karl Marlantes

Zinni on How to Conduct an Operation

- **Need clear objective of what you are trying to do - need clear mission**
  - **Be clear of what you intend to do**
    - **Time required**
    - **Duration of operation**
    - **Cost**
    - **What you are asking for in terms of national support**
    - **What you are asking for in terms of international support**
    - **Anthony Zinni, Conference on Cooperation Between Military and Humanitarian Aid Groups, Dec. 7, 2004**

Zinni on How to Transform a Society

- **1. Get security right**
- **2. Have to create capability**
  - **Rule of law**
  - **Judicial system**
  - **Administrative system**
- **3. Economic development**
  - **Help business thrive**
  - **Encourage foreign investment**
  - **- Anthony Zinni, Conference on Cooperation Between Military and Humanitarian Aid Groups, Dec. 7, 2004**

Zinni on Peacemaking

"Each peacemaking situation is unique. No matter how much experience you have, each conflict brings its own unique requirements. You have to develop a process distinctive to it.

Gaining more experiences builds up your experience base and your understanding of the possibilities, and that shows you how to combine, mix-match, develop, and modify from past experiences to fit the unique situation you're in. Experience doesn't give you any big answers. It shows you how to be creative."

- Anthony Zinni, Battle Ready, p. 358

General Zinni's Lessons for OOTW

- **Each operation is unique. We must be careful what lessons we learn from a single experience.**

- **Each operation has two key aspects - the degree of complexity of the operation and the degree of consent of the involved parties and the international community for the operation.**

- **The earlier the involvement, the better the chance for success.**

- **Start planning as early as possible, include everyone in the planning process.**

  - Dave Dilegge, General Anthony Zinni's MOOTW Considerations Make Sense in Iraq, Urban Operations Journal, Feb 28 2003

General Zinni's Lessons for OOTW

- **Make as thorough an assessment as possible before deployment.**

- **Conduct a thorough mission analysis, determine the centers of gravity, end state, commander's intent, measures of effectiveness, exit strategy, and the estimated duration of the operation.**

- **Stay focused on the mission. Line up military tasks with political objectives. Avoid mission creep and allow for mission shifts. A mission shift is a conscious decision, made by political leadership in consultation with the military commander, responding to a changing situation.**

- Dave Dilegge, General Anthony Zinni's MOOTW Considerations Make Sense in Iraq, Urban Operations Journal, Feb 28 2003

General Zinni's Lessons for OOTW

- **Centralize planning and decentralize execution of the operation. This allows subordinate commanders to make appropriate adjustments to meet their individual situation or rapidly changing conditions.**

- **Coordinate everything with everybody. Establish coordination mechanisms that include political, military, nongovernmental organizations, and the interested parties.**

- **Know the culture and the issues. We must know who the decision-makers are. We must know how the involved parties think. We cannot impose our cultural values on people with their own culture.**

- Dave Dilegge, General Anthony Zinni's MOOTW Considerations Make Sense in Iraq, Urban Operations Journal, Feb 28 2003

General Zinni's Lessons for OOTW

- **Start or restore key institutions as early as possible.**

- **Don't lose the initiative and momentum.**

- **Don't make unnecessary enemies. If you do, don't treat them gently. Avoid mindsets or words that might come back to haunt you.**

- **Seek unity of effort and unity of command. Create the fewest possible seams between organizations and involved parties.**

- **Open a dialogue with everyone. Establish a forum for each of the involved parties.**

    - Dave Dilegge, General Anthony Zinni's MOOTW Considerations Make Sense in Iraq, Urban Operations Journal, Feb 28 2003

General Zinni's Lessons for OOTW

- **Encourage innovation and nontraditional responses.**

- **Personalities are often more important than processes. You need the right people in the right places.**

- **Be careful whom you empower. Think carefully about who you invite to participate, use as a go-between, or enter into contracts with since you are giving them influence in the process.**

    - Dave Dilegge, General Anthony Zinni's MOOTW Considerations Make Sense in Iraq, Urban Operations Journal, Feb 28 2003

General Zinni's Lessons for OOTW

- **Decide on the image you want to portray and keep focused on it. Whatever the image; humanitarian or firm, but well-intentioned agent of change; ensure your troops are aware of it so they can conduct themselves accordingly.**

- **Centralize information management. Ensure that your public affairs and psychological operations are coordinated, accurate and consistent.**

  - Dave Dilegge, General Anthony Zinni's MOOTW Considerations Make Sense in Iraq, Urban Operations Journal, Feb 28 2003

General Zinni's Lessons for OOTW

- **Seek compatibility in all operations; cultural and political compatibility and military interoperability are crucial to success. The interests, cultures, capabilities, and motivations of all parties may not be uniform; but they cannot be allowed to work against one another.**

- **Senior commanders and their staffs need the most education and training in nontraditional roles. The troops need awareness and understanding of their roles. The commander and the staff need to develop and apply new skills, such as negotiating, supporting humanitarian organizations effectively and appropriately, and building coordinating agencies with humanitarian goals.**

  - Dave Dilegge, General Anthony Zinni's MOOTW Considerations Make Sense in Iraq, Urban Operations Journal, Feb 28 2003

Non-Government Organizations - NGOs

- **International organizations that operate independently of governments in order to achieve humanitarian goals**
- **Advent of modern NGOs**
  - **Early 19th century - Anti-Slavery Society**
  - **1860's - Red Cross**
    - **Advocated humane treatment of prisoners, wounded, civilians**
    - **Helped pass Geneva Conventions**
  - **1960 = 1,000 NGOs ~ 2005 = 5,000 NGOs**
- **Mass media make them possible**
  - **Live or die by amount of attention press gives them**
  - **Are pressure groups with international outlook + agenda**
    - **Call for military intervention in war zone ~ Go on to deliver humanitarian services there ~ Media attention helps raise money**
    - **- The Backlash Against NGOs, StrategyPage, October 12, 2005**

Professionalizing Disaster Relief

"The most important thing in a sudden disaster is logistics" - Adrian van der Knapp of the UN

- NGOs today operate like tech industry in past
  - Are balkanized
  - Don't pool resources
  - Manned by inexperienced volunteers
  - Lack accounting systems
  - Therefore, much aid is never delivered
- Global cargo industry trying to transform inefficient world of disaster relief
  - Applying nuts-and-bolts logistics techniques to emergency supply chains
    - Organizing airport operations ~ Packaging of supplies ~ Delivery

- Glenn Simpson, In Year of Disasters Experts Bring Order to Chaos of Relief, Wall Street Journal, Nov. 22, 2005

Focused Case Study - Lewis and Clark and the Corps of Discovery

- **Joseph Banks believed in scientific exploration when conducted in support of British Empire**
  - **Banks got British military involved in exploration**
- **Thomas Jefferson was influenced by Banks' philosophy so he sent out Lewis and Clark**
  - **Lewis was Jefferson's friend, military, trained in scientific techniques**
  - **Corps of Discovery was a military exploration team representing US interests and pursuing US Empire's goals, just like British did**
- **Lewis and Clark were first of many US military exploration and mapping missions of West**
  - **Continued to ~ 1880 when USGS was formed to do this work, in part because peacetime US military was too small to do it anymore**

- Beyond Lewis and Clark: The Army Explores the West, Frontier Army Museum

Maslow's Hierarchy of Needs

- **Lowest to highest level**
  - **Physiological, Safety, Love/Belonging, Esteem, Actualization**
- **The way to conduct Phase IV operations is to address these needs from the bottom up**
  - **Provide basic services and security…**
  - **..then win hearts and minds**
  - **Finally, hold elections and establish a government / army**
    - **In Iraq, we conducted Phase IV operations from the top down**

      - John Robb, State Failure 101, Global Guerillas, Dec. 13, 2004

Focused Case Study - Hierarchy of Needs - Lawrence of Arabia

- **Occupation of Damascus 1918**
  - **Dashes across desert ahead of Allenby's army, finds city in chaos after Germans and Turks had left, order collapsed, local factions fighting over who would gain power under Allied promise of self-government**
  - **Lawrence immediately appointed Syrian military governor and chief of police to command local support**
  - **Every official, regardless of loyalty, told to report to work**
  - **Engineers sent to fix water supply and to get street lights working by night as sign he was in control**
  - **Secured food supplies ~ Inspected the hospital**
  - **Met any breaches of order with bullet**
  - **"A thousand and one things had to be thought of, but never once was Lawrence at a loss"**
    - **Simon Jenkins, Our Leaders Have Forgotten the Legacy of Lawrence of Arabia, Guardian, Feb. 10, 2006**

Focused Case Study: Herbert Hoover and OOTW - The "Napoleon of Mercy"

- **Mining engineer was self-made millionaire by 40 years old**
  - **Was Quaker - tradition of being humane + generous to others**
  - **So embarked on a career of public service**
    - **1914 - Chairman of Commission for Relief in Belgium**
      - **Organized rescue of an entire nation from starvation - was embodiment of American benevolence**
    - **1917 - US Food Administrator**
    - **1918-1919 - Director General of American Relief Administration, helps feed 350 million people in 21 countries**
      - **Helped to get nascent European countries back on their feet + quell threat of Communist revolutions**
    - **1919 - Founds Hoover Institute of War, Revolution + Peace at Stanford**
    - **In World War II established nongovernmental relief agencies to help civilians in Poland + Finland**
    - **After World War II helped establish UNICEF**
    - **"Being a politician is a poor profession. Being a public servant is a noble one" - Herbert Hoover**
    - **- Herbert Hoover Presidential Library and National Historic Site**
    - **- George Nash, Herbert Hoover 'Napoleon of Mercy', Wall Street Journal, Oct. 17, 2014**

Focused Case Study - OOTW in WWII

- **Notes to Joppolo From Joppolo**
  - **Don't make yourself cheap**
  - **Always be accessible to the public**
  - **Don't play favorites**
  - **Speak Italian whenever possible**
  - **Don't lose your temper**
  - **When plans fall down, improvise**
  - **Be careful about accepting invitations**

  - John Hersey, A Bell for Adano, p. 14

  (Modeled after Major Frank E. Toscani, military governor of Licata)

"So how should we operate on a tactical level to manage an unruly world? What are the rules and what are the tools?"

  - **Rule #1 - Produce More Joppolos**

  - Robert D. Kaplan, Supremacy by Stealth, The Atlantic, July / August 2003

Focused Case Study - Asian Tsunami December 26, 2004

- **Expeditionary Strike Group 5 - USS Bonhomme Richard**
  - **Start planning before formal order**
  - **Improvise supplies / proceed at best speed**
  - **No boots on ground due to active insurgency, desire to not appear to need foreign help, Muslim population**
  - **"The heroes are the logisticians"**
  - **"Go slow" / Use 4 words - "How Can We Help?"**
  - **"…biggest challenge is figuring out how to be useful in a way that doesn't, in the long term, alienate people."**

- Dan Baum, Mission to Sumatra, New Yorker Feb. 7, 2005

Personal Case Study - Hawaiian Great Flood of March 2006

- **Background - Deluge**
  - **25" of rain in 5 days ~ 30" of rain in 3 weeks ~ good simulation of Noah and Ark**
- **Hawaii - Not the US ~ more a developing country**
  - **Exquisite scenery ~ mediocre infrastructure**
  - **Plantation owners vs. plantation workers**
- **Cast of Characters**
  - **Major General Robert Lee - state adjutant general**
  - **Governor Linda Lingle (R)**
  - **USCG Search and Rescue**
- **Problems**
  - **Rain -> standing water -> disease**
  - **Rain -> rivers overflowing -> flash floods**
  - **Rain -> overstressed dams -> dam collapse / mudslides**

Personal Case Study - Hawaiian Great Flood of March 2006

- **Communications**
  - **TV**
    - **Weather Channel - continuous lo-res coverage**
    - **No Kauai TV, TV from Oahu at 5 pm+10 pm - hi res coverage**
  - **Radio**
    - **KKCR - Radio Moscow with hippies**
    - **NPR not tunable**
    - **KQNG - open source intelligence - Ron Wiley**
  - **Newspaper**
    - **Garden Island - daily**

Personal Case Study - Hawaiian Great Flood of March 2006

- **Personal Evacuation Plan implemented**
- **Question**
  - **Will Waita Reservoir above Koloa burst?**
    - **Owned by Grove Farm (Steve Case) ~ We were below it**
  - **Felt relief next day when cavalry arrived - Hawaiian National Guard Blackhawk helicopter - with Army Corps of Engineers personnel**
    - **Now professionals rather than amateurs were in charge**
- **Outcome**
  - **1 dam did burst, killing 7 people**
    - **Worse loss of life on Kauai since tsunami in 1950's**
  - **Excellent leadership at county + state levels prevented further loss of life**
    - **Mayor / Governor / National Guard**

Personal Case Study - Neil O.

- **Role - NGO Worker - American Red Cross**
- **Story**
  - **Background**
    - **Ham, computer engineer, intellectual property attorney**
  - **Hurricane Katrina relief in 2005**
    - **Mississippi / Biloxi**
  - **Mission**
    - **Provide computing , networking, communication services for relief workers via satellite using special truck**
  - **Most vivid memories**
    - **Distributing meals to shelters ~ Utter devastation**
    - **Felt he contributed so little - overwhelmed by size of problem**
    - **Airplane hanger to sleep in ~ Best breakfast he ever had**
  - **Lessons learned**
    - **Workers really good at basics of food / shelter / medical care**
    - **Administrators not so good at the bureaucracy**
    - **Could not understand why he would be seen as a hero by kids**

Personal Case Study - Jerry D., M.D.

- **Role - NGO Worker - Medicins San Frontieres**
- **Story**
  - **Background**
    - **Pediatrician ~ radiologist ~ pediatric radiologist**
  - **Afghanistan - 6 months in 1995**
  - **Mission**
    - **Renovation of provincial hospital in Ghazni**
      - **Give aid to part of country under Taliban rule**
      - **Give pediatric care, train local medical staff, establish internal medicine ward**
  - **Most vivid memories**
    - **I hope the Taliban does not learn my religion**
  - **Lessons learned**
    - **Difference between "need" and "want"**
    - **Fighting will never end-people fight to earn salary from warlords**

Class Simulation

- **End game aspects**

Poem

If I should die, think only this of me:
That there's some corner of a foreign field
That is for ever England. There shall be
In that rich earth a richer dust concealed;
A dust whom England bore, shaped, made aware,
Gave, once, her flowers to love, her ways to roam,
A body of England's, breathing English air,
Washed by the rivers, blest by suns of home.

And think, this heart, all evil shed away,
A pulse in the eternal mind, no less
Gives somewhere back the thoughts by England given;
Her sights and sounds; dreams happy as her day;
And laughter, learnt of friends; and gentleness,
In hearts at peace, under an English heaven.

- Rupert Brooke, The War Sonnets - V. The Soldier

Questions for Further Discussion

- **When and how should countries intervene in humanitarian operations?**

- **How does Maslow's Hierarchy of Needs relate to Operations Other Than War?**

- **What are some principles for the conduct of Operations Other Than War?**

- **How can NGOs be more of a hindrance than a help?**

Reading Assignments

- **How to Make War Chapter 21**
- **TED Talks for this Topic**
  - **http://www.warstudiesprimer.org/ToLearnMore.html**

Recommended Reading to Learn More

- **Non-fiction**
- **Fiction**
- **Movies**
  - **Warriors**
- **Simulations**

Conclusion

"Equo ne credite, Teucri / Quidquid id est, timeo Danaos et dona ferentes"

(Do not trust the Horse, Trojans / Whatever it is, I fear the Greeks even bearing gifts)

- Laocoön in the Aeneid by Virgil

Topic 17

Wars That Never End

Guerilla Wars

Song

The general scratches his belly and thinks
His pay is good but his officers stink
Guerilla girl, hard and sweet
A military man would love to meet

The President looks in the mirror and speaks
His shirts are clean but his country reeks
Unpaid bills
In Afghanistan hills

Bombs away
But we're O.K.
Bombs away
In old Bombay
    - The Police, Bombs Away

Thematic Quote

"It was necessary to destroy the town in order to save it"

- Anonymous US Army officer after the destruction of the village Ben Tre in 1968

Thematic Quote

"If your unit is the one getting ambushed, it's not low intensity war."

- Anonymous Marine officer

The Painting

The Third of May 1808
- Francisco de Goya

The Question

When and how should countries intervene militarily in guerilla wars that are civil wars / insurgencies?

Definitions

- **An insurgency is a rebellion**
  - **Insurgents are rebels**
- **Guerilla warfare is a method**
  - **Guerillas are its practitioners**

Guerilla Warfare

- **Is a defensive type of war against a foreign invader**

- **Objective is to wait out your opponent until he goes home**

- **Is the most underrated and the most successful form of warfare in human history**

- Ivan Eland

"Guerillas, so long as they do not lose, win"

- Henry Kissinger

Guerilla Warfare

"Guerilla war is the war of the broad masses of an economically backward country standing up against a powerfully equipped and well trained army of aggression...to exhaust the enemy forces little by little by small victories and, at the same time, to maintain and increase our forces"

- General Vo Nguyen Giap, People's War, People's Army p. 48

"We should be the ones in the village, not the people attacking the village"

- John Boyd

Guerilla Warfare

"A guerilla is like a fish that swims in the sea of the people"

- Mao Zedong

"When the enemy advances, we retreat. …
When the enemy retreats, we pursue. …
When the enemy halts, we harass him. …"

- Chapter 2 of Basic Tactics by Mao Zedong (1937)

Guerilla Warfare

"The local fighter is therefore often an accidental guerrilla - fighting us because we are in his space, not because he wishes to invade ours. He follows folk-ways of tribal warfare that are mediated by traditional cultural norms, values, and perceptual lenses; he is engaged (from his point of view) in 'resistance' rather than 'insurgency' and fights principally to be left alone."

- David Kilcullen in The Accidental Guerrilla

Guerilla Warfare

- **In the 20th century, the insurgents have won every time, with the exception of Malaya…**

Counterinsurgency -
From Ph.D. to Practical

- **Rhodes Scholar, Tank platoon commander in Desert Storm, Ph.D. in counterinsurgency from Oxford in 2002, West Point Professor, posted to Iraq in late 2003**

"I thought I understood something about counterinsurgency, until I started doing it."

  - Major John Nagl

- **Guerilla war is chaotic, confused, unpredictable**

  - Peter Maas, Professor Nagl's War, New York Times Magazine, January 11, 2004

What is Counterinsurgency

"Thus, at the operational level counterinsurgency remains a competition between several sides, each seeking to mobilize the population in its cause. The people remain the prize."

- David Kilcullen, Counterinsurgency Redux

"Counterinsurgency is fundamentally a competition between many groups. Counterinsurgency is always more than two-sided."

- David Kilcullen

"It's (Egypt and the Middle East) all so different to the Europe I've just left. There (Europe) life is a series of problems to be solved. Here (the Middle East) it is a series of limitations to be observed, Insha'Allah they all say (if Allah is willing)."

- Michael Palin, Around the World in 80 Days

Lessons From
Seven Pillars of Wisdom

- **Account of Arab guerillas attacking supply lines of a modern conventional military**
- **Tactics used by Lawrence and Arabs similar to those used by Iraqi insurgency**
  - **Avoid set piece battles, chip away at railroad supply lines**
    - **"Ours should be a war of detachment…of never engaging the enemy" -- "Ours were battles of minutes"**
- **Why he could prevail**
  - **His rebellion faced "a sophisticated alien enemy, disposed as an army of occupation in an area greater than could be dominated effectively from fortified posts"**
  - **His side was supported by "a friendly population, of which some two in the hundred were active, and the rest quietly sympathetic to the point of not betraying the movements of the minority"**
  - **Realized in waging or countering an insurgency, the prize is psychological, not physical**
  - **"War upon rebellion was messy and slow, like eating soup with a knife"**
  - **- Thomas Ricks, Lessons of Arabia, Washington Post, Nov 26, 2004**

"It seemed that rebellion must have an unassailable base, something guarded not merely from attack, but from the fear of it: such a base as we had in the Red Sea Ports, the desert, or in the minds of the men we converted to our creed. It must have a sophisticated alien enemy, in the form of a disciplined army of occupation too small to fulfill the doctrine of acreage: too few to adjust number to space, in order to dominate the whole area effectively from fortified posts. It must have a friendly population, not actively friendly, but sympathetic to the point of not betraying rebel movements to the enemy. Rebellions can be made by 2 per cent active in a striking force, and 98 per cent. passively sympathetic. The few active rebels must have the qualities of speed and endurance, ubiquity and independence of arteries of supply. They must have the technical equipment to destroy or paralyze the enemy's organized communications, for irregular war is fairly Willisen's definition of strategy, "the study of communication" in its extreme degree, of attack where the enemy is not. In fifty words: Granted mobility, security (in the form of denying targets to the enemy), time, and doctrine (the idea to convert every subject to friendliness), victory will rest with the insurgents, for the algebraical factors are in the end decisive, and against them perfections of means and spirit struggle quite in vain."

   - T.E. Lawrence, The Evolution of a Revolt

A Practical Approach to Guerilla War

"Better the Arabs do it tolerably than that you do it perfectly. It is their war, and you are to help them, not to win it for them."

- T.E. Lawrence

Logistics, Logistics, Logistics

- **1990's CENTCOM baseline for intervention in Iraq = 400,000 troops**
  - **Data confirmed using experiences in Balkans operations in late 1990's by Army Chief of Staff General Eric Shinseki in early 2003**
  - **But in 2003 Iraq invaded + occupied by 3 1/2 divisions = 100,000 troops**
    - **It was thought that US troops would be seen as liberators**
- **Comparison**
  - **I940 Germans invaded + occupied France with 10 panzer divisions + 93 infantry divisions**
  - **1945 Germany invaded + occupied by 45 US + 20 Commonwealth + 100 Soviet divisions**
  - **- William Christie, Is Iraq Vietnam?**

Guerilla Warfare

"We have broken the back of the Iraq insurgency"

- American general after Battle of Fallujah

"Insurgencies, like octopi, are invertebrates"

- William Lind

"Today's insurgents do not plan for the Phase III conventional campaigns that were an integral part of Mao's three-phased insurgency. They know they cannot militarily defeat the outside power. Instead, they seek to destroy the outside power's political will so that it gives up and withdraws forces. They seek to do so by causing political, economic, social, and military damage to the target nation.

After being driven out of Fallujah in November 2004, Abu Musad al-Zarqawi wrote, "The war is very long, and always think of this as the beginning. And always make the enemy think that yesterday was better than today.""

- Thomas X. Hammes, Dealing With Uncertainty, Marine Corps Gazette, November 2005

The Way Forward

- **Insurgencies are based on Mao Zedong's fundamental precept that superior political will can defeat greater economic + military power**
  - **Win not by defeating armed forces but by breaking our political will**
- **Insurgents therefore organize to achieve political rather than military success**
  - **Therefore can't be defeated by military force alone**
    - **Need political, economic, social + military activities**
  - **You can't outfight the insurgent, you out govern him**

- T.X. Hammes, The Way to Win a Guerilla War, Washington Post, Nov 26, 2006

The Way Forward

- **Insurgencies are no longer unified hierarchical organizations that Chinese + Vietnamese developed**
  - **Today insurgents are loose coalitions unified by desire to drive out outside power…when it is gone they will then fight civil war to resolve differences**
- **Insurgents practice art of destruction = easy**
  - **Counterinsurgents must create functioning government = hard**
    - **Not about killing insurgents but about providing security + hope for better future**

- T.X. Hammes, The Way to Win a Guerilla War, Washington Post, Nov 26, 2006

Van Creveld's Paradox

"In other words, he who fights against the weak - and the rag-tag Iraqi militias are very weak indeed - and loses, loses. He who fights against the weak and wins also loses. To kill an opponent who is much weaker than yourself is unnecessary and therefore cruel; to let that opponent kill you is unnecessary and therefore foolish. As Vietnam and countless other cases prove, no armed force however rich, however powerful, however advanced, and however well motivated is immune to this dilemma. The end result is always disintegration and defeat."

- Martin van Creveld, Why Iraq Will End as Vietnam Did

Small Wars Strategic Perspectives

"By their fundamental nature, small wars require an approach more art than science, more analog than digital"

"We must decide before embarking upon any small war whether we can withstand the pressures of our own impatience"

- US Marine Corps, Small Wars 21st Century, p. 34, 35

Small Wars
Operational Perspectives

- **Sir Robert Thompson's Five Basic Principles of Counter-Insurgency**

    - **Have a clear political aim (objective)**

    - **Function in accordance with law (legitimacy, restraint)**

    - **Have an overall plan to include political, social, economic, administrative, police, and other measures (unity of effort)**

    - **Give priority to defeating the political subversion, not the guerillas (objective)**

    - **Secure your base area first (security)**

    - **Sir Robert Thompson, Defeating Communist Insurgency: The Lessons of Malaya and Vietnam, p. 50-57**

Small Wars
Operational Perspectives

"Small wars are first and foremost information wars…

This shift in emphasis from destruction to persuasion creates a radically different context.

Destruction is physical, while persuasion is psychological, which is why small wars may best be viewed as information wars."

- US Marine Corps, Small Wars 21st Century, p. 53

Making the Invisible Visible - 1
How to Prevail in Counterinsurgency

- **1. Abandon conventional military tactics**
  - **"Clear and hold" rather "search and destroy". You must provide enough security for ordinary people to live their lives.**
- **2. Legitimacy is vital for both sides**
  - **Corrupt or excessively violent governments will always struggle, but so too will guerrillas who terrorize their own people**
- **3. Staying power**
  - **Firepower is no substitute for patience and boots on the ground. The people you need on your side must believe that you are in it for the long haul.**
- **4. Most counter-insurgency campaigns abroad are lost at home.**
  - **Liberal democracies have short attention spans, low tolerance for casualties and other calls on their cash. Unless voters believe that an intervention is necessary for their own security they will quickly withdraw support for it.**

- A History of Guerilla Warfare: How the Weak Vanquish the Strong, The Economist, Jan 19, 2013

Making the Invisible Visible - 2 Lessons of Guerilla Warfare

- Guerrilla warfare has been ubiquitous throughout history
- Insurgents have been increasingly successful since 1945, helped by the easy, rapid diffusion of information and powerful, portable weaponry, but still lose more often than they win
- Conventional armies have to adapt their weapons, tactics and mind-set in order to defeat insurgents and do so rapidly, before their own populations lose faith in the effort
- Establishing legitimacy in the local government and protecting its people from the predations of the insurgents are at least as important as killing or capturing insurgents but are also far harder tasks, requiring a comprehensive, whole-of-government effort

    - John Nagl, Chasing Ghosts, Wall Street Journal, Jan 21, 2013

Making the Invisible Visible - 3 Lessons of Guerilla Warfare

- Guerilla warfare is not new
- Guerilla warfare is the form of conflict universally favored by the weak, not an "Eastern" way of war
- Guerilla warfare has been both underestimated and overestimated
- Insurgencies have been getting more successful since 1945, but they still lose most of the time
- The most important recent development in guerilla warfare has been the rise of public opinion
- Few counter-insurgency campaigns have ever succeeded by inflicting mass terror - at least in foreign lands
- "Winning hearts and minds" is often successful as an anti-guerrilla strategy, but it isn't as touchy-feely as commonly supposed
- Most insurgencies are long-lasting; attempts to win a quick victory backfire
- Technology has been relatively unimportant in guerrilla war - but that may be changing

- Max Boot, The Guerilla Myth, Wall Street Journal, Jan. 18, 2013

William Lind - Fourth Generation Warfare (4GW)

- ## Introduction
  - ### Past is prologue - today we are facing war waged by entities other than states
    - #### Peace of Westphalia of 1648 gave states monopoly on war
  - ### Root of 4GW is a political, social and moral revolution - the decline of the state
    - #### Therefore has no purely military solution
- ## Understanding 4GW
  - ### Three classical levels of war - strategic, operational, tactical
  - ### 4GW adds three more - moral, mental, physical
    - William S. Lind, FMFM 1-A, On War #101

William Lind - Fourth Generation Warfare (4GW)

- **Fighting 4GW**
  - **De-escalation model vs. Hama model**
    - **You can use either model with some hope of success, but don't fall between the two**
    - **If you will be brutal, be fast. If you can't be fast, de-escalate**
  - **Less is more - use small + short physical presence**
  - **If you invade + occupy a state, preserve the state**
  - **Is a light infantry war**
  - **Most important supporting weapon is cash**
  - **Integrate your men with local population**
  - **Humint is everything**

- William S. Lind, FMFM 1-A, On War #101

Nine Paradoxes of Counterinsurgency

- **The more you protect your force, the less secure you are**
  - If military forces stay locked up in compounds, they lose touch with the people, appear to be running scared and cede the initiative to insurgents.

- **The more force used, the less effective it is**
  - Using substantial force increases the risk of collateral damage and mistakes, and increases the opportunity for insurgent propaganda.

- **The more successful counterinsurgency is, the less force that can be used and the more risk that must be accepted**
  - As the level of insurgent violence drops, the military must be used less, with stricter rules of engagement, and the police force used more.

  - FM 3-24/FMFM 3-24, Counterinsurgency

Nine Paradoxes of Counterinsurgency

- **Sometimes doing nothing is the best reaction**
    - **Often an insurgent carries out a terrorist act or guerrilla raid with the primary purpose of causing a reaction that can then be exploited.**
- **The best weapons for counterinsurgency do not shoot**
    - **Often dollars and ballots have more impact than bombs and bullets.**
- **The host nation's doing something tolerably is better than our doing it well**
    - **Long-term success requires the establishment of viable indigenous leaders and institutions that can carry on without significant American support.**

    - FM 3-24/FMFM 3-24, Counterinsurgency

Nine Paradoxes of Counterinsurgency

- **If a tactic works this week, it might not work next week; if it works in this province, it might not work in the next**
  - **Insurgents quickly adapt to successful counterinsurgency practices. The more effective a tactic is, the faster it becomes out of date.**
- **Tactical success guarantees nothing**
  - **Military actions by themselves cannot achieve success.**
- **Most of the important decisions are not made by generals**
  - **Successful counterinsurgency relies on the competence and judgment of Soldiers and Marines on all levels.**
  - **- FM 3-24/FMFM 3-24, Counterinsurgency**

Think Maslow!

- **"Marines need to learn when to fight with weapons and when to fight with information, humanitarian aid, economic advice, and a boost toward good governance for the local people."**

- **Six lines of operation**
  - **Governance = "for the people"**
  - **Information Operations = "nothing but the truth"**
  - **Combat Operations = "war of the stiletto"**
  - **Train and Employ = "breathing room"**
  - **Essential Services = "stop the bleeding"**
  - **Economic Development = "toward a better life"**

- USMC, Countering Irregular Threats: A Comprehensive Approach, 2006

Think Maslow!

- **Force development implications:**
  - **Better collaboration with the rest of the US government**
  - **Training Marines to be "both fighters and peace builders"**
  - **Train Marines in cultural intel, foreign languages, negotiation and dispute resolution**
  - **Long-term planning capacity for COIN**

- USMC, Countering Irregular Threats: A Comprehensive Approach, 2006

Global Guerillas

- **Have decentralized organization composed of small quasi-independent groups**
    - **Don't wish to overthrow states but wish to weaken states so they can prosper in lawless spaces and not have to assume responsibility for their actions**
- **Use "systems disruption" to inflict massive damage on economic + social systems of states at little cost to themselves**
    - **Systempunkt are weak points to attack in networks that support modern life - pipelines, electric grid**
    - **Leads to cascades of failure**
- **Gain strength from operating on "open source" basis**
    - **In open source warfare, the cathedral is weaker than the bazaar**
    - **The bazaar innovates more rapidly, is an ecosystem**
- **Turn globalization upon itself**
    - **Uses globalization's tools and systems to undermine it**
- **The antidote to global guerillas is dynamic decentralized resilience**
    - **Balances globalization's dependence on centralized networks**
    - **John Robb, Brave New War**

Brave New War

- **Background**
  - **Iraq is to Long War what Spanish Civil War was to World War II - a preview of coming disruptions**
  - **"This is the first time in modern history that a nonstate group has the ability to fight a global war and win"**
  - **West's thoroughly networked existence has multiple choke points + soft underbellies in its infrastructure**
  - **Goal is not to defeat our militaries or topple our governments but to bankrupt both, hollowing out the West's institutions to the point where bin Laden's feudal order vision of future carries the day**

Brave New War

- **West**
  - **The few, the proud, the incredibly expensive**
  - **Develops new military doctrine every decade**
  - **Wrap our effort in great secrecy**
- **Global Guerillas**
  - **Cheap and plentiful**
  - **Change battlefield tactics daily**
  - **Wage open-source warfare, swap tradecraft over Web**

- Thomas P.M. Barnett, John Robb: Keeping Up With The Terrorists, Esquire, Dec. 2007

The Global Guerilla

"The threshold necessary for small groups to conduct global warfare has finally been breached, and we are only starting to feel its effects. Over time, in as little as perhaps twenty years and as the leverage of technology increases, this threshold will finally reach its culmination - with the ability of one man to declare war on the world and win."   - John Robb, Brave New War, 2006

"Edward Snowden (love him or hate him) proved it is possible to wage a one-man information war against the biggest, most powerful national security establishment in the world.   The US government. A country that spends more than all other countries in the world combined on national defense.

He was able to:

- steal the crown jewels of the US security system by himself,

- initiate an information war against the entire US national security bureaucracy while eluding capture, and

- initiate economic disruptions that have done billions of dollars in damage to US corporations (from Boeing to RSA).

However, his successes don't end there, he's winning the war.

This support from the editors of the New York Times indicates that he's already achieved most of what it takes to achieve a "moral victory" against the US government."

- John Robb, When Only 1% Are Employed, Home Free America, Feb. 4, 2014

Why Do People Become Radicalized and Join a Terror Network?

- **A perceived war on one's in-group**

- **Moral outrage at some salient injustice against one's in-group**

- **Disillusionment with nonviolent tactics**

- **Polarization of debate**

- **…overall a sense of being embattled and thus becoming a soldier to defend their communities**

    - Marc Sageman, The Turn to Political Violence

- David Ignatius, The Internet Isn't To Blame For Radicalization, Washington Post, Jan. 15, 2015

Focused Case Study - Roman Empire

"The Romans were weighed down in the bogs by the might of their armor.

On the other hand, the barbarians were inured to encounters in the bogs."

- Edward Gibbon

Case Study Summary - Legend of Robin Hood

- **Goal**
  - **Sheriff - Enrich Prince John by turning nobles into outlaws + stealing their lands**
  - **Robin - Restore justice by returning King Richard the Lionhearted to throne**
- **Center of Gravity (Strategy)**
  - **Sheriff - Nobles**
  - **Robin - Help poor + disenfranchised**
- **Equipment**
  - **Longbow**
- **Training / Leadership / Morale**
  - **Sheriff - Poor**
  - **Robin - Great**

Case Study Summary - Legend of Robin Hood

- **Tactics**
  - **Sheriff - Crush insurgents**
  - **Robin - Steal from rich and give to poor, live off land**
- **Intangibles**
  - **Legend probably true in some form**
- **Mistakes**
- **Outcome**
  - **Justice prevails - Prince John + Sheriff imprisoned, King Richard restored to throne**
  - **(In real life after the death of King Richard, Prince John becomes King John, his Lords ultimately rebel over his rule and force him to sign Magna Carta in 1215 which leads to Declaration of Independence / US Constitution)**

Case Study Summary - Lexington + Concord

- **Goal**
  - **British - Confiscate American arms at Concord**
  - **Americans - Observe British, stop British?**
- **Center of Gravity (Strategy)**
  - **British - Secretly march from Boston to Concord with main force + relief force**
  - **Americans - Early warning system rapidly mobilizes militia**
- **Equipment**
  - **Muskets**
- **Training**
  - **British - Best army in the world, but while the officers were experienced the troops were green**
  - **Americans - Many had fought in French + Indian War - difference between militia and minutemen were minutemen were better trained and ready to go on a moments notice**

Case Study Summary - Lexington + Concord

- ## Leadership ~ Morale
  - **British - No unity of command (Smith + Pitcairn (Royal Marine) in main force, Percy in relief force) - led to having no control over troops at Lexington Green when they attacked, no control over troops at North Bridge in Concord where they broke after first volley, no control over troops after ambush at Fisher's Ridge where they broke and ran to Lexington**
    - **Officers buy their commissions**
  - **Americans - No unity of command amongst various militia units**
    - **Militia elects officers**
- ## Tactics (on Battle Road)
  - **British column marched on road while flankers pushed Americans into the woods to increase range between them and the column - fought in formation**
  - **American fought under cover, sniping, ambushing, using hit and run - they knew the terrain and the best places for ambush**

Case Study Summary - Lexington + Concord

- **Intangibles ~ Mistakes**
  - **Captain Parker was a veteran of French and Indian War - Why did he line up his men in formation on Lexington Green? Did he (or Sam Adams) want them to be a good target?**
- **Outcome**
  - **Lexington was a tragedy**
  - **Concord was treason as it was first elective attack against British**
    - **"Shot heard round the world"**
  - **Captain Preston, fought at North Bridge, in an interview in 1842 asking why they fought replied, "We had always governed ourselves and we always meant to."**

Case Study Summary - American Revolutionary War as Insurgency

- **Goal**
  - **Independence**

- **Center of Gravity (Strategy)**
  - **Avoid being overrun or demoralized ~ Keep Continental Army intact + safe from annihilation in field and from hunger + disease off of it**

- **Equipment ~ Training ~ Leadership ~ Morale**
  - **Washington's stature+gravitas held country together post July 4**

- **Tactics ~ Intangibles**
  - **US was newborn country that wasn't sure if it really was a country and if it would remain one for long**
  - **Colonists didn't have to win independence from Britain so much as they had to fend off Britain's efforts to snatch it back**
  - **Royal authority collapsed quickly because it barely existed to begin with, not because of overwhelming support for patriot cause**

- **Mistakes ~ Outcome**
  - **Retreats from Boston to New York to Philadelphia ~ Fights back at Trenton and Princeton**

  - Joshua Micah Marshall, National Treasure, New Yorker, May 23, 2005

Case Study Summary - American Revolutionary War as an Insurgency

- **Goal**
  - **Americans - Independence**
  - **British - Conquer but make peace**
- **Center of Gravity (Strategy)**
  - **Washington**
    - **Defensive / avoid general action**
    - **Created professional army + used it in guerilla sense for attacking lines of communication**
  - **British**
    - **Change from police action to military action once Continental Field Army formed under Washington**
    - **1776 - 1777 - Focus on north, want to cut off New England + defeat Washington in decisive battle by moving out of Boston to New York**
    - **1778 - Change focus from putting down rebellion to global struggle with France + Spain so change focus to South and sea to protect colonies in West Indies - But as they begin to win in the South a patriot insurgency forms there**
  - **- Gordon S. Wood, The American Revolution, pp. 74-88**

Case Study Summary - American Revolutionary War as an Insurgency

- **Equipment**
  - **Britain - Most powerful nation ~ Population 11 million ~ Royal Navy largest in world with 1/2 deployed to America ~ British Army well trained with 50,000 men + 30,000 Hessians**
  - **America - Population 2 million white + 0.5 million black ~ Continental Army < 5,000 men + state militias poorly trained**
- **Training**
  - **Baron von Steuben turns Continental Army into disciplined fighting force**
- **Leadership**
  - **Washington inexperienced with no knowledge of siege + logistics ~ His officers not traditional gentlemen**
- **Morale**
  - **Washington's character, political talent, judgment mattered most**
  - **- Gordon S. Wood, The American Revolution, pp. 74-88**

Case Study Summary - American Revolutionary War as an Insurgency

- ## Tactics
  - **British disadvantages - 3,000 mile lines of communication to Britain ~ America too big + terrain too wild making maneuver difficult ~ Fragmented American authority meant there was no center of gravity ~ Couldn't catch Washington's Army to defeat it in battle**
- ## Intangibles
  - **Independence meant more to Americans than reconquest meant to British**
- ## Mistakes
  - **Assumption Americans would not fight led to large losses at Lexington / Concord + Bunker Hill**
  - **Never understood that they were up against a revolutionary struggle with widespread support of people**
- ## Outcome
  - **1781 - British temporarily lose control of sea -> Cornwallis' escape from sea blocked at Yorktown, Cornwallis surrenders, war is over**
  - **- Gordon S. Wood, The American Revolution, pp. 74-88**

"It may be doubted whether so small a number of men ever employed so short a space of time with greater and more lasting effects upon the history of the world."

- British historian Sir George Trevelyan writing of the astounding turnaround in American fortunes after Trenton

Post Modern View of US Civil War

- **First modern war between Core and Gap**
  - **Core - North - Industrializing and connecting itself to modern world**
  - **Gap - South - 1800's version of Persian Gulf oil - rich autocracies, connected in same slim fashion to world outside by cotton and marred by unjust social order**

                                        - Thomas P.M. Barnett

Focused Case Study - The First Reconstruction

- **US Civil War was war of transformation where victors hoped to reshape political culture of vanquished**
  - **Land reform: 40 acres and a Mule**
- **But Reconstruction posed severe tests**
  - **Occupying army harassed by insurgency that fused die-hard remnants of old plantation power struggle with irregular guerillas**
  - **Union unprepared: Occupying army too small, allies corrupt and disorganized ~ Cost 1,100 lives**

  - David Ignatius, Lessons for Iraq from Gettysburg, Washington Post, May 4, 2005

Focused Case Study - The First Reconstruction

- **By 1870 - Optimism ~ Foreign direct investment in South**
  - **Poison that destroyed reconstruction was racism**
    - **White elite convinced poor whites that blacks were enemies**
    - **White elite believed if they held tough, North would abandon campaign to create new multiracial South**
- **By 1877 - North gave up**
  - **Depression of 1873 pulled Northern investors out of South, went West instead**
  - **Army of occupation withdrawn**
  - **White South lost war but won peace**
  - **South slips into 80 years of racism, isolation, economic backwardness ~ social + economic disaster**

- David Ignatius, Lessons for Iraq From Gettysburg, Washington Post, May 4, 2005

Focused Case Study - The First Reconstruction

- ## Lessons for Iraq
  - ### What you do immediately after end of hostilities is crucial
    - #### Mistakes may be impossible to undo
  - ### Don't attempt wholesale transformation of society unless you have troops or political will to impose it
  - ### Don't let racial or religious hatred destroy democratic political institutions

  - David Ignatius, Lessons for Iraq From Gettysburg, Washington Post, May 4, 2005

Case Study Summary - American Indian Wars 1860 - 1890

- **Goal**
  - **Domination of continent to protect westward expansion**
- **Center of Gravity (Strategy)**
  - **Tribal life centered around buffalo - if Indian to be free they needed unlimited access to Plains + wildlife - so destroy buffalo (Sherman)**
- **Equipment**
  - **US - good ~ Indian - poor**
- **Training**
  - **US - poor ~ Indian - good**
- **Leadership ~ Morale**
  - **US - Civil War veterans ~ Indians - Chiefs**
- **Tactics**
  - **US - Peacekeeping to pacification**
    - **First prevent white encroachment on reservation land / protect whites from harm**
    - **Evolved to put Indians on reservations + keep them there**
  - **Indians - Defend their land**
  - **- Philip Katcher+GA Embleton, The American Indian Wars 1860-1890, p. 3-4**
  - **- Martin Pegler, US Cavalryman 1865-1890, p. 4-6**

Case Study Summary - American Indian Wars 1860 - 1890

- **Intangibles ~ Mistakes**
  - **Clash of civilizations unable to comprehend or accommodate each other**
    - **Western Europe civilization based on individual profit through use of personal property, was organized + structured, adaptive to new situations, technologically oriented, way of war was total war: constant pressure until victory**
    - **Indian civilization fragmented into small tribes incapable of uniting, nomadic and therefore no concept of personally owned land, way of war was constant skirmishing between tribes for sport or revenge, some fought for whites**

      "One does not sell the earth upon which people walk." - Crazy Horse

- **Outcome**
  - **Indians never had a chance**
  - **To understand US Army today, study Indian Wars - Robert Kaplan, Fort Leavenworth and the Eclipse of Nationhood, Atlantic, Sept 1996**
  - **- Philip Katcher+GA Embleton, The American Indian Wars 1860-1890, p. 3-4**
  - **- Martin Pegler, US Cavalryman 1865-1890, p. 4-6**

Focused Case Study - Malayan Emergency 1948 - 1960

- **Background - War of communist revolution**
- **Five Basic Principles of Counter-Insurgency**
  - **Have a clear political aim (objective)**
  - **Function in accordance with law (legitimacy, restraint)**
    - **Strict curfews, death penalty for carrying arms, life in prison for supporting terrorists, detention for suspect terrorist supporters**
  - **Have an overall plan to include political, social, economic, administrative, police, and other measures (unity of effort)**
    - **Subordinated military to civilians, led to unity of effort -- military assisted police and supported programs of civil government -- civilian head was a retired general**
  - **Give priority to defeating the political subversion, not the guerillas (objective)**
  - **Secure your base area first (security)**
    - **- US Marine Corps, Small Wars 21st Century, pp. 38-41, 57**

"The shooting side of the business is only 25 percent of the trouble and the other 75% lies in getting the people of the country behind us."

- Sir Gerald Templer, British High Commissioner in Malaysia during Malaysian Emergency

"The answer lies not in pouring more troops into the jungle but in the hearts and minds of the people."

- Sir Gerald Templer, British High Commissioner in Malaysia during Malaysian Emergency

Focused Case Study - Battle of Algiers

- **The mix - modern army, ancient enemy**
  - **Fundamental Islam**
  - **Insurgency seeking freedom**
    - **Begins with police assassinations, moves onto bombings**
  - **Colonial power**
    - **First response is increased policing, moves to military intervention with torture to identify and break terror cells**
    - **Plan initially succeeds tactically but ultimately fails strategically**
      - **Won the Battle of Algiers, lost the war for Algeria**
- **The issue**
  - **How to win battle against terrorism + lose war of ideas**
    - **Problematic but alluring efficacy of brutal and repressive means in fighting clandestine terrorists - specifically the advantages and costs of resorting to torture and intimidation in seeking vital human intelligence about enemy plans**
    - **Michael Kaufman, What Does the Pentagon See in the 'Battle of Algiers', New York Times, September 7, 2003**

Focused Case Study -
First Battle of Fallujah

- **Logistics is everything**
- **Planning is everything**
- **Have a sense of history - Marines at Hue**
- **Training is everything - Marines are not like the rest of us**
- **Fighting non state actors / classic insurgency on their terms (there are no rules of war)**
- **The only thing a tribe understands is violence**
- **Defeated by politics**
    - **Robert Kaplan, Five Days in Fallujah, The Atlantic Monthly, July / Aug 2004**

Focused Case Study - Operation Iraqi Freedom

- **Key insights**
  - **Plan with the end in mind**
    - **Focus on military aspects + desired political end state**
  - **Comprehensive + integrated approach**
    - **Military + civilian**
  - **Nuance counts, heavy handed approaches should be avoided**
  - **Culture matters; in fact, it is crucial**
  - **Create gaps, avoid surfaces (surfaces = insurgents)**
    - **Widen gap between insurgents + population**
  - **Communicate, communicate, communicate**
    - **Information operations**
  - **Policing over warfighting**
    - **Cop on the beat vs. cop in the patrol car**
    - **- Frank G. Hoffman, Changing Tires on the Fly: The Marines and Post conflict Stability Ops, Foreign Policy Research Institute, Sept. 10, 2006**

Focused Case Study - Operation Iraqi Freedom

- **Policy recommendations**
  - **Realistic objective**
  - **Patience**
  - **Winning the support of the people**
  - **Civilian primacy**
  - **Minimum force**
  - **Intelligence-led operations**
  - **Organizational culture**
    - **Andrew Garfield, Succeeding in Phase IV: British Perspectives on the US Effort to Stabilize and Reconstruct Iraq, Foreign Policy Research Institute, Sept. 8, 2006**

Case Study Summary - Iraq 200x

- **Goal**
  - **Iraqis - drive Americans out of Iraq**
- **Center of Gravity (Strategy)**
  - **Iraqis - use IED as artillery ~ tactical weapon (IED) has strategic consequences because its use against Americans attacks American political will to remain in Iraq and its use against Iraqis prevents development of stable safe society**
  - **Americans - failure to appreciate that bomb maker is the center of gravity, as British and Israelis have in past**
- **Equipment**
  - **Roadside bomb in its many variants is signature weapon of war in Iraq ~ simple / cheap / deadly**
  - **- Rick Atkinson, The Single Most Effective Weapon Against Our Deployed Forces, Washington Post, Sept 30, 2007**

Case Study Summary - Iraq 200x

- **Training ~ Leadership ~ Morale**
  - **Story of measure - countermeasure - counter-countermeasure**

  "Insurgents have shown a cycle of adaption that is short relative to the ability of US forces to develop and field IED countermeasures" - National Academy of Sciences

  "The Flintstones are adapting faster than the Jetsons" - USMC officer

- **Tactics**
  - **Iraqis have detonated 81,000 IEDs from 2003-mid 2007 causing 66% of US combat deaths and higher % of wounded**
    - **Use 1 million tons of unsecured explosives**
    - **Radio, infrared, pressure detonators**
  - **Americans - IED = boom**
    - **Left of boom - disrupt insurgent cells before bombs built + planted**
    - **Right of boom - mitigate effects of bomb blasts with armor + better trauma care**
    - **(right at) Boom - jammers to block detonation**

  - Rick Atkinson, The Single Most Effective Weapon Against Our Deployed Forces, Washington Post, Sept 30, 2007

Case Study Summary - Iraq 200x

- **Intangibles**
  - **When will IEDs come to the US?**
  - **Extensive use of jammers by Americans leads to pollution of electromagnetic spectrum**
- **Mistakes**
  - **Americans first thought roadside bomb was passing fad, then they thought science will solve the problem**
  - **Americans failed to appreciate the lack of electronic warfare expertise in Army + Marines**
  - **Interservice rivalry finally resolved by making Navy lead agent for electronic warfare on the ground with immediate payoffs**
- **Outcome**
  - **"Single most effective weapon against our deployed forces" - Pentagon**
  - **IED is metaphor for miscalculation + improvisation that has characterized the war**
  - **- Rick Atkinson, The Single Most Effective Weapon Against Our Deployed Forces, Washington Post, Sept 30, 2007**

Case Study Summary - Madrid Bombings 2004

- **Goal**
  - **Get Spanish troops out of Iraq**
- **Center of Gravity (Strategy)**
  - **Political will of Spanish government**
- **Equipment**
  - **Dynamite**
- **Training ~ Leadership ~ Morale ~ Tactics**
  - **Use Internet to link up militant ideologue with ideas with petty criminals with muscle**
  - **- Andrea Elliott, Where Boys Grow Up to Be Jihadis, New York Times Magazine, Nov 24, 2007**

Case Study Summary - Madrid Bombings 2004

- **Intangibles**

  "In the years since Sept. 11, the question of what makes a terrorist has become ever more urgent...

  Increasingly, terrorism analysts have focused on the importance of social milieu. Some stress that terrorists are not simply loners, overcome by a militant cause. They are more likely to radicalize together with others who share the same passions and afflictions and daily routines...the turn to violence is seldom made alone. Terrorists don't simply die for a cause...they die for each other...

  Terrorism is really a collective decision, not an individual one...It's about kinship and friendship."

- **Mistakes ~ Outcome**

  - **Spanish president defeated ~ Spanish troops withdrawn from Iraq**
  - **- Andrea Elliott, Where Boys Grow Up to Be Jihadis, New York Times Magazine, Nov 24, 2007**

Case Study Summary - War on Drugs

- **Goal**
  - **Us - Defeat drug lords ~ Them - Make money**
- **Center of Gravity (Strategy)**
  - **Us - Producers + dealers ~ Them - Demand / addiction**
- **Equipment**
  - **Us - Hand me down ~ Them - Best money can buy**
- **Training / Leadership**
  - **Us - Amateurish ~ Them - Best and brightest**
    - **"You guys remind me of Japanese soldiers on deserted islands who still think World War Two is still going on. The fact is that your government surrendered this war a long f---ing time ago."**
- **Morale**
  - **Us - Low ~ Them - Triumphant**
  - **- Alastair Reid, Traffik and Steven Soderbergh, Traffic**

Case Study Summary - War on Drugs

- **Tactics**
  - **Us - Disorganized + Decentralized (Federal / State / Local)**
  - **Them - Organized + Centralized**
- **Intangibles**
  - **Us - Can't secure own borders ~ Them - Money corrupts anyone**
    "In Mexico, law enforcement is an entrepreneurial activity."
- **Mistakes**
  - **Us - Ignores demand - Fails to focus on education + treatment**
- **Outcome**
  - **Sense of despair in everyone ~ Everyone is a casualty**
    "If there is a war on drugs, then many of our family members are the enemy. And I don't know how you wage war on your own family."
  - **Hypocrisy of rich countries consuming illegal substances produced by poor countries and then punishing them for it**

  "If you legalize it you will end the crime" - Charles Lucas, M.D.

  - Alastair Reid, Traffik and Steven Soderbergh, Traffic

Focused Case Study: War on Drugs

- **War on Drugs is America's longest war, costing $1 trillion over 40 years**

- **Has turned America into most highly incarcerated society in history**

- **2011 global commission on drug policy declared global war on drugs has failed + 67% of Americans agree**

- **Real addicts in drug war are law enforcement agencies that live off of it**

"If a war is ill conceived at its core, it can't be won." - Doug Fine

- Bill Maher, Reefer Madness, New York Times, Aug. 3, 2012

Focused Case Study - Afghanistan The Great Game

"The consequence of crossing the Indus once to settle a government in Afghanistan will be a perennial march into that country."

- Arthur Wellesley, 1st Duke of Wellington, 1838

Focused Case Study - Afghanistan The Great Game

"We have a beautiful game on our hands, if we have the means and inclination to play it properly."

- William Macnaughton, Head of Foreign and Political Department of Indian Government, 1838, discussing British invasion of Afghanistan

Focused Case Study - Afghanistan The Great Game

"We have men and we have rocks in plenty, but we have nothing else."

- Dost Mohammed Khan, Amir of Afghanistan, 1838

Focused Case Study - Afghanistan The Great Game

"I feel sure I am right when I say that the less the Afghans see of us, the less they will dislike us."

- Major General Frederick Roberts, 1880

Focused Case Study - Afghanistan The Great Game

"In Kabul in 2001 I was sent with a unit to meet with an Afghan government minister. We had to explain that we weren't Russian, we were British. As soon as we did he rounded on us and shouted: "British? You burned down the covered market!" My first thought was s***, what have the Paras done now? I apologized and we got on with the meeting. Back at base I asked who had burned down the market. Blank faces all around, until someone at the back said he thought we had burned down the covered market. In 1842."

- Warrant officer, 1 Mechanized Brigade

Case Study Summary - Afghanistan in 19th Century

- **Background**
  - Great Game - strategic rivalry between British Empire + Tsarist Russian Empire for supremacy in Central Asia with Afghanistan at center
  - British fear "Jewel in the Crown" India vulnerable to Russian invasion
- **Goal**
  - Britain - Keep Russians out of Afghanistan
  - Afghans - Keep British out of Afghanistan
- **Center of Gravity (Strategy)**
  - Britain - Control Afghan sovereignty
  - Afghans - Maintain independent Afghan sovereignty

Case Study Summary - Afghanistan in 19th Century

- **Equipment**
  - **Victorians vs. The Flintstones**
- **Training**
  - **Britain - Excellent**
  - **Afghans - Non-existent**
- **Leadership**
  - **Britain - Centralized + good**
  - **Afghans - Decentralized / tribal + good**
- **Morale**
  - **Britain - High**
  - **Afghans - High**

Case Study Summary - Afghanistan in 19th Century

- **Tactics**
  - **Britain - Control the valleys**
  - **Afghans - Ambush the valleys**
- **Intangibles**
  - **Britain -**
  - **Afghans -**
- **Mistakes**
  - **Britain -**
  - **Afghans -**

Case Study Summary - Afghanistan in 19th Century

- **Outcome**
  - **First Anglo-Afghan War - 1839-1842**
    - British invade Afghanistan to overthrow current King (Dost Mohammad) suspected of being pro-Russian and restore previous pro-British King of Afghanistan (Shuja Shah Durrani) to the throne and achieve rapid success in 1839 but then find they must remain as his rule depends on British arms to suppress rebellion and British funds to buy support of tribal chiefs
    - 1840 - Dost Mohammad exiled to India
    - Late 1841 - Dost Mohammad's son leading active insurgency
    - January 1842 - British abandon Kabul, begin safe passage to India but are ambushed along the way, only 1 of 16,000 survives to reach Jalalabad
    - Summer 1842 - British inflict reprisals on Afghanistan, then withdraw ~ Dost Mohammad restored to throne

Case Study Summary - Afghanistan in 19th Century

- **Outcome**
  - **Second Anglo-Afghan War - 1878-1880**
    - **King of Afghanistan was Sher Ali Khan, another son of King Dost Mohammad - cannot stop Russian diplomatic mission to Kabul but does stop British diplomatic mission to Kabul, thus British invade**
    - **Ultimately Afghans maintain internal sovereignty but give control of foreign relations to British in return for a yearly subsidy**
  - **Third Anglo-Afghan War - May 6 - August 8, 1919**
    - **Newly self-appointed King of Afghanistan invades India to provide distraction from domestic problems**
    - **Tactical victory for British who defeat invasion**
    - **Strategic victory for both - Durand Line reaffirmed as political boundary between Afghanistan and British India, while Afghans resume control of their foreign relations**

An Even Greater Game: Did the US Provoke The Soviet Union to Invade Afghanistan?

- **Did the US fan the fires of Islamic extremism in Afghanistan to increase Soviet fear of spread of such extremism to Soviet Union, thus forcing Soviets into defensive pre-emptive invasion of Afghanistan in 1979 to crush the extremism?**

An Even Greater Game: Did the US Provoke The Soviet Union to Invade Afghanistan?

"Question: The former director of the CIA, Robert Gates, stated in his memoirs [From the Shadows], that American intelligence services began to aid the Mujahadeen in Afghanistan six months before the Soviet intervention. In this period you were the national security adviser to President Carter. You therefore played a role in this affair. Is that correct?

Brzezinski: Yes. According to the official version of history, CIA aid to the Mujahadeen began during 1980, that is to say, after the Soviet army invaded Afghanistan, 24 Dec 1979. But the reality, closely guarded until now, is completely otherwise: Indeed, it was July 3, 1979 that President Carter signed the first directive for secret aid to the opponents of the pro-Soviet regime in Kabul. And that very day, I wrote a note to the president in which I explained to him that in my opinion this aid was going to induce a Soviet military intervention.

Question: Despite this risk, you were an advocate of this covert action. But perhaps you yourself desired this Soviet entry into war and looked to provoke it?

Brzezinski: It isn't quite that. We didn't push the Russians to intervene, but we knowingly increased the probability that they would.

Question: When the Soviets justified their intervention by asserting that they intended to fight against secret involvement of the United States in Afghanistan, people didn't believe them. However, there was a basis of truth. You don't regret anything today?

Brzezinski: Regret what? That secret operation was an excellent idea. It had the effect of drawing the Russians into the Afghan trap and you want me to regret it? The day that the Soviets officially crossed the border, I wrote to President Carter, in substance: We now have the opportunity of giving to the USSR its Vietnam war. Indeed, for almost 10 years, Moscow had to carry on a war unsupportable by the government, a conflict that brought about the demoralization and finally the breakup of the Soviet empire.

Question: And neither do you regret having supported the Islamic fundamentalists, having given arms and advice to future terrorists?

Brzezinski: What is most important to the history of the world? The Taliban or the collapse of the Soviet empire? Some stirred-up Moslems or the liberation of Central Europe and the end of the cold war?"

Case Study Summary - Afghanistan 2001- Present

- **Goal**
  - **US - Peaceful Afghanistan that is not a terrorist haven through a stable, strong, democratic central Afghan government that works closely with local tribal authorities**
  - **Taliban - Reestablish a theocracy**

- **Center of Gravity (Strategy)**
  - **US - Counterterrorism to defeat Al Qaeda + disperse Taliban, then Counterinsurgency**
  - **Taliban - Wait the US out**

- **Equipment - Jetsons vs. Flintstones**
  - **US - Latest and greatest**
  - **Taliban - AK-47, RPG, IED**

- CJ Chivers, Putting Afghan Plan Into Action Proves Difficult, New York Times, March 8, 2011
- Dexter Filkins, The Great Afghan Bank Heist, New Yorker, Feb 14, 2011
- Dexter Filkins, Endgame, New Yorker, July 4, 2011

Case Study Summary - Afghanistan 2001- Present

- **Training**
  - **US - Excellent**
  - **Afghan - National Army + Police - Poor**
  - **Taliban - Poor**
- **Leadership**
  - **US - Excellent**
  - **Afghan - Poor + corrupt**
  - **Taliban - Battle between Pashtuns + Arabs who destroy Pashtun tribal system and radicalize Pashtun youth**
- **Morale**
  - **US - High**
  - **Afghan - Low**
  - **Taliban - High**

- CJ Chivers, Putting Afghan Plan Into Action Proves Difficult, New York Times, March 8, 2011
- Dexter Filkins, The Great Afghan Bank Heist, New Yorker, Feb 14, 2011
- Dexter Filkins, Endgame, New Yorker, July 4, 2011

Case Study Summary - Afghanistan 2001- Present

- **Tactics**
  - **One of main sources of Taliban income is bribes paid by private security contractors to them to not fire on NATO logistic convoys being escorted by contractors**
    - **Costs $140,000 / year to keep a NATO soldier in field for a year**
    - **If 10% of that is paid in bribes to Taliban it keeps 5 Taliban soldiers in the field for a year**
- **Intangibles**
  - **Previous failures to pacify Afghanistan - Graveyard of Empires**
    - **Alexander the Great**
    - **British in First Anglo Afghan War**
    - **Soviet Union in 1980's**

- CJ Chivers, Putting Afghan Plan Into Action Proves Difficult, New York Times, March 8, 2011
- Dexter Filkins, The Great Afghan Bank Heist, New Yorker, Feb 14, 2011
- Dexter Filkins, Endgame, New Yorker, July 4, 2011

Case Study Summary - Afghanistan 2001- Present

- **Mistakes**
  - **Failure of US to address Taliban safe havens in Pakistan**
  - **Failure of US to address corruption of Afghan government which fuels Taliban**
  - **Failure of US to train, equip, and install a sense of nationalism in the Afghan Army + Police**
- **Outcome**
  - **?**

- CJ Chivers, Putting Afghan Plan Into Action Proves Difficult, New York Times, March 8, 2011
- Dexter Filkins, The Great Afghan Bank Heist, New Yorker, Feb 14, 2011
- Dexter Filkins, Endgame, New Yorker, July 4, 2011

Crazy Like a Fox

"Look, Admiral Mullen said in one of his very important statements to the US Senate, that the Haqqani network (a leading insurgent group allied with the Taliban) is the veritable arm of the ISI (Pakistan's Inter-Services Intelligence agency). Those are his words…So if they know that the terrorist bases - the Taliban bases, the Haqqani bases - are in Pakistan, how could they be killing people and bombing in Afghanistan? This is a betrayal.

…

It's the reason for which America came to Afghanistan: the fight against terror. They didn't fight terrorism where it was, where it still is. They continued damaging Afghanistan and its people."

- Hamid Karzai, President of Afghanistan

- William Dalrymple, How is Hamid Karzai Still Standing? New York Times Magazine, Nov. 24, 2013

Who is the Real Enemy?
Why We Fail

- **The US knew there was a swamp, in the form of the Haqqania madrasa, in the North-West Frontier of Pakistan before 9/11, which with militant Islam at its core served as a jihad factory for the Taliban**

  - **"The secret (of the Taliban) is embodied in the two 11-year-olds cocking their fingers at me, and in the taunts of the students in the mosque who raised their hands for Osama bin Laden, and in the person of the Mullah Haji Muhammad, my 17-year-old minder in Kandahar who has no interest in any book but the Koran, and in the hundreds of thousands of young men like him at madrasas across Pakistan and Afghanistan. These are poor and impressionable boys kept entirely ignorant of the world and, for that matter, largely ignorant of all but one interpretation of Islam. They are the perfect jihad machines."**

    - Jeffrey Goldberg, Inside Jihad U: The Education of a Holy Warrior, New York Times Magazine, June 25, 2000

- **After 9/11 the U.S. said it would go after terrorists by moving "to drain the swamp they live in."**

  "They're benefiting from the support of governments and from the support of nongovernmental organizations that are either actively supporting them with money, intelligence and weapons, or allowing them to function on their territory and tolerating, if not encouraging, their activities. In either case, it has to stop."

    - Donald Rumsfeld, US Secretary of Defense, Sept. 18, 2001

Who is the Real Enemy?
Why We Fail

- In 2014 we revisit the swamp, and it is still there and stronger than ever. Why?
    - Madrasas in Pakistan continue to serve as jihad factories under the guidance of the ISI, the Pakistani intelligence service
    - Pakistani government maintains the Taliban to let them dominate Afghanistan while making a show of cooperation with US
    - The ISI hid Bin Laden in Abbottabad with knowledge of Pakistani government
    - US never fully understood or confronted Pakistan about all of this, leading to Afghanistan President Karzai's disillusionment with US

    "When I remember the beleaguered state of Afghanistan in 2001, I marvel at the changes the American intervention has fostered: the rebuilding, the modernity, the bright graduates in every office. Yet after 13 years, more than a trillion dollars spent, 120,000 foreign troops deployed at the height of the war and tens of thousands of lives lost, Afghanistan's predicament has not changed: It remains a weak state, prey to the ambitions of its neighbors and extremist Islamists. This is perhaps an unpopular opinion, but to pull out now is, undeniably, to leave with the job only half-done. Meanwhile, the real enemy remains at large"

    - Carlotta Gall, What Pakistan Knew About Bin Laden, New York Times Magazine, March 23, 2014

Why We Fail

"While attacks on the far enemy are important both as a deterrent and as a source of jihadist inspiration, they are not al-Qaeda's main purpose. Its overriding aim remains, as it has been since bin Laden saw the retreat of the Soviet Union, the creation of a new caliphate across the Islamic world based on unswerving adherence to sharia law. That requires the corrupting influence of the "Zionist-Crusader alliance" in the region to be extirpated and all apostate Muslim governments removed."

   - The State of al-Qaeda: The Unquenchable Fire, The Economist, Sept 28, 2013

"The most dismaying aspect of al-Qaeda's revival is the extent to which its pernicious ideology, now aided by the failures of the Arab spring, continues to spread through madrassas and mosques and jihadist websites and television channels. Money still flows from rich Gulf Arabs, supposedly the West's friends, to finance these activities and worse. More pressure should be brought to bear on their governments to stop this. For all the West's supposedly huge soft power, it has ben feeble in its efforts to win over moderate Muslims in the most important battle of all, that of ideas."

   - Al-Qaeda Returns: The New Face of Terror, The Economist, Sept. 28, 2013

With Friends Like These, Who Needs Enemies?

- **Western ignorance of Afghan culture, not Taliban infiltration, drives deadly attacks by Afghan soldiers on coalition forces. To decrease such green-on-blue violence, follow these rules:**

  "Etiquette Violations Best Avoided by [coalition forces]

  Taboo conversation topics include:

  - **Anything related to Islam**
  - **Mention of any other religion and/or spirituality**
  - **Debating the war**
  - **Making derogatory comments about the Taliban**
  - **Advocating women's rights and equality**
  - **Directing any criticism towards Afghans**
  - **Mentioning homosexuality and homosexual conduct"**
  - From "Insider Threats - Afghanistan: Observations, Insights, and Lessons," a draft handbook prepared for U.S. and coalition forces serving in Afghanistan"

- Dion Nissenbaum, Draft Army Handbook Wades Into Divisive Afghan Issue, Dec. 11, 2012

With Friends Like These, Who Needs Enemies?

"One of the colonels that we both knew had been accused of raping a chai boy, badly. They all have chai boys, it's not some perverted thing, it's just what they do. Women are for juma. The only time you interact with your wife is on Friday, the rest of the time it's chai boys. He had been raping this chai boy, which is normal, but he had hurt him really bad. That caused the medical people to get involved and other forces. So he's there in front of the judge, who is an imam. It's religion mixed with law, the whole code of law would fit in a pamphlet and then there's the Koran there on top of it. Anyway, his defense was, "Honestly, who hasn't raped a chai boy? Ha ha ha." And the judge goes, "You're right. Case dismissed.""

- Maj. Charles Wagenblast, a military intelligence reservist, brought home this story from Afghanistan about an Afghan colonel

- Thomas Ricks, Best Defense, Apr. 11, 2013

With Friends Likes These, Who Needs Enemies?

- **Can you be allies with someone who does not share your core beliefs?**

- **If you don't share a culture with someone, can you be allies?**

- **Is a successful military alliance built upon shared cultural values?**

Case Study Summary - War on Terror / Long War

- **Goal**
  - **Al-Qaeda - Overthrow poorly governed, dictatorial, corrupt Muslim states to create new medieval-like Caliphate and thus control majority of world's most valuable resource (oil) and thus dominate future of man, demote US as preeminent world power, eliminate West's influence on Arab countries**
  - **West - Avoid this, eliminate Al-Qaeda**
- **Center of Gravity (Strategy)**
  - **Al-Qaeda + West - Influence Muslim street to overcome misgovernance + sense of humiliation in Arab world**

Case Study Summary -
War on Terror / Long War

- **Equipment**
  - **Al-Qaeda - Flintstones in hardware ~ Jetsons in information warfare**
  - **West - Jetsons in hardware ~ Flintstones information warfare**
- **Training**
  - **Al-Qaeda - Mediocre**
  - **West - The best**
- **Leadership**
  - **Al-Qaeda - Initially high then declining then rising**
  - **West - Initially low then rising then declining**

Case Study Summary - War on Terror / Long War

- **Morale**
  - **Al-Qaeda - Initially high then falling then rising**
  - **West - Initially high then tiring**
- **Tactics**
  - **Al-Qaeda - Spread fundamentalist rule over Muslim world ~ Conduct asymmetric attacks against West**
  - **West - Encourage Muslim democratic reform to cut off extremism at its roots ~ Neutralize terrorist cells**
- **Intangibles**
  - **What does victory look like for either side?**
  - **Al-Qaeda - Can they acquire a weapon of mass destruction to use against the West?**
  - **West - Can't be everywhere at once**

Case Study Summary - War on Terror / Long War

- **Mistakes**
  - **Al-Qaeda**
    - **Alienate Muslims through excessive violence**
  - **West**
    - **Alienate Muslims through excessive violence**
    - **Failure to convincingly articulate a vision for a democratic Muslim world and to resource it and execute on it**

Case Study Summary - War on Terror / Long War

- **Outcome**
  - **Al-Qaeda**
    - Centralized command + control gone, Iraq lost, Bin Laden dead, discredited as ideology as it had no impact in 2011 Arab spring
    - Making progress in Somalia + Yemen, nuclear Pakistan more radicalized than ever, winning in Afghanistan due to government corruption, rise of ISIS
  - **West**
    - Shaky democracy in Iraq with Iran the winner, spend $1 trillion to kill Bin Laden, near economic collapse, oil more important + expensive then ever so funding of fundamentalists continues as before
    - 2011 Arab spring democracy uprisings may be path to victory

Communications Case Study Summary - Arab Spring 2011

- **Goal**
  - **Overcome misgovernance + pervasive sense of humiliation in Muslim world**
  - **Freedom, upward mobility, and a future for their young**
- **Center of Gravity (Strategy)**
  - **Give Muslim world competent, accountable, democratic government that will over time give them the future they desire**
- **Technology / Equipment**
  - **Web 2.0 Weapons of Mass Collaboration to organize + communicate - Facebook, Twitter, YouTube, Text messages**

Communications Case Study Summary - Arab Spring 2011

- **Training**
  - **None**
- **Leadership**
  - **Smart Mobs ~ Bottom up**
- **Morale**
  - **Becoming progressively emboldened**
- **Tactics**
  - **Civil disobedience**
  - **Al Jazeera inspired people toward democracy - stopped focusing on the problems, started focusing on the solutions - convinced the people that they are the solution**

Communications Case Study Summary - Arab Spring 2011

- **Intangibles**
  - **Now comes the hard part once you win - see the movie *The Candidate* - "What do we do now?"**
- **Mistakes**
  - **Can't the U.S. realize this is what victory looks like in the Long War?**
- **Outcome**

  The Arab world today, is now "a collection of failed states who add nothing to humanity or science" because "people were taught not to think or to act, and were consistently given an inferior education. That will change with democracy."

  - Mohamed ElBaradei, Egyptian Nobel laureate

The Current Anarchy

"Various forms of electronic communication, often transmitted by smartphones, can empower the crowd against a hated regime, as protesters who do not know each other personally can find each other through Facebook, Twitter, and other social media. But while such technology can help topple governments, it cannot provide a coherent and organized replacement pole of bureaucratic power to maintain political stability afterwards. This is how technology encourages anarchy. The Industrial Age was about bigness: big tanks, aircraft carriers, railway networks and so forth, which magnified the power of big centralized states. But the post-industrial age is about smallness, which can empower small and oppressed groups, allowing them to challenge the state - with anarchy sometimes the result."

- Robert D. Kaplan, Why So Much Anarchy? Stratfor, Feb. 2014

A Result of the Arab Spring

"I know a lot of Americans think that the Arab Spring has left us worse off in the Middle East as a whole. I firmly believe it has left us better off because Arabs are going to have to start, whether in Egypt, or Tunisia, or Syria or even ultimately, Saudi Arabia, they are going to have to start taking responsibility for their decision and their lives and stop blaming other people."

- Karen House

"I don't believe that they (the Arabs) do hate America. I believe they are incredibly frustrated because all of these countries have enormous numbers of now-educated and unemployed youth, connected to the Internet who know what life is like [elsewhere]. And it's humiliating to have a society that's fundamentally been in decline for three or four hundred years."

- Karen House

Personal Case Study - Jeremy F.

- **Role - Lawyer at the Security + Exchange Commission**
- **Story - At work on 9/11 in 7 World Trade Center**
  - **Saw airplanes hit World Trade Center Towers**
  - **Evacuated to 7 World Trade Center Lobby**
  - **Secret Service would not let them leave building or stand near central elevator shafts, told them to stand near windows**
  - **Saw "things" falling out of World Trade Center Towers…realized they were people jumping to their deaths**
  - **As World Trade Center North Tower collapsed, he could see the shock wave approaching his building + sought cover near central elevator shafts**
  - **Once shock wave passed, Secret Service ordered evacuation of building**
- **Eventually returned to work near Ground Zero, wearing a gas mask to work**
- **What will be his long term sequelae?**
  - **Post traumatic stress disorder ~ Occupational lung disease**

Poem

A scrimmage in a Border Station -
 A canter down some dark defile -
Two thousand pounds of education
 Drops to a ten-rupee *jezail*
The Crammer's boast, the Squadron's pride,
Shot like a rabbit in a ride!
   - Rudyard Kipling, Arithmetic on the Frontier
     (Written about the Second Anglo-Afghan War, 1886)

Poem

"And When he gets to heaven,

To Saint Peter he will tell;

One more Marine reporting, sir.

I've served my time in Hell!"

- PFC. James A. Donahue USMC 1st Marine Division H Company 2nd. Battalion 1st. Regiment, Soldier's Poem

Song

You see it in the headlines, you hear it every day
They say they're gonna stop it, but it doesn't go away
They move it through Miami and sell it in LA
They hide it up in Telluride, I mean it's here to stay
It's propping up the governments in Columbia and Peru
You ask any D.A., man, he'll say there's nothing we can do
From the office of the President right down to me and you
Me and you
It's a losing proposition, but one you can't refuse
It's the politics of contraband, it's the smugglers' blues
                            - Glenn Frey, Smuggler's Blues

Class Simulation

- **Guerilla war aspects**

Questions for Further Discussion

- **Define: insurgency, guerilla warfare, 4th Generation Warfare, Global Guerillas**
- **How is guerilla warfare successfully conducted?**
- **What are the techniques of successful counter insurgency (COIN)?**
- **Can a war be won by guerillas alone?**
- **How has guerilla warfare evolved from the time of the Napoleonic Wars to today?**
- **Describe how the legend of Robin Hood is an excellent example of guerilla warfare**
- **Compare and contrast the American Revolution and the Iraqi Insurrection**
- **If you view the American Revolution as an insurgency, was Boston its Fallujah?**

Reading Assignments

- **TED Talks for this Topic**
  - **http://www.warstudiesprimer.org/ToLearnMore.html**

Recommended Reading to Learn More

- **Non-fiction**
  - **Michael Herr - Dispatches**
- **Fiction**
  - **James Webb - Fields of Fire**
- **Movies**
  - **Apocalypse Now**
  - **Battle of Algiers**
  - **Bloody Sunday**
  - **Charlie Wilson's War**
  - **Lawrence of Arabia**
  - **She Wore a Yellow Ribbon**
- **Simulations**

Conclusion

"The Americans may have all the
   wristwatches, but we have all the time."

- Taliban speaking to villagers in Afghanistan

Conclusion

"Counterinsurgency is not just thinking man's warfare; it is the graduate level of war"

   - Special Forces Officer in Iraq, 2005

   (from FM 3-24 / MCWP 3-33.5 Counterinsurgency)

Conclusion

"Be polite. Be professional. Be prepared to kill."

- LTC John Nagl

Topic 18

Rosie the Riveter

The Home front

Song

Over there, over there,
Send the word, send the word over there -
That the Yanks are coming,
The Yanks are coming,
The drums rum-tumming
Ev'rywhere.
So prepare, say a pray'r,
Send the word, send the word to beware.
We'll be over, we're coming over,
And we won't come back till it's over
Over there.

    - George M. Cohan, Over There

Thematic Quote

"Infinite money is the sinews of war"
                                    - Cicero

Thematic Quote

"We must be the great arsenal of democracy"

- Franklin Delano Roosevelt

Thematic Quote

"Anything you can do I can do better"
- Annie Oakley in Annie Get Your Gun

The Painting

We Can Do It (Rosie the Riveter)

- J. Howard Miller

(Westinghouse)

The Painting

Detroit Industry Murals
- Diego Rivera
(Detroit Institute of Arts)

The Question

Can you win a war without mobilizing the home front?

What Do You Need to Run a War?

- **Politicians**
    - **"One step above child molesters" - Woody Allen**
        - **Soldiers don't start wars - Politicians start wars**
- **Industrial base**
- **Military - industrial complex and defense procurement**
- **Morale / Political will**
- **The people**

Mobilizing Women in WWII

- **Rosie the Riveter**
  - **Women could do a man's work**
- **Leads to women entering the workforce**

Mobilizing the Scientific Base in WWII

- **England**
  - **Radar**
  - **Code breaking**
- **US**
  - **Operations research**
  - **Computing**
  - **Atomic bomb**
- **Germany**
  - **Jet aircraft**
  - **Rockets**
- **Japan and Russia**
  - **Nothing**

Arsenals of Democracy

- **Russia**
  - **Planning, mass production, mass mobilization were pillars of Soviet survival and revival ~ Raw desperation fired them**
- **United States**
  - **Voluntary economic effort ~ Economic opportunism fired them**
    - **"If you are going to try to go to war in a capitalist country, you have got to let business make money out of the process, or business won't work" - Henry Stimson**
- **Germany**
  - **Believed in skilled craftsmanship rather than mass production**
  - **Not enough of a command economy like Soviets; not enough of a capitalist economy to rely on private enterprise**
  - **Was a bureaucratic command economy**
    - **Richard Overy, Why the Allies Won, Chapter 6**

The Purpose of an Arsenal of Democracy

"With us it was always 'Sweat saves blood' but with them it was 'Equipment saves men.'"

- German infantryman in World War II

From Public to Private Arsenals

- ## Pre-WW II
  - ### Wars were infrequent ~ Had very small standing force ~ Not enough business to sustain defense contractors
  - ### So most needs met by US government arsenals that kept technology of war alive between wars and had weapons designs for contractors to use during wars
- ## Post-WW II
  - ### Contractors stay on due to Cold War continuous mobilization
  - ### For newest technologies (aircraft + missiles) - only private contractors exist
  - ### Public arsenals closed down over time, their work taken over by private arsenals (contractors) which feeds them
    - Harvey Sapolsky, MIT 17.460 Defense Politics, 2002

Military Industrial Congressional Complex

"This conjunction of an immense military establishment and a large arms industry is new in the American experience. The total influence -- economic, political, even spiritual -- is felt in every city, every State house, every office of the Federal government. We recognize the imperative need for this development. Yet we must not fail to comprehend its grave implications. Our toil, resources and livelihood are all involved; so is the very structure of our society."

- Dwight David Eisenhower, Farewell Address, 1961

Military Industrial Congressional Complex

"In the councils of government, we must guard against the acquisition of unwarranted influence, whether sought or unsought, by the military industrial complex. The potential for the disastrous rise of misplaced power exists and will persist.

We must never let the weight of this combination endanger our liberties or democratic processes. We should take nothing for granted. Only an alert and knowledgeable citizenry can compel the proper meshing of the huge industrial and military machinery of defense with our peaceful methods and goals, so that security and liberty may prosper together."

- Dwight David Eisenhower, Farewell Address, 1961

The True Cost of Defense

"Every gun that is made, every warship launched, every rocket fired signifies, in the final sense, a theft from those who hunger and are not fed, those who are cold and not clothed. This world in arms is not spending money alone. It is spending the sweat of its laborers, the genius of its scientists, the hopes of its children. This is not a way of life at all in any true sense. Under the cloud of threatening war, it is humanity hanging from a cross of iron…

The cost of one modern heavy bomber is this: a modern brick school in more than 30 cities … We pay for a single fighter with a half million bushels of wheat. We pay for a single destroyer with new homes that could have housed more than 8,000 people."

- Dwight David Eisenhower, Speech to American Society of Newspaper Editors, 1953

Military Industrial Congressional Complex

- **Creation of Cold War**
- **Collusion of Congress and Military and Defense industry**
- **Revolving door of employment**
- **Buys weapons we don't need**
- **Routes defense dollars to big ticket equipment rather than personnel and training**
  - **Huge impact on readiness**
- **No one knows where the money is going**

- Franklin Spinney on Now with Bill Moyers, Aug 1, 2003

Current Evidence for Military - Industrial Complex

- **That 15+ years after the Cold War ended, the United States was still buying Cold War weapons like the F-22, as enshrined in recent Quadrennial Defense Review**

Augustine's Laws Number XVI

- **In the year 2054, the entire defense budget will purchase just one aircraft. This aircraft will have to be shared by the Air Force and Navy 3-1/2 days each per week except for leap year, when it will be made available to the Marines for the extra day.**

Billions and Billions

Year	Defense Budget as %GDP	Defense Budget in FY06 $
1963	9%	$392 billion
1982-1987	5.7-6.1%	$374 billion-> $471 billion
1998	3.1%	$325 billion
2006	3.3%	$429 billion*

(* Does not include supplemental $100 billion in annual war costs)

- Pamela Hess, Defense Spending Approaching Cold War High, UPI, Feb. 8, 2006

What Does War Cost?

Table: Costs of Major U.S. Wars (All dollars in billions; source: Congressional Research Service)

War	Current (Then Year) Dollars	Constant (FY 2007) Dollars
American Revolution	0.12	3.577
War of 1812	0.89	1.126
Mexican War	0.82	1.987
Civil War (US)	2.30	56.297
Civil War (CSA)	1.0	24.506
Spanish-American War	0.27	7.286
World War I	33.0	642.0
World War II	296.0	3,211.0
Korea	67.0	691.0
Vietnam	111.0	650.0
Desert Storm	61.0	92.0
GWOT	n/a	439.0

What Does War Cost?

Costs of US Wars
$ Billion FY2007

(Bar chart showing, in $ Billion adjusted for inflation: American Revolution 4, War of 1812 1, Mexican War 2, Civil War (US) 56, Civil War (CSA) 25, Spanish-American War 7, World War I 642, World War II 3211, Korea 691, Vietnam 650, Desert Storm 92, Iraq & GWOT 810 with 2007–2016 (CRS est.) portion shown.)
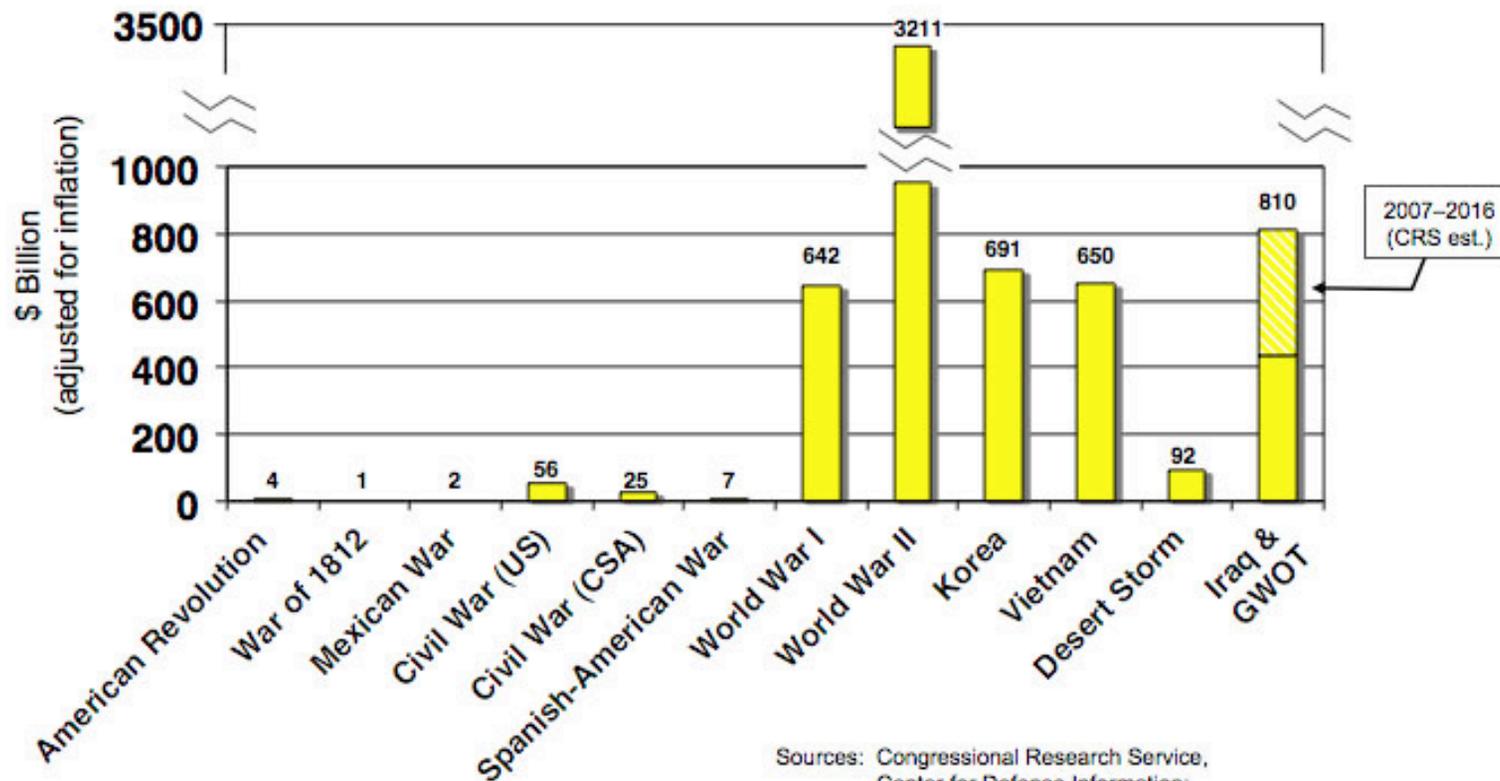
Sources: Congressional Research Service, Center for Defense Information:
http://www.cdi.org/friendlyversion/printversion.cfm?documentID=3401
http://www.cdi.org/PDFs/CRS%20on%20%20war%20costs-fy2007.xls

May 8, 2006

Cost of the Long War

- **Congressional Research Service in March 2011 estimates $1.4 trillion through 2012**

- **Congressional Budget Office estimates $1.8 trillion through 2021**

- **In 2011 Brown University's Watson Institute for International Studies estimates ultimately $3.7-4.4 trillion**

  - Daniel Trotta, War Costing US At Least $3.7 Trillion, Reuters, June 29, 2011

Cost of Counterterrorism Spending

- ## From Fiscal 2002 - Fiscal 2017 = $2.8 trillion
  - ### Total discretionary spending over that time = $18 trillion

- Stimson Center, Counterterrorism Spending: Protecting America While Promoting Efficiencies and Accountability, May 16, 2018

How to Finance a War

- **Athens - founded Delian League (478 BC), require members to pay yearly fee for their defense**

- **Sparta - extract tribute from dependent states + got help from Persians (431-404 BC) in Peloponnesian War**

- **Rome up to Punic Wars - tributes + taxes**

- **Rome during Punic Wars (264-146 BC) - debased coinage to increase money supply leading to runaway inflation + sovereign debt crisis during Social War 50 years later with Rome defaulting in 86 B.C which sealed demise of Roman Republic**

- **After Fall of Rome in (5th century AD) - plunder**

- **William the Conqueror financed Norman invasion of England in 1066 by debasing his currency, then paid for subsequent operations out of tax receipts**

- **Taxation worked until European wars became too expensive for state treasuries alone so in 1580's Philip I of Spain turns to banking houses of Genoa to fund Spanish Armada**

- **1803 Napoleon funds his wars by selling the Louisiana Territory to the U.S.**

- **1861 American Civil War - governments rely on taxation, printing money or borrowing - South printed paper money which depreciated dramatically, North developed war bond which covered 66% of their costs**

- Amanda Foreman, Funding War Through the Ages, Wall Street Journal, Oct. 31, 2019

Picking Up The Tab

- **Wars usually too costly to pay for exclusively out of taxation**
- **Wars usually financed by mix of new taxes + three ways of borrowing**
  - **Borrow from subservient central bank which prints money in return for Treasury bills**
    - **Easy to do, but monetary expansion leads to inflation**
  - **Sell bonds to public which diverts its savings into government debt**
    - **Avoids inflation, spreads cost over time**
  - **Sell Treasury bills, bonds, etc. to foreigners, retaining option to devalue war debt through currency depreciation**
    - **But he who pays the piper calls the tune**
- **US borrowed from abroad to secure independence, printed money in Civil War, sold bonds at home in World Wars I and II**
- **Sound national finances have proved to be indispensable to the country's military strength**

- Niall Ferguson, Warfare on the Installment Plan, Wall Street Journal, June 5, 2007

Focused Case Study: California Dreamin'

- **Los Angeles in 1941 is cradle of America's airpower - Why?**
  - "This part of the country has always been a little cracked. It's the most wonderful place in the world to start an ism or a religion or a new business. People fall for it here a little more" - Richard Millar of Vultee Aircraft
    - **Climate, favorable labor market**
    - **Most importantly - easy access to capital, easy access to Army + Navy**
  - **8 factories accounting for ~ 33% order backlog**
    - **Lockheed Vega in Burbank, Lockheed in Burbank, Vultee in Downey, Douglas in Santa Monica, North American in Inglewood, Douglas in El Segundo, Northrop in Hawthorne, Douglas in Long Beach**
  - **Order backlog in millions**
    - **1938 - $65 million with 12,000 workers**
    - **1939 - $108 million with 20,000 workers**
    - **1940 - $350 million**
    - **1941 - $1 billion with 57,000 workers**
    - "It is all sort of a mad dream" - Donald W. Douglas, founder of L.A. aircraft industry in 1920
    - Ansel Adams (photographer), City of Angels, Fortune, March 1941

Focused Case Study: California Dreamin'

- **End of aircraft production in California**
  - **Douglas Long Beach plant built in 1941 delivered 15,000 military + commercial aircraft**
    - **In 2006, last commercial transport (B-717) produced**
    - **In 2008, last military aircraft (C-17) produced**
      - **(C-17 production line finally closed in 2015)**

- Pierre Sparaco, California Dreamin', Aviation Week Feb 27, 2006

Focused Case Study: Arsenal of Democracy: Willow Run

- **May 1940 - FDR calls to produce 50,000 airplanes / year**

- **January 1941 - Charles Sorensen of Ford visits Consolidated Aircraft who is building 1 B-24 / day**
  - **Sorensen feels they are building custom-made airplanes like cars were built 35 years ago, feels he could build 1 B-24 / hour using modern assembly line techniques**

- **March 1941 contract ~ April 1941 break ground**
  - **Albert Kahn designs 2.5 million square foot plant**

- **November 1941 production begins**
  - **First B-24 rolls off line October 1942**

  - Don Sherman, Willow Run, Air & Space, Aug/Sept 1992

Focused Case Study: Arsenal of Democracy - Willow Run

- **1942**
  - **Built only 56 B-24's ~ Will It Run?**
  - **Aircraft very complex ~ Shortage of workers**
- **1944**
  - **In March produced 453 B-24's in 468 hours**
  - **Produced as many airplanes as Japan**
  - **Produced half as many airplanes as Germany, Britain, Russia**
- **Cost of aircraft fell from $238,000 in 1942 to $137,000 in 1944**
- **Produced total of 8,685 B-24's**
  - **- Don Sherman, Willow Run, Air & Space, Aug/Sept 1992**

Focused Case Study: Arsenal of Democracy - Detroit Tank Arsenal

- **WWI - US built 1,000 tanks - none saw action**
- **1920's - US ignored tanks**
- **1930's - No money to buy tanks**
- **July 1940 US Army creates separate armor force post Blitzkrieg, but has no tanks**
  - **President of GM - William Knudsen - member National Defense Advisory Commission**
  - **Calls President of Chrysler to ask if he could make tanks - The reply:**
    - **"Yes. Where can I see one?"**
- **- Ann Bos+ Randy Talbot. Enough and On Time: The Story of the Detroit Arsenal. Michigan History, Mar/Apr 2001**

Focused Case Study: Arsenal of Democracy - Detroit Arsenal

- ## August 15, 1940
  - ### Army and Chrysler sign contract
  - ### Army owns plant, Chrysler will operate it
  - ### Albert Kahn designs 5 x 2 block plant of 1.1 million square feet ~ Chrysler designs M3 tank
- ## April 24, 1941
  - ### Detroit Tank Arsenal dedicated, first tank rolls off line
- ## May 1941 - May 1942 ~ 2,200 M3 tanks built
- ## July 1942 - August 1945 ~ 20,000 M4 tanks built
  - ### 25% of all US tank production, same as all tank production of Britain and Germany

- Ann Bos+ Randy Talbot. Enough and On Time: The Story of the Detroit Arsenal. Michigan History, Mar/Apr 2001

Focused Case Study - Arsenal of Democracy - Open Source Development + Wars Won

- ## Hypothesis
  - ### Geographic proximity / focus of manufacturers in key industries led to US victories in wars of 20th century due to shared R+D through employees switching from one to another
- ## Examples
  - ### WW I - Detroit - Mass production of vehicles
    - #### Manufacturers: Ford, GM, Chrysler, Packard, etc
      - …and continues with WW II
  - ### WW II - Los Angeles - Aviation
    - #### Manufacturers: North American, Douglas, Lockheed, Vega, Vultee, Northrop
  - ### Cold War - Silicon Valley - Computers
    - #### Manufacturers: HP, Apple, etc.

Something In The Air

"In the late 19th century Alfred Marshall, a founding father of modern economics, asked why firms in the same industry were often geographically near each other. Proximity, he said, created something "in the air": "…if one man starts a new idea, it is taken up by others and combined with suggestions of their own; and thus it becomes the source of further new ideas."

Marshall was thinking about Victorian manufacturing, but the same is true of the information-technology companies of the 2010s. Silicon Valley is home to many of the industry's giants, and hopeful founders of young start-ups still head for northern California. A certain Mark Zuckerberg left Harvard for Palo Alto as soon as he got the chance. Others beat a path to newer hubs, such as Berlin, London, Moscow, New York or Tel Aviv.

Economic theory suggests four main reasons why firms in the same industry end up in the same place. First, some may depend on natural resources, such as a coalfield or a harbour. Second, a concentration of firms creates a pool of specialised labour that benefits both workers and employers: the former are likely to find jobs and the latter are likely to find staff. Third, subsidiary trades spring up to supply specialised inputs. Fourth, ideas spill over from one firm to the next, as Marshall observed."

- The Geography of Start-Ups. Something In The Air. Why Birds Of A Tech Feather Flock Together. The Economist. Oct 25, 2012

Case Study Summary - Fort Grosse Pointe Farms

- **Goal**
  - **Defend Detroit - Arsenal of Democracy - a key target**
- **Center of Gravity (Strategy)**
  - **After Soviets develop nuclear bomb and US decides it has manned bombers to deliver it…US decides it needs effective air defense**
- **Equipment ~ Training ~ Leadership ~ Morale ~ Tactics**
  - **Early warning radar - interceptor aircraft - Nike surface to air missile (SAM) - SAGE to guide it all**
  - **Anti aircraft artillery (AAA) used as stop gap until Nike is ready**
- **Intangibles ~ Mistakes**
  - **No community, no matter how affluent, was exempt from contributing to national defense**
    - **By 1952, US Army AAA installed in Grosse Pointe Farms**
      - **Total of 4 - 90 or 120 mm guns, deployed in rushed manner**
- **Outcome**
  - **By 1956, US Army AAA is removed, superseded by Nike SAMs around city - closest was Belle Isle**
  - **By 1958 US Army AAA base transformed into Brownell Middle School**

Personal Case Study: One Professor's Contracting Odyssey

- **Virtual Naval Hospital (www.vnh.org)**
  - **Digital library to promote wellness in Sailors + Marines and aid disease correction by health care providers**
  - **Budget creep while doing the same job the whole time**
    - **FY1996 - $180,000 ~ 10 page contract ~ I understood 50% of it**
    - **FY 2005 - $360,000 ~ 20 page contract ~ I understood 5% of it**
    - **Funding agencies: SPAWAR->NMIMC->Navy Medical Logistics Command**
  - **Success**
    - **User-centric, well received, tri-service, international, military + civil usage, cost-effective**
    - **…so naturally it was canceled because it made the Navy look bad…**
    - **"You should get it funded through an earmark, it would be an earmark we would actually use for once" - SOCOM operator**

Personal Case Study - James O'Connor

- **Role - Ground Observer's Corps in WWII**
- **Story**
  - **Grosse Pointe High School bell tower, equipped with binoculars and a phone**

Personal Case Study - Ninetta D'Alessandro

- ## Role
  - ### During Korean War worked at Irving Air Chute Company in Buffalo, New York
    - #### Known for developing first parachute that could be worn by user + deployed by ripcord in 1919
    - #### Largest parachute company in world
    - #### Caterpillar Club - gold pin to everyone saved by Irving parachute
- ## Story
  - ### Was a housewife who did it because she wanted a job for the extra money…
  - ### …also worked during World War II as a Ladies Locker Room attendant at the Bethlehem Steel Company

Personal Case Study - Christoforo D'Alessandro

- ## Role
  - ### Worked at the Bethlehem Steel Company in Lackawanna New York in the 12" Steel Mill where they rolled 12" steel bars
- ## Story
  - ### During World War II and Korean War, the plant worked around the clock to fill war orders
  - ### He would work a double shift once or twice a week and then work a Saturday or Sunday as well

Class Simulation

- **Home front aspects**

Poem

The men behind the man behind the gun, they dig out ore from deep down in the dark, they shoot the oil wells, they chase the slag out of copper, steel-driving men they drill and twist deep rock, they hammer steel bars for rifle and cannon, they rivet the steel sheets and sew them tight with steel buttons to meet storms or torpedoes - listen, they clank and boom the mighty song of steel - the breath of their assembly line is in miles of tanks - their thumbprints are on bombers over five oceans.

- Carl Sandburg, from the exhibition Road to Victory 1942

Poem

Lie in the dark and listen,

It's clear tonight so they're flying high

Hundreds of them, thousands perhaps,

Riding the icy, moonlight sky.

Men, material, bombs and maps

Altimeters and guns and charts

Coffee, sandwiches, fleece-lined boots

Bones and muscles and minds and hearts

English saplings with English roots

Deep in the earth they've left below

Lie in the dark and let them go

Lie in the dark and listen.

Poem

Lie in the dark and listen
They're going over in waves and waves
High above villages, hills and streams
Country churches and little graves
And little citizens' worried dreams.
Very soon they'll have reached the sea
And far below them will lie the bays
And coves and sands where they used to be
Taken for summer holidays.
Lie in the dark and let them go
Lie in the dark and listen.

Poem

Lie in the dark and listen
City magnates and steel contractors,
Factory workers and politicians
Soft, hysterical little actors
Ballet dancers, 'Reserved' musicians,
Safe in your warm, civilian beds.
Count your profits and count your sheep
Life is flying above your heads
Just turn over and try to sleep.
Lie in the dark and let them go
Theirs is a world you'll never know
Lie in the dark and listen.

- Noel Coward, Lie in the Dark and Listen

Questions for Further Discussion

- **What are the best techniques for organizing the home front?**

Reading Assignments

- **How to Make War Chapter 25**
- **TED Talks for this Topic**
  - **http://www.warstudiesprimer.org/ToLearnMore.html**

Recommended Reading to Learn More

- **Non-fiction**
- **Fiction**
- **Movies**
- **Simulations**
  - **Axis and Allies - Avalon Hill**

Conclusion

"They also serve who only stand and wait"

- John Milton

(also motto of the Royal Observer Corps)

Conclusion

"He who makes the most toys wins"

- Michael P. D'Alessandro

Topic 19

Collateral Damage
Civilians and War

Song

Heard of a van that is loaded with weapons,
packed up and ready to go
Heard of some gravesites, out by the highway,
a place where nobody knows
The sound of gunfire, off in the distance,
I'm getting used to it now
Lived in a brownstown, lived in the ghetto,
I've lived all over this town

This ain't no party, this ain't no disco,
this ain't no fooling around
No time for dancing, or lovey dovey,
I ain't got time for that now
      - Talking Heads, Life During Wartime

Thematic Quote

"Once the rockets are up, who cares where they come down, that's not my department says Wernher Von Braun"

- Tom Lehrer

The Painting

Guernica

- Pablo Picasso

(Museo Reina Sophia)

The Question

In what ways can war be conducted in a moral manner?

How have developments in modern society affected the military profession?

Rules of War

- **Roman warfare ~ "Inter arma silent leges" ~ (When arms clash, the law is silent"**
  - Translation = There is no law on the battlefield
  - Legions did not recognize non-combatants, routinely pillaged and destroyed
  - Extreme violence quickest means to victory
- **Middle Ages ~ Christianity ~ Doctrine of Just War**
  - Soldiers must spare women + children, accept surrender of enemies who drop weapons, respect inviolability of places where resistance not offered
- **By 19th century, Western armies accepted rules and practices of warfare**
  - But by World War II there were numerous war crimes
  - Today lawyers accompany US and UK armies into battle

- John Keegan, Army Top Brass Must Already Regret the Col Mendonca Case, Daily Telegraph, Nov. 15, 2005

Targeting Civilians

- **Historically, civilians were usually not targets**
- **Civilians became targets in mass bombing in WWII**
  - **Did it or did it not work?**
- **Genocide takes off in WWII**
- **Rape as a weapon**
- **Increasing precision of aerial weapons**
  - **Today, expectation is that there will be no civilian casualties**
    - **This impossible expectation is now the best case**
    - **It is even more impossible when the enemy hides in the civilian population**

Targeting Civilians

- **Marc Garlasco**
  - **Former Defense Intelligence Agency targeter**
  - **Currently human rights activist for Human Rights Watch determining civilian toll of his previous work**

  "I think that air strikes probably are the most discriminating weapon that exists. The problem is that even when you hit the right target, there are times when innocents pay the price…I just want people to ask: 'Did it have to happen?'"

  - Josh White, The Man on Both Sides of the Air War Debate, Washington Post, Feb. 13, 2008

Civilians Bear The Brunt of Modern War

- **Battle of Solferino in 1859 during Italian Wars of Independence was inspiration for founding of Red Cross**
  - **There were 40,000 military casualties + 1 civilian casualty**
- **ICRC survey of civilians in Afghanistan, Georgia, Haiti, Liberia, Democratic Republic of Congo, Lebanon, Philippines shows that 150 years later, civilians bear the brunt of war**
  - **44% had personal experience of armed conflict**
  - **28% had close relative killed, 47% lost contact with a close relative**
  - **56% had been forced to leave their homes**
  - **18% had been wounded**
  - **19% knew someone who fell victim to sexual violence**
  - **17% had been tortured**
  - **10% had been imprisoned + 10% had been kidnapped**

- International Committee of the Red Cross, Our World. Views From The Field. The Impact Of Conflicts And Armed Violence On Civilians, 2009

How Are Civilians Represented in Military Video Games?

- **Members of Swiss human rights organizations Trial and Pro Juventute played 20 military video games in presence of lawyers skilled in interpretation of humanitarian laws**
  - **Objective was to see if what players can do in virtual theaters of war were subject to same limits as real world - to see if players can violate international law - by looking for violations of Geneva Conventions**
    - **Looked at how combatants who surrendered were treated, what happened to citizens caught up in war zones, whether damage to buildings was proportionate**
  - **Found games let players kill civilians, torture captives, wantonly destroy homes + buildings**
    - **Suggested game makers should remind players these actions constitute war crimes and should teach players about international humanitarian law + human rights**

- Games 'Permit' Virtual War Crimes, BBC News, Nov 23, 2009

Civilians as Combatants

"Look at the people. Are they murderers? You don't know. You haven't dealt with them, and you haven't been through what they've been through. It's easy to sit here and say that. But you haven't had it eat away at you. It gets you. It gets everybody, man. It took five months, but it even got me, even, and good Christ if it got me it gets everybody. You drop someone in hell and give him a gun and tell him to kill for some goddamned amorphous reason he can't even articulate. Then suddenly he feels an emotion that makes utter sense and he has a gun in his hand and he's seen dead people for months and the reasons are irrelevant anyway, so pow. And it's utterly logical, because the emotion was right. That isn't murder. It isn't even atrocious. It's just a sad fact of life…"

- Will Goodrich in Fields of Fire by James Webb

Civilians as Combatants

"You know why I'm all f*cked up?…Because of a little girl. That's right. A little babysan sucked me right out into the open so the NVA could start an ambush…I was a team leader. I had a kid who was going to shoot her. I knocked his rifle down. Just in time to see him shot in the face…Do you know how it feels to know you caused that? I'll see his face staring at that babysan for the rest of my life. And I'll tell you what. If I hadn't had the shit blown out of me, it would have given me great pleasure to hunt that little girl down and blow her away."

- Will Goodrich in Fields of Fire by James Webb

Focused Case Study - Nobel Laureate as Child Soldier

- **15 year old in 1943 serving in Luftwaffe auxiliary manning anti-aircraft gun**
  - **Volunteers for active duty in U-Boats**
    - **Why? To escape home + become hero as in newsreels**
- **16 year old in 1944 serving in Labor Service**
- **17 year old in 1945 serving in Waffen SS**
  - **Proud to be an elite, fights Soviets in spring 1945 during collapse of Third Reich**
    - **Chaos + confusion of where front line is ~ Horror of battle**
    - **Almost executed for retreating without marching papers**
    - **Never fired a shot at enemy - "absence of necessity to"**
    - **Changes uniform from Waffen SS to Wehrmacht**
    - **Wounded in artillery strike**
    - **Recuperates at spa in Marienbad**
    - **After war was ashamed to be part of a system (SS) that planned, organized, carried out extermination of millions of people - did not admit it until 2006**
  - **- Gunter Grass, How I Spent the War, New Yorker, June 4, 2007**

Focused Case Study - Child Soldiers

- **Ishmael Beah, 12 years old, 1993**
  - **Separated from family who was killed in Sierra Leone civil war**
  - **1994 pressed into Sierra Leone army**

  "We smoked marijuana and sniffed "brown brown," cocaine mixed with gunpowder…and of course I took more of the white capsules…after several doses of these drugs, all I felt was numbness to everything and so much energy that I couldn't sleep for weeks."

  "We watched war movies at night…We all wanted to be like Rambo; we couldn't wait to implement his techniques."

  - Ishmael Beah, The Making, and Unmaking of a Child Soldier, New York Times Magazine, Jan 14, 2007

Focused Case Study - Child Soldiers

- ## Ishmael Beah, 12 years old, 1993

  "Sometimes we were asked to leave for war in the middle of a movie. We would come back hours later after killing many people and continue the movie as if we had just returned from intermission. We were always either on the front lines, watching a war movie or doing drugs. There was no time to be alone or think. When we conversed with one another, we talked only about the movies and how impressed we were with the way either the lieutenant, the corporal, or one of us had killed someone. It was as if nothing else existed."

  "The villages that we captured and turned into our bases as we went along and the forests that we slept in became my home. My squad was my family, my gun was my provider and protector and my rule was to kill or be killed. The extent of my thoughts didn't go much beyond that. We had been fighting for more than two years, and killing had become a daily activity. I felt no pity for anyone. My childhood had gone by without my knowing, and it seemed as if my heart had frozen."

  - Ishmael Beah, The Making, and Unmaking of a Child Soldier, New York Times Magazine, Jan 14, 2007

Rape As A Weapon

- ## Location + Population
  - ### In Congo: From young children of both sexes to senior citizens
- ## Perpetrators
  - ### Started with rebel soldiers + government soldiers
  - ### Spreading to demobilized soldiers + civilians
- ## Reasons
  - ### Little to do with sexual pleasure; everything to do with power
  - ### Is a male bonding experience, increases unit cohesion
  - ### Generation of men has grown up without law + order
  - ### Perpetrators almost never punished - impossible to identify them + bring charges against them

- Betsy Pisik, Congo's Shame: Rape Used As Tool of War, Washington Times, Sept. 8, 2009
- Betsy Pisik, Congo: Men Told Not to Shun Raped Women, Washington Times, Sept. 9, 2009
- Betsy Pisik, Survivor's of Congo's Rape Epidemic Rebuild, Washington Times, Sept 10, 2009

Rape As A Weapon

- **Effect**
  - **Post traumatic stress disorder in victims**
  - **Children who are unwanted results of rape are abandoned**
  - **Physical injuries from gang rape + being raped with sharp objects -> fistula**
  - **Is becoming chosen weapon of social terror - Woman who is raped is blamed + disowned by her husband and family who are ashamed of their inability to protect her**
  - **Leads to shattering family / village / tribal structures**
- **Solution**
  - **Professionalize army, policy, courts**

- Betsy Pisik, Congo's Shame: Rape Used As Tool of War, Washington Times, Sept. 8, 2009
- Betsy Pisik, Congo: Men Told Not to Shun Raped Women, Washington Times, Sept. 9, 2009
- Betsy Pisik, Survivor's of Congo's Rape Epidemic Rebuild, Washington Times, Sept 10, 2009

Genocide 101

- **Genocides can happen only if 4 important conditions are in place**
  - **There must be the cover of war**
  - **Ethnic grievances must be manipulated + exaggerated**
  - **Ordinary citizens must be deputized by their government to become executioners**
  - **Rest of the world must be persuaded to look away and do nothing**
- **UN took no action during genocide in Rwanda**
  - **Allows murderers to intimidate them from doing the right thing and saving lives**
  - **Shows more concern for not offending sovereignty of one its member nations**
- **World governments must agree that the extinction of a race is a crime worth stopping at any cost and back this up with action**
  - **Extinction of an entire race should be considered an override clause to rule of national sovereignty**

- Paul Rusesabagina, Darfur, Wall Street Journal, April 9, 2006

Worse Genocides of All Time

"The death of one man is a tragedy; the death of a million men is a statistic."
- Stalin

- These numbers killed must be taken as rough estimates
  - **Nazi Germany under Hitler**
    - **6 million Jews + 11 million Slavs**
    - - Donald Niewyk + Frances Nicosia, The Columbia Guide to the Holocaust
  - **Soviet Union under Stalin**
    - **Few million executed, 10 million in forced labor camps, 30-50 million in deliberate famines in Ukraine in 1930's**
    - - Antony Beevor, Mystery of Olga Chekhova Interview on Booknotes, Oct 24, 2004
  - **China under Mao**
    - **36-45 million in Great Leap Forward / Great Famine from 1958-1961 + 1 million in Cultural Revolution in 1966**
    - - Nicholas D. Kristof, 'Mao': The Real Mao, New York Times Book Review, Oct. 23, 2005
    - - Andrew Roberts, Whitewashing Mao, Wall Street Journal, Oct. 6-7, 2012
    - - Michael Fathers, A Most Secret Tragedy, Wall Street Journal, Oct 27-28, 2012
  - **Communism in total**
    - **80-100 million (25 million in Soviet Union, 65 million in China, 1.7 million in Cambodia)**
    - - Jean-Louis Panne et.al., The Black Book of Communism: Crimes, Terror, Repression

When Veterans Become Civilians

- ## How to regard them

  "For there is justice in the claim that steadfastness in his country's battles should be as a cloak to cover a man's other imperfections; since the good action has blotted out the bad, and his merit as a citizen more than outweighed his demerits as an individual."

  - Pericles

When Veterans Become Civilians

- **How to treat them / what are they entitled to**
  - **Health care for wounds**
  - **Education for the mind**
  - **Counseling for the soul**
    - **Post traumatic stress disorder a huge issue**

When Veterans Become Civilians

- **How they behave**
  - **Band of Brothers syndrome**
  - **VFW syndrome**
  - **…they are proud of their service..**

  "If there was a bar in VA Hospitals, the patients would never go home…"

When Veterans Become Civilians

"Soldiers face myriad challenges when they return home, but one of the most destructive is the sense that their country doesn't quite realize that it - and not just the soldiers - went to war. The country approved, financed and justified war - and sent the soldiers to fight it. This is important because it returns the moral burden of war to its rightful place: with the entire nation. If a soldier inadvertently kills a civilian in Baghdad, we all helped kill that civilian. If a soldier loses his arm in Afghanistan, we all lost something."

- Sebastian Junger, Veterans Need to Share the Moral Burden of War, Washington Post, May 24, 2013

Focused Case Study-How Does War Affect Its Participants Long-Term?

"But, nevertheless, the generation that carried on the war has been set apart by its experience. Through our great good fortune, in our youth our hearts were touched with fire. It was given to us to learn at the outset that life is a profound and passionate thing."

- Oliver Wendell Holmes, In Our Youth Our Hearts Were Touched With Fire

Focused Case Study-How Does War Affect Its Participants Long-Term?

"I think it's the greatest generation any society ever produced. Came out of the Depression with all that economic deprivation, went beyond their own shores to help save the world from fascism, came back, rebuilt their enemies, built the country that we have today, married in record numbers, went to college in record numbers, kept their values, never whined, never whimpered."

- Tom Brokaw, The Greatest Generation

Focused Case Study-How Does War Affect Its Participants Long-Term?

"And yet, at least for me, it (World War II) was the most important period of my life - really the first thing I did. I was born, I had polio, I went to college - and I was in the war. Although it wasn't long before it faded against my new life - starting a family and getting a job - it marked me. It may sound trite to modern ears, but those really were years when you could get involved in something beyond yourself - something that connected you to your times in ways that no longer seem so natural, or expected."

- Ben Bradlee, A Return, New Yorker, Oct 2, 2006

Focused Case Study-How Does War Affect Its Participants Long Term?

Question: You fought against the Japanese. Do you still hold any animosity toward them today?

Brigadier General Robert L. Scott: No. I fought against machines, not men. Once I was playing golf with a famous Japanese flier in a promotion. We played all day, and he never said a word. I thought that he couldn't speak English. That night we were on a television show together, and the commentator asked me if I had any hatred for my enemy, pointing to the silent flier beside me. I replied: "He wasn't my enemy. His country had some politicians that went wrong just like our country has had some that have gone wrong. I fought against his government. That was the enemy. He was not my enemy." At that point he turned to me and embraced me. He had understood everything I had been saying. I fought planes, not men.

- Jamie H. Cockfield, Interview with Retired Brig. General Robert L. Scott - American World War II Ace Pilot and Hero, World War II Magazine, Jan. 1996

Civil-Military Relations

"For the first time in my life I came to realize the things about the military that make them better than the rest of us.

They have a higher sense of honor, a code, standards and patriotism. They have a contract that goes up to and including the loss of life, and service to their country. We, as civilians, don't have that kind of contract."

- Robert Coram

Civil - Military Relationships

- **There is a growing gap between the soldiers who serve in the military and the civilians who oversee them**

  - Thomas Ricks, Making the Corps

Civil-Military Relations

- **With the end of the draft there is a decreasing number of the middle and upper-classes serving in the US military**

  - **This leads to a growing gap between (undisciplined / permissive / morally corrupt) civilians and the (disciplined) military in the US**

  - **This gap is potentially corrosive and dangerous…as the US military becomes alienated from American society**

  - **Officers are becoming more and more conservative and politically active**

  - **Fewer and fewer members of Congress have served in the military**

    - **Thomas Ricks, Making the Corps, 1997**

Civil - Military Relations

"The more I think about it, it seems to me that the all volunteer force has been a tactical success and a strategic failure, in that it detached the American people from their wars. And so we do not wage them as well as we should."

- Thomas E. Ricks, 2013

Civil-Military Relations

"A military coup has taken place in the United States--the year is 2012--and General Thomas E. T. Brutus, Commander-in-Chief of the Unified Armed Forces of the United States, now occupies the White House as permanent Military Plenipotentiary. His position has been ratified by a national referendum, though scattered disorders still prevail and arrests for acts of sedition are underway. A senior retired officer of the Unified Armed Forces, known here simply as Prisoner 222305759, is one of those arrested, having been convicted by court-martial for opposing the coup. Prior to his execution, he is able to smuggle out of prison a letter to an old War College classmate discussing the "Origins of the American Military Coup of 2012." In it, he argues that the coup was the outgrowth of trends visible as far back as 1992. These trends were the massive diversion of military forces to civilian uses, the monolithic unification of the armed forces, and the insularity of the military community."

- LTC Charles J. Dunlap Jr. USAF, The Origins of the American Military Coup of 2012, Parameters, Winter 1992

Final Word on Civil-Military Relations

"War is too important to be left to the generals"

- Georges Clemenceau, Prime Minister of France 1917-1920

Case Study Summary - Iliad / Trojan War

- **Story**
  - **~ 1300 BC, Paris, son of Priam - King of Troy, abducts Helen, wife of Menelaus, King of Sparta. Agamemnon, King of Mycenae, leads Greeks (Achaeans) who come in 1,000 ships against Troy**
  - **Fight to standstill for 10 years,**
  - **Iliad, written in ~ 800 BC, covers few weeks in 10th year of war**
- **Goal**
  - **Greeks - Return Helen to Sparta**
  - **Trojans - Survive**
- **Center of Gravity (Strategy)**
  - **Greeks - Siege of Ilium**
  - **Trojans - Ilium's strong walls**
  - **- Michael Wood, In Search of the Trojan War**

Case Study Summary - Iliad / Trojan War

- **Equipment + Training**
  - **Equal**
- **Leadership**
  - **Greeks - Achilles, wily Odysseus ~ Trojans - Hector**
- **Morale**

  "It's a story about the sort of people I know…It doesn't matter where they are or what their nationalities or what environment. These are fighting people and they share a lot of the characteristics of people I've known in circumstances which to me are not by any means unfamiliar" - General Sir John Hackett

- **Tactics**
  - **Center around single warrior combat**
  - **Heavily influenced by Gods**
    - **Human sacrifices - Agamemnon sacrifices daughter Iphgeneia for good winds to sail to Troy**
  - **Michael Wood, In Search of the Trojan War**

Case Study Summary - Iliad / Trojan War

- **Intangibles**
  - **Most famous facts are most invisible**
    - **Begins with woman**
    - **Ends with wooden horse**
  - **Is it true?**
    - **Poem passed orally though bards for 500 years until Homer writes it down in 8th century BC**
    - **Troy + Mycenae exist**
    - **At least 50% of Greek cities said in Iliad to have sent ships existed at that time**
    - **Greeks of the time were raiders + traders**
      - **Women were commonly seized in war and used as slaves in Greek flax industries**
      - **- Michael Wood, In Search of the Trojan War**

Case Study Summary - Iliad / Trojan War

- **Mistakes**
  - **Offending the Gods**
  - **Trojan Horse**
- **Outcome**
  - **Greeks conquered Ilium + demolished it, slaughtered men, took women back as concubines or slaves**
  - **Ever since, those women have stood as the image of the fate of the conquered in war**
  - **Portraits of suffering of victors + vanquished are universal**
  - **Is archetypal image of tragedy of war**
  - **- Michael Wood, In Search of the Trojan War**

The Aeneid

"...it occurred to me that the difficulties we have with Aeneas and his epic cease to be difficulties once you think of him not as a hero but as a type we're all too familiar with: a survivor, a person so fractured by the horrors of the past that he can hold himself together only by an unnatural effort of will, someone who has so little of his history left that the only thing that gets him through the present is a numbed sense of duty to a barely discernible future that can justify every kind of deprivation. It would be hard to think of a more modern figure.

Or, indeed, a more modern story. What is the Aeneid about? It is about a tiny band of outcasts, the survivors of a terrible persecution. It is about how these survivors-clinging to a divine assurance that an unknown and faraway land will become their new home-arduously cross the seas, determined to refashion themselves as a new people, a nation of victors rather than victims. It is about how, when they finally get there, they find their new homeland inhabited by locals who have no intention of making way for them. It is about how this geopolitical tragedy generates new wars, wars that will, in turn, trigger further conflicts: bella horrida bella. It is about how such conflicts leave those involved in them morally unrecognizable, even to themselves. This is a story that both the Old and the New Worlds know too well; and Virgil was the first to tell it. Whatever it meant in the past, and however it discomfits the present, the Aeneid has, alas, always anticipated the future."

- Daniel Mendelsohn, Epic Fail? New Yorker, October 15, 2018

Staff Ride - Siege of Leningrad Sept. 8 1941 - Jan. 27, 1944

- **Prelude - Politics - Strategy**
  - Hitler to Army Group North - "Starve the city and annihilate it by bombing and shelling"
  - No surrender allowed in order to not feed the population at the expense of the German Reich
- **Approach of armies to battlefield - Why was battle fought here**
  - Cradle to three revolutions (Revolution of 1905, February Revolution of 1917, October Revolution of 1917) ~ City of Lenin ~ Huge industrial capacity
- **Leaders**
  - Text
- **Logistics**
  - Text
- **Weapons - Direct and indirect**
  - Text
- **Order of Battle**
  - Germans - Army Group North ~ Soviets -
- **Organization - Units and formations**
  - Germans - infantry divisions ~ Soviets -
- **Command, control, communications, intelligence**
  - Text
- **Tactics**
  - Text
- **Weather**
  - Bitter cold in winter
- **Terrain**
  - Marsh
- **Operational**
  - Siege lasts 871 days
- **Chronologic narrative of battle taking note of friction and fog**
  - Sept. 8, 1941 - Schlusselburg captured, cutting off land supply to city - only open road is across ice of Lake Ladoga in winter months
  - Sept. 15, 1941 - 1 month of bread left
  - Nov. 20, 1941 - Bread ration reduced to 150 g / day for office workers + 250 g / day for factory workers ~ Several thousand civilians dying each day
  - Nevsky Bridgehead was thorn in German position - 70,000 Soviet casualties there
  - Jan. 12, 1943 - Operation Spark breaks siege - is turning point on Russian Front along with Stalingrad
  - By Jan. 1943 the Soviets clear a strip 5-7 miles wide along coast of Lake Ladoga
  - Feb. 6, 1943 - Railway line built from city to mainland
  - German bombing + shelling of city persist
  - Jan. 27, 1944 Germans pushed 150 km from city + siege completely lifted
- **Decisions - What good and bad ones were made**
  - Hitler - Leningrad would be taken by siege, not by storm - panzers would be needed to storm the city + were required elsewhere - this siege tied down an Army Group which could have been used at Moscow or Stalingrad
- **OODA loop - Who is inside the other's**
  - No one
- **Who thought they won, who really won**
  - Soviets thought they won, Soviets really won
- **What effect did it all have - Aftermath of battle**
  - Collective suffering, courage, perseverance in resisting + defeating Germans shaped psyche of city
  - "Troy fell, Rome fell, but Leningrad survived"
  - 800,000 civilians killed - 3% from bombing + shelling, 97% from starvation + cold
  - Population went from 3 million to 600,000

Case Study Summary - Battle of Paris

- **Goal**
  - **Germans - destroy Paris**
  - **French - liberate Paris**
- **Center of Gravity (Strategy)**
  - **Germans - blow up bridges, water reservoirs, gas works, electrical works, factories, monuments**
  - **French - hold Prefecture of Police + post offices (law + order and communications)**
- **Equipment**
  - **Germans - tanks, infantry, engineers**
  - **French - Resistance, civilians, irregulars (prior French soldiers)**
- **Training**
  - **Germans - fair**
  - **French - little**
- **Leadership**
  - **Germans - good**
  - **French - divided between Vichy (collaborators), Gaulists (democracy), Communists**
  - **- Larry Collins and Dominique Lapierre, Is Paris Burning?**

Case Study Summary - Battle of Paris

- **Morale**
  - **Germans - poor**
  - **French - great**
- **Tactics**
  - **Germans - crush the uprising**
  - **French - Aux Barricades!**
- **Intangibles**
  - **How do civilians liberate a city?**
  - **When is the right time for civilians to rise up? - Early to encourage Allies to divert resources to rescue city but risk being crushed (think Warsaw) or later when you are about to be liberated and there is little risk to you?**
  - **For Allies - do you focus attack on destroying German Army (Patton's wish) or on liberating a symbol (Paris)?**
  - **How close were Germans to destroying city?**
- **Mistakes**
- **Outcome**
  - **It is the humanity of the individual that counts (General von Choltitz) rather than the humanity of the race (Germans)**
  - **- Larry Collins and Dominique Lapierre, Is Paris Burning?**

Computing Case Study Summary - Social Networking From Battlefield to Home Front

- **Goal**
  - **Stay in touch with friends + family while deployed**
- **Center of Gravity (Strategy)**
  - **Use Facebook**
- **Technology / Equipment**
  - **PC with high speed Internet connection**
- **Training / Leadership / Morale**
  - **Raised morale for all involved**
- **Tactics**
  - **Daily wall posts of activities and photo uploads of patients treated + procedure performed / living quarters / area of operations**
- **Intangibles / Mistakes**
  - **How does this affect operational security?**
  - **Is there any reason to write letters home anymore?**
- **Outcome**
  - **A Special Forces medic in the Kurdish area of Iraq in 2008-09 stayed in close touch with family, fiancée and friends on daily basis**

Computing Case Study Summary - OPSEC 101 VPU-2 (Not)

- **Goal**
  - **Create social network for members + alumni of VPU-2, a US Navy special operations squadron**
- **Center of Gravity (Strategy) / Technology / Equipment**
  - **Use a Facebook page created July 2009**
- **Training / Leadership / Morale / Tactics**
  - **Page advises friends not to discuss current operations and that such discussion will be removed**
- **Intangibles / Mistakes**
  - **In 2001 Aviation Week and Space Technology ("Aviation Leak") outed the VPU squadrons + their mission - this outing is published in the Info section of the page**
  - **November 2009 I was contacted by special agent Anthony B of Naval Criminal Investigate Service who was interested in talking to me about my Facebook page on VPU-2**

Computing Case Study Summary - OPSEC 101 VPU-2 (Not)

- **Intangibles / Mistakes**
  - He said he was told I was the creator of the page because my name + picture was at the top of it
  - I told him I was not the creator of the page, I was the last to write on its wall, that is why I was at the top
  - He confessed he had never used Facebook, was working from a print out of the page and asked if I could tell him who the creator was - I pointed out that Facebook page creator's identities were not public and he would have to contact Facebook…
  - He was most interested in the Open Source Intelligence in the Info section + told me the Navy was very concerned about an operational security breech and thanked me for my help
  - I neglected to inform him of the presence of the VPU-1 private group on Facebook…
  - Later that day in 1 more minute of research I figured out with 99% certainly the identify of the page creator by reading the page and the creator's posts…it was the Culpster
- **Outcome**
  - I was unimpressed with their digital forensics - I question NCIS's competence (I am not alone)
  - What happened to the page? - Page still up, Info section was edited

Personal Case Study - Emily P

- **Role - Displaced person**
- **Story - From a well-to-do Lithuanian family owned an estate**
- **Home occupied as HQ by Soviets (1940) - Germans (1941) - Soviets (1944)**
  - **Soviets treated them worse than Germans**
- **Mother placed in concentration camp by Soviets**
- **She + sister fled the Soviets in 1944 on foot, from Lithuania to Italy to Canada to US**
- **Once in US she wrote letters constantly to VP Nixon asking him to ask Soviets to release her mother**
  - **Nixon met Khrushchev, one week later her mother called her saying she had been released, Emily flew to Moscow to pick her up and bring her to US**
- **She met + married a physician / medical researcher in Toronto who was Czech**
  - **After the Germans occupied Czechoslovakia, as retaliation for a crime against them, they lined up all the men in the town square and shot + killed every second one - he was standing next to his father**

Personal Case Study - Good Morning Vietnam (1) - Duc T.

- **Role**
  - **Boat person**
- **Story**
  - **Family fled Vietnam post 1975 - Bribed officials to get them out**
  - **1 failed attempt at escape - 1 child left behind on night of successful escape**
  - **Get on boat - adrift at sea - attacked by pirates**
  - **Landed in Thailand - in refugee camps - eventually get to USA**
  - **Learned English - wanted to be cartoonist - became neuroradiologist**
  - **Left-behind sister came to USA 10 years later - never learned English - never got a career**
  - **All other siblings professionals - arranged marriages via SAT scores**
  - **Mother would visit him and cook 6 months of food for him at a time and freeze it (an amazing cook!)**
  - **Visited Vietnamese ball with him - South Vietnamese Air Force Colonel was revered guest of honor ("He killed many Communists")**

Personal Case Study - Good Morning Vietnam (2) - Bao N.

- ## Role
  - ### Vietnamese refugee
- ## Story
  - ### Father worked for US government
    - Put family on plane to get out of Vietnam in April 1975, said he needed to stay behind and help the US Embassy burn papers and he would get out on next plane - but got left behind in chaos
    - Assumed disguise of Buddhist monk for 5 years before he could escape from Vietnam and join family in USA
  - ### Family ended up settling in Hollywood, where as a teen he and his friends would spy on a sunbathing William Shatner
  - ### Ended up as a radiologist

- **Question: What drove them to come to the USA after we made a mess of their country and abandoned them?**
  - **Answer - USA is land of opportunity**

Personal Case Study - "I Am From Kurdistan"

- **Role**
  - **Taxi driver in London 2008**
  - **Hometown is Erbil, Federation of Iraq**
- **Story**
  - **Gulf War I - Student at Police Academy in Baghdad, nearly killed when Ministry next door destroyed in first night of war - "terrifying"**
    - **Later flees Iraq via Turkey / Russia / Europe / Sweden / UK**
  - **Gulf War II - Nearly killed by car bomb in Baghdad in 2005 while mother was getting kidney transplant**
  - **Reasons why Northern Iraq works as democracy**
    - **They are Kurds first + Muslims second**
    - **Have 12 years practice under UN No Fly Zones**
  - **Reasons why Southern Iraq does not work as democracy**
    - **Are Muslims first + Iraqis second**
    - **Is a game between US + Iran with Iran paying Imams to stir up trouble**
  - **Flies into Northern Iraq every year on holiday**
  - **Used word "democracy" passionately 20 times**

Personal Case Study - Inga V.

- **Role - Child in Germany in World War II**
- **Story**
  - **Experienced bombing of Augsburg**
  - **Would never discuss the war, it was too horrible**
    "Die vergessene Generation" (The forgotten generation [of war children])

Personal Case Study - Janusz S., M.D.

- **Role - Child in Poland in 1940**
- **Story**
  - **Experienced bombing of Warsaw / watched dogfights in the sky**

  "Not neat to see! Terrifying to see!"

Personal Case Study - Detroit Riots July 23-27 1967

- **Causes of riot**
  - **Immediate - rough police raid on illegal drinking + gambling establishment**
  - **Chronic - decades of police abuse + discriminatory labor practices**
- **Results of riot**
  - **Burning + looting wiped out most commercial streets in black neighborhoods + damaged many residential areas**
    - **2,000 buildings caught fire, 43 killed, 450 injured, 7,500 arrested**
    - **Businesses + houses abandoned ~ Black middle class weakened**
  - **July 24 President Johnson calls in 8,000 National Guardsman who had been federalized along with 4,700 troops from 82nd Airborne Division**
    - **Used law that stated the President may call in armed forces whenever there is an insurrection in any state against the government**
    - **Arms included tanks + machine guns**
  - **White middle class flight to suburbs -> 40 year economic decline of Detroit**

Personal Case Study - Detroit Riots July 23-27 1967

- **Memories in Grosse Pointe Farms**
  - **4 year old child remembers the fires and parent's worries**
  - **Parents remember neighbors with firearms offering them to unarmed neighbors**
  - **Police manned roadblocks at all major streets leading into Grosse Pointe**
  - **Pair of National Guardsmen stationed at foot of street to guard former Governor / current Chief Justice of the Michigan Supreme Court G. Mennen Williams and pair of National Guardsmen at front of Henry Ford II's house**
  - **Father driving to work at hospitals in Detroit on empty freeways thinking what great time is being made on commute and forgetting you could be a sniper's target**

Class Simulation

- Civilian aspects

Poem - Civil Military Relations - What Civilians Think of the Military

We aren't no thin red 'eroes, nor we aren't no blackguards too,
But single men in barricks, most remarkable like you;
An' if sometimes our conduck isn't all your fancy paints,
Why, single men in barricks don't grow into plaster saints;
    While it's Tommy this, an' Tommy that, an' "Tommy, fall be'ind",
    But it's "Please to walk in front, sir", when there's trouble in the wind,
    There's trouble in the wind, my boys, there's trouble in the wind,
    O it's "Please to walk in front, sir", when there's trouble in the wind.

You talk o' better food for us, an' schools, an' fires, an' all:
We'll wait for extry rations if you treat us rational.
Don't mess about the cook-room slops, but prove it to our face
The Widow's Uniform is not the soldier-man's disgrace.
    For it's Tommy this, an' Tommy that, an' "Chuck him out, the brute!"
    But it's "Saviour of 'is country" when the guns begin to shoot;
    An' it's Tommy this, an' Tommy that, an' anything you please;
    An' Tommy ain't a bloomin' fool -- you bet that Tommy sees!
        - Rudyard Kipling, Tommy

Questions for Further Discussion

- **Is the conduct of war becoming more or less moral over time?**

- **What are some of the ways to improve civil-military relations?**

Reading Assignments

- **TED Talks for this Topic**
    - **http://www.warstudiesprimer.org/ToLearnMore.html**

Recommended Reading to Learn More

- **Non-fiction**
  - **Homer - The Iliad**
- **Fiction**
- **Movies**
  - **Culloden**
- **Simulations**

Conclusion

"It was horrible to think of a man so young and able dying so uselessly. In that moment Nellie found that war itself is understandable. It's the things that go along with it, things that happen to people you know, that are incomprehensible, and have been in all the ages."

- James A. Michener, Tales of the South Pacific

Topic 20

Lest We Forget

Heroism in War

Song

Onward, Christian soldiers, marching as to war,
with the cross of Jesus going on before.
Christ, the royal Master, leads against the foe;
forward into battle see his banners go!
- Sabine Baring-Gould, Onward Christian Soldiers

Thematic Quote

"For Valour"

- Victoria Cross

"Go tell the Spartans that here we lie obedient to their commands"

- Tombstone of the dead Spartans at Thermopylae

"If not me, then Who? If not now, then When?"

- Don Quixote to Sancho Panza in Man of La Mancha

Thematic Quote

"First casualty in war is the truth"
- Bud Marks

"In war, the real heroes are dead"
- Bud Marks

The Painting

Liberty Leading the People
- Eugene Delacroix
(Louvre)

The Question

What makes someone act heroically?

Definition of a Hero

- An ordinary person who performs an extraordinary act

Why Heroes Are So Humble

"Humility must always be the portion of any man who receives acclaim earned in the blood of his followers and the sacrifices of his friends."

- Dwight David Eisenhower

What is Courage

"People say the more you fight the more courageous you get. That is really not my experience. My experience is the more you fight, courage is something that drains a little bit because it takes out of you"

- General Stanley McChrystal, Commander, Joint Special Operations Command from 2003 to 2008 in talk at Pritzker Military Library on Feb. 21, 2013

On Heroism - Staff Sgt. Salvatore Giunta Medal of Honor - 1

"Most firefights go by so fast that acts of bravery or cowardice are more or less spontaneous. Soldiers might live the rest of their lives regretting a decision that they don't even remember making; they might receive a medal for doing something that was over before they even knew they were doing it. When Congressional Medal of Honor recipient Audie Murphy was asked why he took on an entire company of German infantry by himself, he replied famously, "They were killing my friends." Wars are won or lost because of the aggregate effect of thousands of decisions like that during firefights that often last only minutes or seconds. Giunta estimates that not more than ten or fifteen seconds elapsed between the initial attack and his own counterattack. An untrained civilian would have experienced those ten or fifteen seconds as a disorienting barrage of light and noise and probably have spent most of it curled up on the ground. An entire platoon of men who react that way would undoubtedly die to the last man."

- Sebastian Junger, War

On Heroism -Staff Sgt. Salvatore Giunta Medal of Honor - 2

"Giunta, on the other hand, used those fifteen seconds to assign rates and sectors of fire to his team, run to Gallardo's assistance, assess the direction of a round that hit him in the chest, and then throw three hand grenades while assaulting an enemy position. Every man in the platoon - even the ones who were wounded - acted as purposefully and efficiently as Giunta did. For obvious reasons, the Army has tried very hard to understand why some men respond effectively in combat and others just freeze. "I did what I did because that's what I was trained to do," Giunta told me. "There was a task that had to be done, and the part that I was gonna do was to link alpha and bravo teams. I didn't run through fire to save a buddy - I ran through fire to see what was going on with him and maybe we could hide behind the same rock and shoot together. I didn't run through fire to do anything heroic or brave. I did what I believe anyone would have done."

- Sebastian Junger, War

Case Study Summary - Thermopylae 480 BC

- **Goal**
  - Persians - Avenge Persian defeat at Marathon 10 years before
- **Center of Gravity (Strategy)**
  - Persians - Enslave Greek city states
  - Greeks - Fight delaying action to allow Greeks to mobilize
- **Equipment**
  - 250,000 Persians under King Xeres
  - 7,000 Greeks at Thermopylae, including 300 Spartans under King Leonidas
- **Training ~ Leadership ~ Morale**
  - Spartan tombstones read "Go tell the Spartans that here we lie obedient to their commands"
- **Tactics**
  - Greek phalanx vs. Persian foot soldiers + cavalry

- Victor Davis Hanson, History and the Movie "300", Oct 11, 2006

Case Study Summary - Thermopylae 480 BC

- **Intangibles ~ Mistakes**
  - **Greeks hold out for 2 days until betrayal which allows Persians to surround them**
  - **Spartans stay as rearguard to let rest of Greeks escape + organize their defense**
  - **Leonidas' sacrifice inspires Greeks to naval victory weeks later at Salamis and next year on land at Plataea**
  - **Evolves larger ideas of fighting for freedom against all odds**
- **Outcome**
  - **Small free people willingly outfought huge imperial army that advanced under the lash**
  - **Western idea that soldiers themselves decide where, how, and against whom they will fight vs. Eastern notion of despotism + monarchy**
    - **Western soldiers willing to die as free men rather than submit to tyranny**

- Victor Davis Hanson, History and the Movie "300", Oct 11, 2006

Case Study Summary - April 12, 1862
The First Medal of Honor The Andrews Raid

- **Goal**
  - **War not going well for North in Spring 1862 - feeling that a single bold stroke could win the war**
  - **Raiders steal train from Atlanta, take it to Chattanooga, destroy railroad behind them thus isolating Chattanooga and making it vulnerable to capture**
- **Center of Gravity (Strategy)**
  - **Confederate railroad system has limited routes + equipment**
  - **Western + Atlantic Railroad from Atlanta to Chattanooga is key rail line in South, Chattanooga is a (the?) key rail hub in South, capturing it could cripple the South**
- **Equipment**
  - **Wood burning steam locomotives - The General and The Texas reaching speeds of 60-70 mph on a line used to traffic of 16 mph**

- Russell S. Bonds, Stealing the General, Lecture at Pritzker Military Library April 25, 2009

Case Study Summary - April 12, 1862
The First Medal of Honor The Andrews Raid

- **Training ~ Leadership**
  - **Raiders - James Andrews a savvy smuggler / King of the Road with 22 men**
  - **Confederates - William Allen Fuller is train conductor**
- **Morale**
  - **Very high for both sides**
- **Tactics**
  - **Raiders**
    - **Board train in Marietta Georgia, steal it in Big Shanty Georgia at breakfast stop with no telegraph service 200 miles behind enemy lines**
    - **Keep to General's schedule to facilitate passage along single track mainline**
    - **Tear up tracks and destroy bridges behind them**
  - **Confederates**
    - **Never gave up the chase - Fuller is like Inspector Javert**

- Russell S. Bonds, Stealing the General, Lecture at Pritzker Military Library April 25, 2009

Case Study Summary - April 12, 1862
The First Medal of Honor The Andrews Raid

- **Intangibles**
  - **Raiders held up by southbound traffic on line fleeing coordinated Union attack**
  - **Raiders did not have time to destroy the railroad behind them because their pursuers in The Texas were so close**
  - **The General had only enough fuel (wood + water) to travel 33 miles**
- **Mistakes**
  - **Raiders did not destroy first locomotive they passed in a siding (Yonah) and first bridge they crossed, this locomotive was used to capture them**
  - **Raiders underestimated how slowed down they would be by southbound traffic fleeing the North's attack on Chattanooga**
  - **Raiders underestimated how difficult it was to destroy the rail infrastructure**
- **Outcome**
  - **Raiders run out of steam + captured, 8 hanged including Andrews while 14 not hanged, Raiders awarded first Medal of Honor**
  - **Story lives on in movies - The General, The Great Locomotive Chase**

- Russell S. Bonds, Stealing the General, Lecture at Pritzker Military Library April 25, 2009

Case Study Summary - The Anti-Hero: Custer's Last Stand

- **Goal**
  - **Cavalry - get Indians back on reservation ~ Indians - maintain way of life on plains**
- **Center of Gravity (Strategy)**
  - **Cavalry - engage Indians in decisive battle to destroy their nomadic logistics**
- **Equipment**
  - **600 cavalry vs. 1,500 Indians ~ Single shot rifles for cavalry vs. repeating rifles for Indians**
- **Training**
  - **Cavalry under-trained ~ Sioux + Cheyenne were warriors for life**
- **Leadership**
  - **Custer - top Civil War cavalry general ~ flamboyant**
  - **Indians had Sitting Bull for inspiration + Crazy Horse for command**
- **Morale**
  - **Cavalry was OK ~ Indians had defeated General Crook 8 days before at Battle of Rosebud + were pumped up**

Case Study Summary - The Anti-Hero: Custer's Last Stand

- **Tactics**
  - **Cavalry - Don't let Indians get away - send a force to block them + a force to flank them**
  - **Indians - Reactive**
  - **Ultimately Custer was right to attack but did it in the wrong way**
- **Intangibles**
  - **One of great weaknesses of Indians was the inability of tribes to unify against a common enemy (US) - but this battle + the Rosebud battle showed what they could do when unified - Indians did not run but stood + fought because of Sitting Bull's inspiration**

Case Study Summary - The Anti-Hero: Custer's Last Stand

- **Mistakes (In general)**
  - **Showed never ending need for reconnaissance + importance of accurate intelligence**
  - **Subordinates need to completely understand plan before action starts + communications break down**
  - **Danger of dividing your forces**
  - **Underestimating your enemy**
- **Mistakes (In specific)**
  - **Custer attacked an objective he had never seen - didn't know where it was + how big it was**
  - **Therefore he divided his regiment into 4 parts, throwing them into battle at different times with little coordination or communication between them**
  - **This allowed Indians to mass on each attack individually, ultimately annihilating them**
- **Outcome**
  - **For Indians is high point of Indian Wars; but also is a turning point that led to their ultimate defeat**

Why Do We Still Remember Little Bighorn Today?

- ## 1. Branding
  - **Custer made himself famous in Civil War, afterwards made himself a brand + kept himself in the news like Buffalo Bill Cody**
  - **After his death, Custer's wife made a career of promoting his brand + after her death Errol Flynn took over for her**
- ## 2. Racism
  - **It is the only time the Indian's won a big victory - and the white man wonders how did we lose to the red man?**

Focused Case Study: "Captain" W.E. Johns

- **1914 - Private in Kings Own Royal Regiment (Norfolk Yeomanry) Territorial Army**
- **1915 - Gallipoli**
- **1916 - Suez Canal**
- **1916 - Machine Gun Corps**
- **1917 - Greece**
- **1917 - Joins Royal Flying Corps as Second Lieutenant, learns to fly in England**
- **1918 - July - becomes RAF bomber pilot in France, by September is shot down behind enemy lines + made POW**
    - **Average life expectancy of pilot at front line = 11 days**
- **1919 - Moves to no pay Inactive list**
- **1920 - Transferred back to Active list, made recruiter in London, recruits T.E. Lawrence into RAF**
- **1921 - 1924 - Served in Iraq + India?**
- **~ 1927 - Leaves RAF, starts writing**
    - **Roger Harris, A Brief Biography of Captain W.E. Johns**

Focused Case Study: "Captain" W.E. Johns

- **Created arguably greatest British war hero of 20th Century - Biggles (James Bigglesworth) of the RAF**
  - **~ 100 books which were inspiration to many pilots to join RAF in World War II**

"In war, there is plenty of death but little glory; that in war only death is real; that glory is simply gilt and tinsel to wrap around the other so that it looks less like what it really is."

- W.E. Johns

- Roger Harris, A Brief Biography of Captain W.E. Johns

Focused Case Study:
Major Robert Crisp

"…I found I was more reluctant to show my fear than most, and this seemed to be acknowledged by those around me." (p. 3)

"Very early on in that campaign (Operation Crusader, November 1941) I learnt when to be gallant and when to be discreet, and how to employ both characteristics to the best advantage of myself. Nearly every risk had to be calculated; bravery, as far as I was concerned, became a matter of judicious discrimination and making the most of an opportunity. It is, after all, of very little use to yourself or your army to be very brave and very dead." (p. 32)

- Major Robert Crisp, Brazen Chariots

Focused Case Study - Long Range Desert Group (LRDG)

"Only men who do not mind a hard life, with scanty food, little water and lots of discomfort, men who possess stamina and initiative, need apply."

- From the initial British Army Circular, North Africa, summer 1940, seeking volunteers for what would become the Long Range Desert Group

Focused Case Study - LRDG

- **Mission - raiding + reconnaissance in enemy's rear**
- **Operations**
  - **Patrols of 5 or 6 trucks with 1 officer + 15-20 enlisted men**
  - **Entirely self contained with petrol, water, rations, ammunition, spare parts**
  - **Also conveyed spies + agents and provided transport + navigation for commando assault parties**
  - **Worked "beat-ups" against enemy airfields, motor assembly areas, convoy routes**
  - **- Steven Pressfield, Killing Rommel, p. 12**

Focused Case Study - LRDG

"Criteria for selection were less wild and wooly than one might imagine. The group was not seeking buccaneers or assassins; what its officers wanted was the solid, mature sort - the type of chap who could think for himself under pressure, work in close quarters with others, and handle extremes not only of danger but of tedium, hardship and privation. The virtues of resourcefulness, self-composure, patience, hardiness, not to mention a sense of humour, were prized as highly as those of bravery, aggressiveness, and raw martial vigour."

- Steven Pressfield, Killing Rommel, p. 12

Focused Case Study - LRDG

"Tales of heroes, the nobility of sacrifice and so forth have always made me uneasy. They run counter to my experience. From what I've seen, the operations of war are constituted less of glorious attacks and valiant defences and more of an ongoing succession of mundane and often excruciating balls-ups. The patrol of which I write, typical of so many, achieved little heroic beyond its own survival, save at the very end, and then less by military or tactical brilliance than by luck and its protagonists' stubborn, even mulish, refusal to quit. Those actions of its men that may legitimately claim the name of gallantry came about largely from attempts at self-extrication from peril, most of which we got ourselves into by our own overzealousness, and the main of which were performed either in the heat of instinct or the frenzy of bloody terror. The men who performed these heroics often could not recall them in the aftermath"

- Steven Pressfield, Killing Rommel, p. 13

Focused Case Study - LRDG

"Let me say this about courage under fire. In my experience, valour in action counts for far less than simply performing one's commonplace task without cocking it up. This is by no means as simple as its sounds. In many ways, it's the most difficult thing in the world."

- Steven Pressfield, Killing Rommel, p. 13

Focused Case Study - LRDG

"The role of the officer, in my experience, is nothing grander than to stand sentinel over himself and his men, towards the end of keeping them from forgetting who they are and what their objective is, how to get there, and what equipment they're supposed to have when they arrive. Oh, and getting back. That's the tricky part."

- Steven Pressfield, Killing Rommel, p. 13

Focused Case Study - LRDG

"What's so powerful about the desert is its timelessness…I am an ordinary Englishman, barely out of my university years. Yet here I sit, in the vastness of the African night, surrounded by companions who could have stepped from Caesar's legions or Alexander's phalanx. …Dear comrades have been slain; I myself may meet my end tomorrow. Yet this only adds to the savour of being, ourselves, still alive…The joy of this hour, of being in this place with these men, is so keen it makes my eyes smart."

- Steven Pressfield, Killing Rommel, p. 174

Focused Case Study - LRDG

"By war's end, however, I had become quite an able commander, which I define by the following criteria. First, from the point of view of my superiors, I could be counted upon to perform the mission they had assigned me, or if that was unworkable, to improvise and turn my men's exertions upon a secondary undertaking as good as or better than the first. Second, from the point of view of those serving beneath me, I had become someone they could look to for leadership and direction, who would shield them from meddling from above, and would ask no act of them that he wasn't prepared to perform himself. I provided for my men a framework within which they were freed to use their own qualities of courage, resourcefulness and tenacity."

- Steven Pressfield, Killing Rommel, p. 175

Focused Case Study - LRDG

"With this, I understand the perverse logic of war and the true tragedy of armed conflict. The enemy against whom we fight are human beings like ourselves, individuals with whom each of us might have been friends except for the deranged fictions of nation, doctrine, race and religion, and whom now we must murder (as they seek to murder us) in the name of those very same fictions. And yet, knowing all this and understanding it, still, in some depraved and ineluctable way, we and they must live it out to the bloody finish."

- Steven Pressfield, Killing Rommel, p. 24

Focused Case Study - LRDG

"Last, I must speak of the Italian soldiers we shot down that night at Benina. Over the centuries, countless warriors and thinkers, far wiser than I, have addressed the issue of morality in war and the right and wrong of taking human life. I can speak only for myself. No martial credo, however lofty or noble-sounding, will every convince me that those men were "enemy," even though I know that they were and that, had they got the chance, they would have visited upon me and my comrades the same destruction which we loosed upon them. That changes nothing. We took their lives. By willful violence ordered by me, our guns tore them from wives and children, fathers and mothers; from their country and from themselves. Rivers of tears cannot alter that fact. I have lived with it every day, every hour. Like many of my generation I did not go to war gravely and soberly, as Lao-tzu tells us a wise man ought. But I returned from it that way."

- Steven Pressfield, Killing Rommel, p. 285

Focused Case Study: Major Robert Henry Cain

- **Commanding Officer of B Company, 2nd Battalion The South Staffordshire Regiment**
  - **Landed in gliders on second lift to Arnhem, fought Sept. 19-25, 1944**
    - **Responsible for destruction or disabling of 6 tanks [4 of which were Tigers] + a number of self-propelled guns with PIAT, anti-tank guns, 2" mortar**
    - **Wounded from PIAT exploding in front of him, eardrums perforated from firing**
    - **Before withdrawal, he shaved, determined to leave looking like a British soldier, as he had "been well brought up"**
- **VC winners share one common bond once award is made**
  - **They will not talk about it as it is scant recompense for people whose lives they could not save**
  - **Major Cain left his VC in pub after receiving it from the King…and he never told his daughter about it**
- **Principal common qualities of VC winners**
  - **Humility**
  - **Selfishness - 75% were the responsible child in large family or eldest son of mother widowed early**
    - **- Jeremy Clarkson, You Won't Believe What It Takes to Get a VC Today, Sunday Times, Nov 2, 2003**
    - **- Francie Clarkson, The Jeep That Took Me Back To Dad's War, The Times, June 25, 2006**

Focused Case Study: Captain Umrao Singh VC

- **Serving as gun commander in 33 Mountain Battery Indian Artillery on Dec. 16, 1944**
  - **Gun position attacked 3 times by Japanese infantry**
    - **In first attack, he fought them off with a light machine gun**
    - **In second attack, he fought them off with a light machine gun but only he and 2 gun crew were left**
    - **In third attack he ran out of ammunition, fought them with a crowbar until overwhelmed + left for dead**
    - **6 hours later counterattack recovers his position - he is unconscious with 10 dead enemy soldiers around him, his gun is still ready to fire**
- **1983 - Retired, living on Indian Army pension of £14 / month on his farm**
  - **Friend tells him to sell his VC for £32,000 pounds, but he felt doing so "would stain the honour of those who fell in battle beside me"**
- **1995 - In London for 50th Anniversary End of World War II**
  - **In VIP stand asked English Prime Minister why pensions for VC holders were £100 / year…this sum was later increased to £1,300 / year**

  - Captain Umrao Singh VC, The Times, Nov 22, 2005

Focused Case Study:
Lt. Jerry Luptak

"Mr. Speaker, I rise today to pay tribute to Jerry Luptak, a Michigan resident, a veteran, and a hero of one of World War II's most infamous battles--the "Battle of the Bulge."

Jerry began his military career in the ROTC at Michigan State University. His group was called into duty and assigned to the 36th Infantry Division. Upon landing in Italy, he and his unit fought through southern France, advancing the Allied line.

During the Battle of the Bulge, Jerry served as a 2nd Lieutenant in the 131st Field Artillery Battalion. He was positioned as a forward Artillery Observer on a bridgehead on the German side of the river, the very front of the Allied line. From his position in the fourth floor of a building, Jerry saw the enemy advancing with an overwhelming force of troops and tanks. Thinking quickly, Lieutenant Luptak called for his fellow troops to take cover, then called in an artillery barrage on the German advance. Still exposed in his fourth floor position, Jerry put his own life in danger to give the American forces their only chance at avoiding defeat. His quick decision-making and bravery proved successful, and the artillery barrage defeated the German advance.

Lieutenant Luptak was awarded a silver star for his gallantry in action. According to his citation, Jerry "effectively directed artillery fire was of material aid in crushing enemy attacks." This battle was an important stepping stone in halting the German opposition during World War II."

- Honorable Dave Camp of Michigan, in The House of Representatives, Thursday May 23, 2013

Focused Case Study: Gunther Rall - Hero to Both Sides

- **World War II Luftwaffe 1938 - 1945**
  - Flew over 600 combat missions as squadron commander in France, England, Crete, Eastern Front, Germany
  - 275 kills, 3rd highest scoring ace ever, Iron Cross with Swords, shot down 8 times
  - Wife was Jewish physician, protected because husband a war hero
  - Met Hitler 3 times, found him more and more unhinged as war went on
  - Held by British after the war as POW, found them to be gentlemen
- **Cold War Luftwaffe 1955 - 1975**
  - Reestablished Luftwaffe, helped roll out F-104 to it
  - Became its head in 1970, became NATO staff officer in 1974
  - Honorary fellow of Society of Experimental Test Pilots

- Generalleutnant Gunther Rall, Daily Telegraph, Oct. 11, 2009
- Stephen Miller, Nazi-Era Pilot Helped Lead Germany's Postwar Military, Wall Street Journal, Oct 14, 2009

Focused Case Study - Gunther Rall - Hero to Both Sides

"When Hitler became chancellor, there was no unemployment, no more Rhineland occupation, no more reparations to the victors [of the Great War]. That impressed us as young soldiers, no doubt about it."

- Gunther Rall

(In November 1942) Rall asked Hitler: "Führer, how long will this war take?" Hitler replied: "My dear Rall, I don't know." That surprised him. "I thought our leaders knew everything," Rall recalled, "and suddenly I realized they didn't know anything."

Rall never considered himself a hero: "We fought for our country and to stay alive. We did not think about the personal nature of killing in the air. We were proud of every victory in the air, and particularly happy that we had not been hit ourselves. Of course, I tell myself in quiet moments today: 'You've killed. In order to protect others and not be killed yourself.' But in the end: for what? The Third Reich trained 30,000 pilots. Ten thousand survived the war. One-third. This is the highest loss rate along with the U-boat sailors."

- Gunther Rall

- Generalleutnant Gunther Rall, Daily Telegraph, Oct. 11, 2009

Case Study Summary - Operation Chastise (Dambusters)

- **Goal**
  - **Cripple German industry in Ruhr Valley by cutting off their hydroelectric supply and water supply to their canal system**
- **Center of Gravity (Strategy)**
  - **Breech the Ruhr dams**
- **Equipment**
  - **RAF 617 Squadron ~ Bouncing bomb**
- **Training**
  - **Used experienced crews**
- **Leadership / Morale**
  - **Scientific - Barnes Wallis ~ Operational - Wing Commander Guy Gibson**
- **Tactics**
  - **Low level attack at 60 feet ~ Search lights as altimeters ~ Bomb with backspin skips across surface of reservoir avoiding torpedo netting, hits dam wall + descends down it, exploding underwater and creating shockwave to breach the dam**
- **Intangibles / Mistakes**
  - **Heavy flak + fog**

- Leo McKinstry, Bomber Harris Thought the Dambusters' Attacks on Germany 'Achieved Nothing,' Daily Telegraph, Aug. 15, 2009

Case Study Summary - Operation Chastise (Dambusters)

- **Outcome**
  - **On May 17, 1943 19 Lancasters attacked 4 dams**
  - **2 dams (Mohne + Eder) were breached**
  - **8 planes + 53 aircrew (out of 133) were lost**
  - **Guy Gibson received the Victoria Cross**
  - **Caused tremendous flooding, cut in electrical power and water supply, damaged crops**
  - **But by June 27, 1943 German electrical grid was back at full capacity + full water output was restored**
  - **Was huge propaganda boost to British**
  - **Convinced British precise strikes could work + led to development of Tallboy + Grand Slam bombs for precise attacks on armored structures**
  - **Was the influence for the attack on the Death Star scene in Star Wars Episode 4**
  - **"The destruction of the Mohne and Eder dams was to achieve wonders. It achieved nothing compared with the effort and the loss." - Bomber Harris**
  - **"The raid was a disaster for us for a number of months." - Albert Speer**
    - **- Leo McKinstry, Bomber Harris Thought the Dambusters' Attacks on Germany 'Achieved Nothing,' Daily Telegraph, Aug. 15, 2009**

Case Study Summary - Operation Chastise (Dambusters)

"For some men of great courage and adventure, inactivity was a slow death. Would a man like Gibson ever have adjusted back to peacetime life? One can imagine it would have been a somewhat empty existence after all he had been through. Facing death had become his drug. He had seen countless friends and comrades perish in the great crusade. Perhaps something in him even welcomed the inevitability he had always felt that before the war ended he would join them in their Bomber Command Valhalla. He had pushed his luck beyond all limits and he knew it. But that was the kind of man he was…a man of great courage, inspiration and leadership. A man born for war…but born to fall in war."

- Barnes Wallis on Guy Gibson

Case Study Summary - Battle off Samar October 25, 1944

Finale of Battle of Leyte Gulf, largest naval battle in history

- **Goal**
  - **IJN - Destroy US invasion force in Philippines**
- **Center of Gravity (Strategy)**
  - **IJN - Send decoy force of IJN carriers to north of Philippines as bait to lure US 3rd Fleet carriers + battleships away from covering General McArthur's invasion force, then send large surface action group to attack invasion force**
- **Equipment**
  - **IJN - 4 battleships (including Yamato), 6 heavy cruisers, 2 light cruisers, 11 destroyers**
  - **US Taffy 3 - 6 jeep carriers, 9 destroyers, 12 destroyer escorts, 300 carrier aircraft armed for antisubmarine and ground attack work rather than antiship work from Taffy 3 + Taffy 2**
  - **IJN - optical rangefinders ~ USN - radar rangefinders**

- Ten Feet Tall and Bullet-Proof, An Interview with James D. Hornfischer, Military Book Club

Case Study Summary - Battle off Samar October 25, 1944

- **Training ~ Leadership**
  - **Admiral Kurita vs. Admiral Sprague**
- **Morale**
  - **"Small boys attack"**
  - **"The destroyer escort that fought like a battleship"**
  - **"Dammit boys, they're getting away"**
- **Tactics**
  - **US - Maximize air supremacy ~ Be bold on the surface**
- **Intangibles**
  - **IJN plan works ~ Only Taffy 1-3 (7th Fleet) are covering invasion force**
  - **IJN surface action group hits Taffy 3**
  - **Taffy 3 escort screen charges rather than retreats, breaking up IJN surface action group + Kurita loses tactical control**
  - **Japanese task force turns back**

- Ten Feet Tall and Bullet-Proof, An Interview with James D. Hornfischer, Military Book Club

Case Study Summary - Battle off Samar October 25, 1944

- **Mistakes**
  - **Why did Kurita turn back?**
    - **Thought he'd won**
    - **Taken heavy losses**
    - **Thought US transports would be empty when he got to them**
    - **Under increasing air attack**
    - **Had to fight his way back**
    - **Had one ship sunk underneath him day before**
    - **Realized he was fighting for idiots**
    - **What's the point?**

- Ten Feet Tall and Bullet-Proof, An Interview with James D. Hornfischer, Military Book Club

Case Study Summary - Battle off Samar October 25, 1944

- **Outcome**
    - **Lasted 2 1/2 hours ~ Greatest upset in history of naval warfare**
    - **IJN loses 3 heavy cruisers sunk + 3 heavy cruisers damaged**
    - **US loses 2 jeep carriers, 2 destroyers, 2 destroyer escorts**
    - **Losing Philippines cuts off Japanese oil supply**
    - **Missed opportunity for decisive battle**
    - **Taffy 3 awarded Presidential Unit Citation**
    - **Battle of Thermopylae for US Navy**
        - **US Navy "never showed more gallantry, guts, gumption" - Samuel Eliot Morison**
    - **Last major fleet engagement in history**
    - **US survivors not rescued for 2 1/2 days, many lost to shark attacks / dehydration / exposure**
    - **1 ship lost was USS Samuel B Roberts**
        - **Its namesake FFG-58 was struck by a mine in Iran-Iraq War - it had bronze plaque of names of sailors on original ship - as the crew went to battle stations they touched the plaque to bond them with their predecessors**

- Ten Feet Tall and Bullet-Proof, An Interview with James D. Hornfischer, Military Book Club

Case Study Summary - The Great Escape

- **Goal**
  - **Break 200-300 POWs out of Stalag Luft III 100 miles SE of Berlin**
- **Center of Gravity (Strategy)**
  - **Sow confusion in German rear area, divert troops to search for them**
- **Equipment**
  - **Ingenious self-made tools along with scrounged items**
- **Training**
  - **Open source warfare - all experienced (failed) escapers**
- **Leadership**
  - **Big X - took advantage of POW's civilian skills**
  - **- Paul Brickhill, The Great Escape**

Case Study Summary - The Great Escape

- **Morale**
  - **It is the duty of a POW to attempt escape**
- **Tactics**
  - **Tunneling - Tom, Dick, Harry**
- **Intangibles**
  - **They were heroes because they could have sat war out in safety**
- **Mistakes**
  - **Tunnel too short**
- **Outcome**
  - **76 men escape, 3 men make it home, 50 men executed by Gestapo**
  - **- Paul Brickhill, The Great Escape**

Focused Case Study - Medal of Honor - For Real

- **The soldier**
  - **Corporal Dakota Meyer, USMC**
- **His mission**
  - **As a member of an embedded training team in Afghanistan - "The general idea was to make friends with the villagers, provide them security, give out project money, and build relationships with the local officials"**
  - **What exactly did it mean?**
- **The ambush**
  - **Team was ambushed by Taliban in a village, Meyer was outside of village, he was denied permission to go to team's aid, also denied artillery support and air support**
- **His response**

  "I wasn't scared or angry. I was beyond that. I didn't think I was going to die; I knew I was dead. There wasn't anything I could do about it. I wasn't a thinking human being. I had gone somewhere else. I wasn't firing the machine gun; I was the machine gun. Rod wasn't driving the truck; Rod was the truck. . . . Rod and I planned to keep driving east until we were obliterated or we found my team."
- **The result**
  - **First Medal of Honor given to living Marine in a generation**
  - **He does not feel he deserves it - "As a Marine, you either bring your team home alive or you die trying. My country was recognizing me for being a failure and for the worst day of my life."**

  - James Hornfischer, A Hero's Humble Ethos, Wall Street Journal, Oct. 2, 2012

Case Study Summary - Operation Neptune Spear / Raid on Bin Laden 2011

- **Goal**
  - **Kill Osama Bin Laden (aka Crankshaft [JSOC target name], aka The Pacer, aka Geronimo [name when found]**

- **Center of Gravity (Strategy)**
  - **Fly undetected from Afghanistan to Abbottabad Pakistan to Bin Laden compound, 1 mile from Pakistan Military Academy**

- **Equipment**
  - **2 MH-60 stealth helicopters with 23 SEALs + translator + dog, Quick Reaction Force of 2 MH-47 helicopters with 23 SEALs, 3 MH-47 helicopters with supplies**
  - **RQ-170 unmanned aerial vehicle with real-time video**
  - **SEALs have silenced weapons, night vision goggles, no helmet cams, no map of inside of house**

- **Training**
  - **Elites**

- **Leadership**
  - **Obama refocused CIA on finding Bin Laden, Obama had 50% confidence that Bin Laden was there**

- **Morale**
  - **"The men in these units tended to stay. Many found it hard to adjust to anything else. The skills required were not readily applicable to other kinds of work. When you have been part of such operations-adrenaline-pumping missions in which you risk your life and good friends die; and when you enjoy the silent admiration of everyone you meet; and when you believe your work is vital to the nation's security-it is hard to find anything else that compares." - Mark Bowden**
  - **- Nicholas Schmidle, Getting Bin Laden, New Yorker, Aug 8, 2011**
  - **- Mark Bowden, The Hunt for "Geronimo", Vanity Fair, Nov. 2012**

Case Study Summary - Operation Neptune Spear / Raid on Bin Laden 2011

- **Tactics**
  - **Identify Bin Laden's courier, follow courier to him**
  - **Choices - Raid on ground vs. B-2 strike to destroy compound + possible tunnels underground but provides no DNA vs. Drone strike assassination gives you one shot but no DNA**
  - **Raid performed without knowledge + cooperation of our allies the Pakistanis in their country because we don't trust them**
  - **Raid spent 38 minutes on ground, took 15 minutes to get to Bin Laden**
- **Intangibles**
  - **No plan survives first contact with the enemy**
  - **Handling the neighborhood - "Go back to your homes a security operation is underway"**
- **Mistakes**
  - **First helicopter mushed / crashed due to "settling with power" - this is when picture was snapped in White House Situation Room (Repeat of Eagle Claw in 1980?)**
- **Outcome**
  - **9 years, 7 months, 20 days after 9/11**
  - **"For God and country-Geronimo, Geronimo, Geronimo-Geronimo E.K.I.A" (enemy killed in action)**
  - **Buried at sea**
  - **"They knew he (Obama) had staked his Presidency on this. He knew they (the SEALs) staked their lives on it."**
  - **Perspective - "Two American goals that took a decade, and more than $100 billion to achieve: 1) Walk on the Moon 2) Find Bin Laden" - Neil deGrasse Tyson**
  - **- Nicholas Schmidle, Getting Bin Laden, New Yorker, Aug 8, 2011**
  - **- Mark Bowden, The Hunt for "Geronimo", Vanity Fair, Nov. 2012**

Case Study Summary - Operation Neptune Spear / Raid on Bin Laden 2011
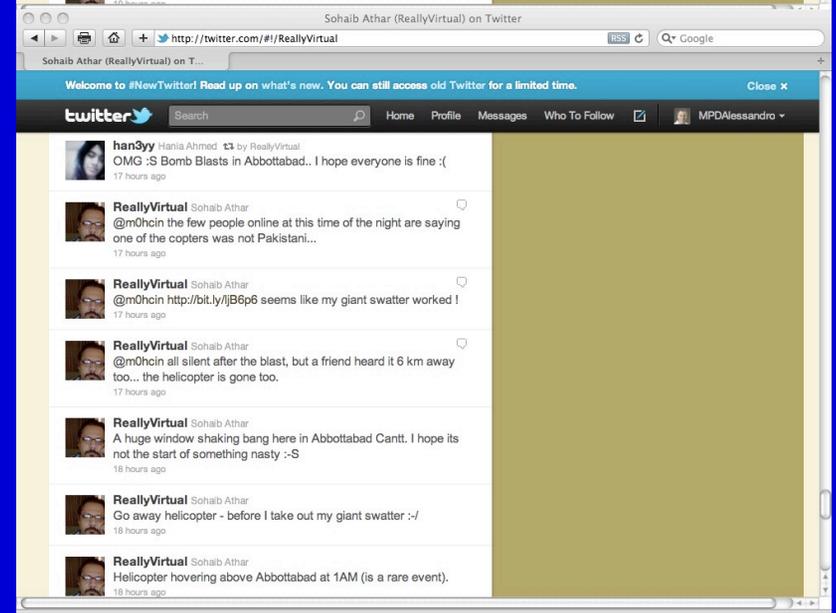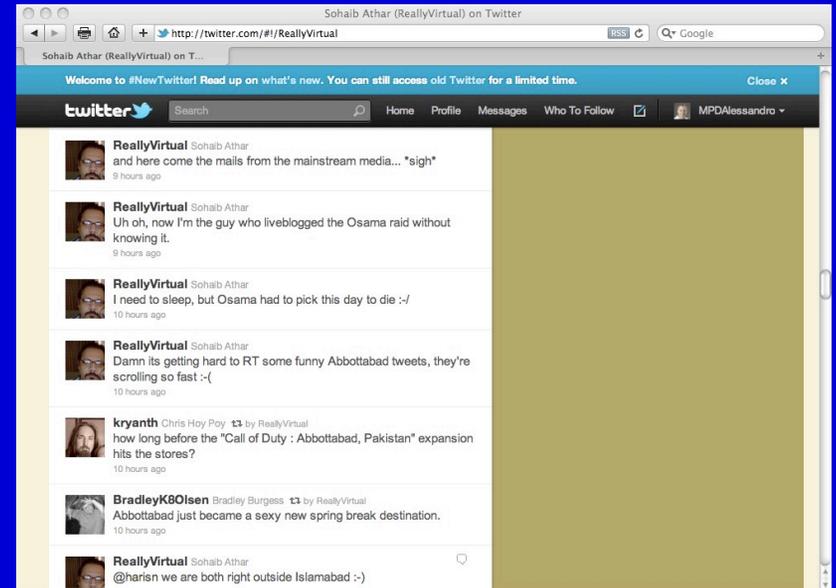
Personal Case Study - David B.

- **Role - Israeli army commando**
- **Story**
  - **Born in Morocco, moved to Israel as young man because of Zionism**
  - **Was paratrooper at 18 years old**
  - **Fought in 1967 Six-Day War in West Bank / Jerusalem**
  - **Fought in 1973 Yom Kippur War in Golan Heights - "God saved us"**
  - **Participant in Operation Jonathan July 4, 1976 at Entebbe**
    - **Idi Amin's driver in the Mercedes**
  - **Moved to Canada to be with his parents…"But now you know why I have to move back to Israel…"**

Class Simulation

- **Heroic aspects**

Poem

In Flanders fields the poppies blow
Between the crosses, row on row,
That mark our place; and in the sky
The larks, still bravely singing, fly
Scarce heard amid the guns below.

We are the Dead. Short days ago
We lived, felt dawn, saw sunset glow,
Loved, and were loved, and now we lie
In Flanders fields.

Take up our quarrel with the foe:
To you from failing hands we throw
The torch; be yours to hold it high.
If ye break faith with us who die
We shall not sleep, though poppies grow
In Flanders fields.

- John McCrae, In Flanders Fields

Poem

Silence, yes,

Let them have silence.

Call the roll of their names

and let it go at that.

To long sleep and deep silence

they have gone.

Deep among the never forgotten.

- Carl Sandburg, from the exhibition Road to Victory, 1942

Questions for Further Discussion

- **Are there really heroes in war?**
- **Can one person change the course of a war?**
- **Choose an example of heroism in war and describe why it is inspirational to you**
- **Can one be a hero to both sides in a war?**
- **Can heroes be manufactured?**
- **Can better training create more heroes? (Think Staff Sgt. Giunta, Battle of Larry, Curly, Moe)**
- **Why are so few heroes recognized today / why are so few Victoria Crosses and Medals of Honor being awarded today?**
- **Does celebrating great warriors encourage war?**

Reading Assignments

- ## TED Talks for this Topic
  - ### http://www.warstudiesprimer.org/ToLearnMore.html

Recommended Reading to Learn More

- **Non-fiction**
  - **Paul Brickhill - Great Escape**
- **Fiction**
- **Movies**
  - **Dambusters**
  - **Seven Samurai**
  - **Zulu**
- **Simulations**
  - **Arnhem - SPI**

Conclusion

"I regret I have only one life to give for my country"

- Captain Nathan Hale

Conclusion

"The Battle of Waterloo was won on the playing-fields of Eton"

- Duke of Wellington

Conclusion

"By coming here, you recall things you want to forget. I do the best I can. I come here to pay homage to these brave men...I dare not think about things too much because I would not be able to control myself. I take a deep breath. But you and I owe so much to these men who gave all they could have given on my behalf and everyone's behalf. It is so important that we acknowledge them."

- Henry Allingham, age 109, Britain's oldest WWI veteran, upon visiting comrade's graves in France in 2005

Conclusion

"We lie here, having given our lives to save all Hellas, when she stood on a razor's edge."

- Simonides on the tomb of the Corinthians who fell at Salamis

Conclusion

"Among the Americans serving on Iwo island, uncommon valor was a common virtue"

- Admiral Chester W. Nimitz, after the Battle of Iwo Jima

Topic 21

Rise and Fall (Empires)

Song

When Britain first at Heav'n's command, Arose from out the azure main;

This was the charter of the land, And guardian angels sang this strain;

Rule, Britannia! Britannia, rule the waves; Britons never shall be slaves.

The nations not so blest as thee, Shall in their turns to tyrants fall;

While thou shalt flourish great and free, The dread and envy of them all.

Rule, Britannia! Britannia, rule the waves; Britons never shall be slaves.

- James Thomson, Rule Britannia

Thematic Quote

"The fall of Empire, gentlemen, is a massive thing, however, and not easily fought. It is dictated by a rising bureaucracy, a receding initiative, a freezing of caste, a damning of curiosity - a hundred other factors"

- Hari Seldon in Foundation by Isaac Asimov

The Painting

The Course of Empire - The Savage State / The Arcadian or Pastoral State / The Consummation of Empire / Destruction / Desolation

- Thomas Cole

(New York Historical Society)

The Question

Must an empire's rise always be followed by its fall?

Life, the Universe, and Everything

- **The history of every major galactic civilization has passed through 3 distinct and recognizable phases: survival, inquiry, and sophistication - otherwise known as the how, why and where phases**

- **The first phase is characterized by the question "How can we eat?" the second by the question "Why do we eat?" and the third by the question "Where shall we have lunch?"**

- **The history of warfare is similarly subdivided though here the phases are retribution, anticipation, and diplomacy:**
  - **Retribution - I am going to kill you because you killed my brother**
  - **Anticipation - I am going to kill you because I killed your brother**
  - **Diplomacy - I am going to kill my brother and then kill you on the pretext that your brother did it**

- Douglas Adams, Hitchhiker's Guide to the Galaxy - The Primary Phase

Setting the Stage - Background Story

"Far back in the mists of ancient time in the great and glorious days of the former Galactic Empire, life was wild, rich, and on the whole, tax free. In those days spirits were brave, the stakes were high, men were real men, women were real women, and small furry creatures from Alpha Centauri were really small furry creatures from Alpha Centauri. And all dared to brave unknown terrors, to do mighty deeds, to boldly split infinitives that no man had split before. And thus was the Empire forged…"

- Douglas Adams, Hitchhiker's Guide to the Galaxy - The Primary Phase

Hollywood's View of Empire

"Historically its been gold, its been spices, its been animal pelts, its been diamonds, its been all kinds of things that have caused colonialism and imperialism…there's always some damn thing that one group needs that the other group is sitting on or has that causes them to get in a ship, go somewhere and shoot 'em - that's my thumbnail history of the last 500 years."

- James Cameron, Director, in panel on the science behind the movie Avatar

Beginning of Empire

- **When society is…**
  - **Ruled by elites who control religious + political life and accumulate wealth through taxation + tribute**
  - **Wealth spent on construction of monumental public buildings which gave legitimacy to society + its rulers**
  - **Surplus production from intensive agriculture supported craft workers + skilled specialists**
  - **Desire for materials stimulated long distance trade + development of complex exchange economies, soon made new cities dependent on each other**
  - **There was a need to keep track of agricultural production, taxation, trade**
  - **Systems of writing developed…allowing creation of bureaucracies…writing was power**
    - **- Robert Morkot, Ancient Egypt and the Middle East, p 25-27**

In the Beginning…

- **Prehistory**
  - **2 million years ago in Fertile Crescent humanity emerges in the form of hunting + gathering**
  - **10,000 years ago adoption of agriculture + domestication of plants and animals lays foundation of civilization**
    - **Stone tools extend man's physical capabilities**
    - **Pottery becomes a storage medium**
    - **Irrigation enhances agricultural productivity**
    - **Establishment of villages + permanent settlements…is first step towards civilization**
      - **- Jane McIntosh and Clint Twist, Civilizations: Ten Thousand Years of Ancient History**

In the Beginning…

- **Cities + States**
  - **5,000 years ago civilization emerges along river valleys**
    - **Tigris / Euphrates (Mesopotamia=world's first cities), Nile (Egypt), Indus / Saraswati (India), Yellow / Yangtze (China)**
    - **Cities emerge due to increasing sophistication of agriculture**
      - **Societies become more structured**
      - **Hierarchical societies led by priests / kings who are lavishly buried**
      - **Thriving crafts due to working of copper / bronze / iron**
      - **International relations develop which leads to trade and war**
        - **No history of war in Indus civilization**
      - **Creation of writing facilitates administration of state and records history and culture**
        - **- Jane McIntosh and Clint Twist, Civilizations: Ten Thousand Years of Ancient History**

In the Beginning…

- **Classical Civilization**
  - **2,500 years ago new states emerge**
    - **Greece (Athens) / Ganges Valley / China (Han) / Rome**
  - **Linked by trade on land and sea**
    - **Permits spread of wisdom / culture / new technology**
    - **Aides development of new religions, philosophy, mathematics, science, technology, arts**
  - **Trade routes turn into invasion routes**
    - **Control of sea lanes is vital**
  - **Economies depend on slaves**
    - **Jane McIntosh and Clint Twist, Civilizations: Ten Thousand Years of Ancient History**

In the Beginning...

- **Pacific Civilization**
  - **4,000 years ago move out from Solomon Islands and Philippines**
  - **2,500 years ago move out to colonize Polynesia**
    - **Jane McIntosh and Clint Twist, Civilizations: Ten Thousand Years of Ancient History**

In the Beginning…

- **New World Civilization**
  - **Civilizations in New World develop independently of Old World**
    - **4,000 years ago Woodlanders + Mesoamerica + Central Andes**
    - **2,500 years ago Teotihuacan + Monte Alba + Maya**
    - **1,000 years ago - Pueblo + Mississippians**
    - **500 years ago - Aztecs + Incas**
  - **Superb craftsmanship especially textiles + pottery**
  - **Religious practices include blood letting + human sacrifice**
    - **Encouraged warfare to obtain humans to sacrifice**
    - **Encouraged trade to obtain items used in ritual worship**
    - **Encouraged knowledge of astronomy**
  - **Sophisticated agricultural practices**
    - **- Jane McIntosh and Clint Twist, Civilizations: Ten Thousand Years of Ancient History**

The Empire is Not Our Fault, Honest!

- **Why was it the human populations of Eurasia / Europe were the ones that expanded around the world and conquered others?**
  - **Geography and environment**
    - **These populations lived in areas with greatest diversity of wild plants suitable for agriculture and wild animals suitable for domestication**
    - **Able to spend less time seeking food, these populations could spend more time specializing and developing new technologies (guns, steel) which gave them an enormous advantage when encountering other populations**
    - **Living with domesticated animals helped contribute some resistance to deadly diseases - when these populations crossed oceans with these germs they wiped out indigenous populations**
  - **Nothing to do with biological differences between populations, brains, work ethic**

      - Jared Diamond, Guns Germs and Steel

Guns, Germs, and Steel
All of Human History One Sentence Summary

"The differences among the histories of people on different continents is not due to biological differences between the people themselves but is instead due to differences in the continental environments, especially to differences in the wild plants and animals that could be domesticated."

- Jared Diamond

Why Do Civilizations Fail?

- **The important question:**
  - **What is a civilization's relationship to its climate, geography, resources, and neighbors?**
  - **…because civilizations fail when they mismanage environmental factors of their ecosystems like soil, trees, water**
- **Civilizations are not destroyed by cataclysmic events / forces outside their control / acts of god**
  - **Civilizations are not murdered…they commit suicide**
    - **They slit their wrists and stand by as they bleed to death over decades**
    - **Cultural survival is more important than biological survival**

- Jared Diamond, Collapse

Focused Case Study - Via Roman

- **Wherever it campaigned, Roman army left roads behind**
  - **One of Rome's most distinctive + decisive achievements**
  - **Of enormous strategic + military benefit**
  - **Were central nervous system of Roman administration**
  - **Designed to link command center and frontier**
  - **Via Appia in 312 BC was first**
  - **80,000 km of roads built ~ Built to last**
    - **Michael Kerrigan, Ancient Rome + The Roman Empire, p. 16-18, 23**

Focused Case Study - Via Roman

- **First and foremost a military asset that made possible military deployments where they were most needed**
    - **Mounted couriers moved 100 miles / day**
    - **Marching troops moved 30 miles / 5 hours**
- **Reserved for supplying the army**
    - **Did little for economic life of Rome**
        - **Horses too precious for heavy hauling**
        - **Large scale movements of goods must be done by sea**
        - **- Michael Kerrigan, Ancient Rome + the Roman Empire, p. 16-18, 23**

Comparison of Roman Army to US Army

- **Similarities**
  - **Both pursuing a long war against terrorism**
  - **Both militaries small, very effective, quite expensive**
  - **Both partner with local forces which were felt to be essential ~ Romans = auxiliaries ~ US = indigenous security forces**
- **Differences**
  - **Local forces raised by Romans not used locally**
  - **Romans treated allies better, gave auxiliaries a sense of shared future by offering them Roman citizenship upon completion of service**
  - **Working successfully with foreign troops an expected major part of a Roman leader's career**

- Thomas E. Ricks, Those Who Cannot Remember The Past, The Best Defense, Dec. 15, 2008

Case Study Summary - Hadrian's Wall

- **Goal**
  - **Stop expanding Roman Empire (Trajan) ~ Emphasize territorial stability (Hadrian)**
- **Center of Gravity (Strategy)**
  - **Physically mark frontier of Roman Empire**
  - **Control flow of Pictish tribes across frontier**
    - **Prevent military raids ~ Control + tax trade**
- **Equipment**
  - **80 Roman miles long ~ Took 3 legions 6 years to make**
  - **Consisted of glacis - ditch - Wall - military road - vallum**
  - **Wall made of stone or turf - 2-3 meters wide x 4-6 meters high**
  - **Fortlet each mile with dozens of troops ~ 2 turrets between each fortlet ~ 16 full sized forts on Wall each with auxiliary cohort of 1,000 men**
  - **Another 14 forts along frontier**
  - **Turf portion wall eventually converted to stone in 164**

- Nic Fields, Hadrian's Wall AD 122-410

Case Study Summary - Hadrian's Wall

- **Training ~ Leadership ~ Morale ~ Tactics**
  - **Wall not an elevated fighting platform**
    - **Narrow in width**
    - **Only place to bring troops up to Wall were fortlets each mile**
    - **No provision for enfilading fire or artillery**
  - **Wall was a barrier with excellent all around visibility**
  - **Roman army only fought behind walls as last resort**
    - **Preferred to fight in open + patrolled north of Wall**
- **Intangibles ~ Mistakes ~ Outcome**
  - **The real purpose of the Wall was to provide frontier defense through forts + frontier control through fortlets + turrets**
    - **First design of Wall separated these purposes, ultimate implementation of Wall joined them**

- Nic Fields, Hadrian's Wall AD 122-410

The Roman's Did Empire Right

- **Province is conquered + pacified**
  - **Rate of tribute established**
  - **Created urban centers at strategic points (road junctions + river crossings) to serve as collection points for goods + taxes**
    - Populated by Romans, especially discharged soldiers (Auxiliaries discharged after 25 years + given citizenship, Legionnaires discharged after 25 years + given land)
      - Distributed population out of Rome
      - Decreased risk of military coup
      - Could be called to arms in crisis
      - Created nucleus of loyalty in province
    - Became centers of local government, led to more farming + mining
    - Phil Grabsky, I Caesar: Ruling the Roman Empire

The Roman's Did Empire Right

- **Key to successful occupation - share benefits of Roman life with locals**
  - **Traders / craftsmen / merchants employed**
  - **Existing ruling class made provincial Roman aristocracy**
  - **Roman gods worshipped but local gods permitted**
  - **Use Latin language**
  - **Sons of tribal leaders given Roman education**
  - **Became more Roman than Romans**

  "…little by little the Britons were seduced into alluring vices: to the lounge, the bath, the well-laid dinner table"

  - Phil Grabsky, I Caesar: Ruling the Roman Empire

Reasons For Decline and Fall of the Roman Empire

- **Primarily**
  - **Invasion of barbarians**
  - **Growth of Christianity within Empire**
    - **Sapped faith of people in official religion, thereby undermining the state which the religion supported + blessed**
    - **Early Christians believed in imminent end of this world, put all their thoughts in the next world**
      - **Other-worldly attitude disastrous to Empire during barbarian invasions since Christians, instead of bearing arms to serve the state and the public good, concentrated on heavenly and private salvation**
  - **- Eugene YC Ho, Edward Gibbon Historian of the Roman Empire, Intellectus, Apr-Jun 1994**

Reasons For Decline and Fall of the Roman Empire

- **Secondarily**
  - **Long period of peace + uniform government**
    - **Extinguished industry + creativity of people (Chapters 2+7)**
    - **Extinguished military discipline + valour of soldiers**
  - **Indulgence in luxury - originally confined to nobles and residents of Imperial Court - later was extended to troops, totally corrupting their morals (Chapter 17)**
  - **Enrollment of mercenary barbarians in the armies, served to excuse Romans themselves from military responsibilities and encouraged barbarians within Empire to grow in power + influence (Chapter 17)**
  - **Multiplication of oppressive taxes was countered + evaded by rich who shifted burden to poor, who in turn also dodged them and fled to country to become rebels + robbers (Chapter 17)**

- Eugene YC Ho, Edward Gibbon Historian of the Roman Empire, Intellectus, Apr-Jun 1994

Reasons For the Fall of the Roman Empire

"Rome lived upon its principal till ruin stared it in the face. Industry is the only true source of wealth, and there was no industry in Rome. By day the Ostia road was crowded with carts and muleteers, carrying to the great city the silks and spices of the East, the marble of Asia Minor, the timber of the Atlas, the grain of Africa and Egypt; and the carts brought out nothing but loads of dung. That was their return cargo."

- The Martyrdom of Man by Winwood Reade (1871)

Focused Case Study - Byzantine Empire

- **Eastern Roman Empire ~ A Christian Empire**
  - **Founded 323 at city of Byzantium by Constantine I**
  - **Capital was Constantinople**
    - **Controlled waterway linking Black Sea + Mediterranean Sea so controlled trade**
    - **Defended by 14 miles of walls**
  - **Fell in 1453 - 5,000 Byzantines + 2,000 foreigners vs. 80,000 Ottomans**
    - **(Western Roman Empire) falls in 476 to Goths**
  - **Key accomplishment - saved West from Muslim Empire**
  - **Correlation to today - A bankrupt empire at war with Muslim world**

                    - Lars Brownworth, Lost to the West, 2009

Focused Case Study - Byzantine Empire

- **What was it?**
  - **Roman Empire that survived Dark Ages + kept light of classical world alive**
  - **Judeo-Christian society with Greco-Roman roots that struggled with immigration, role of church + state, dangers of militant Islam**
  - **Triple fusion of Roman body / Greek mind / mystic soul**
  - **Citizens of Eastern Roman Empire called themselves Roman from founding in 323 to fall in 1453**
    - **Scholars of Enlightenment, denied Eastern Roman Empire the name "Roman" + branded it after Byzantium - ancient name of Constantinople. "Real" Roman empire ended in 476 with abdication of last western emperor, the people in Constantinople were imposters + their history was thousand year slide into barbarism, corruption, decay**
  - **For a thousand years, it protected Europe from multiple conquerors + specifically stopped Islam from sweeping into Europe in seventh century - delayed Muslim advance into Europe for 800 years**
  - **Gave us Justinian's Roman Law + preserved Greek + Latin classics which were reintroduced to West by refugees after the fall, helping to spark the Renaissance + launch Age of Discovery**
  - **Accusations of "Byzantine" being unnecessarily complex + vaguely sinister are undeserved + untrue**

    - Lars Brownworth, Lost to the West, 2009

Focused Case Study - Byzantine Empire

- **What killed it**
  - 4th Crusade in 1203-1204 where Christians sacked it in an economic dispute leads to loss of territory, wealth, military manpower
  - Iconoclasm
  - Religious doctrinal antagonisms (Great Schism of 1054) between Church in Rome + East
  - Constantly under attack from first Persians than Muslims + Normans
  - Waxing + waning of strength based on Emperor's skills
  - Often win wars through clever diplomacy (Byzantine dealings) rather than battle
  - Themes produced solid middle class who will fight for state
  - 1071 Battle of Manzikert -> its loss leads to loss of most of Anatolia-> loss of area of most of Themes
  - Fall of the Themes leads to melting away of Army
    - Theme was district of soldier farmers who owned land + thus had stake in continued existence of state - counterbalanced great nobles / magnates who had proved to help cause collapse of West as their exploitation of populace alienated citizenry + undermined defense against barbarism
  - Theme generals attack central government -> Emperors rely on magnates to protect them with mercenary armies -> rise of magnates motivated by greed not patriotism. There was no role for majority of people in Empire
  - Turks more religiously tolerant than Crusaders - "Better the Sultan's turban than the Pope's mitre"

    - Lars Brownworth, Lost to the West, 2009

What Killed the Byzantine Empire?

"In the end, what destroyed the Byzantines was the lack of support among its peoples. The destruction of the middle class and dissolution of the thematic soldier-farmers removed the foundations for the Empire's strength. Not many people could be inspired to fight for an Empire in which aristocrats devoted most of their energy fighting to control an increasingly ephemeral supreme power. When the ruling class lost the vision that made Byzantium great, dissolution of the Empire was the inevitable result."

- Joseph Miranda, Byzantium: Empire and Disaster, Strategy & Tactics Magazine, Nov/Dec 1996

Staff Ride - Siege of Constantinople April 2 - May 29, 1453

- **Prelude - Politics - Strategy**
  - Ottoman Empire wants to capture + assume prestige of Byzantine Empire
- **Approach of armies to battlefield - Why was battle fought here**
  - Constantinople was all that remained of Byzantine Empire
- **Leaders**
  - Ottomans - Sultan Mohammed II (disliked) ~ Byzantines - Emperor Constantine XI (excellent) + Giovanni Giustiniani Longo (Genoan commander of land walls)
- **Logistics**
  - Ottomans had advance base at Adrianople to simplify their logistics ~ Byzantines short of supplies, were resupplied once by Genoese + then by Venetians after city fell
- **Weapons - Direct and indirect**
  - Urban's huge siege cannon - 27 feet long + fired 23" ball of 600 or 1,200 pounds
- **Order of Battle**
  - Ottomans - 80,000 - 100,000 troops including 10,000 Janissaries ~ Byzantines - 5,000 Greeks + 2,000 Genoese + Venetians
- **Organization - Units and formations**
  - Text
- **Command, control, communications, intelligence**
  - Text
- **Tactics**
  - Siege warfare
- **Weather**
  - Text
- **Terrain**
  - Golden Horn blocked by boom across its entrance, Tip of city unapproachable due to swift currents, Shore along Sea of Marmora unapproachable due to shoals + rocks
- **Operational**
  - Therefore Ottomans only choice was to attack 4 mile long Land Walls whose weakest point was Mesoteichion
- **Chronologic narrative of battle taking note of friction and fog**
  - Ottomans knock walls down during day with cannons, Byzantines rebuild them at night, day after day
  - Once boom was breached and Ottoman navy was in Golden Horn, final attack could be coordinated from land + sea
  - Only when Longo was wounded on walls + could no longer lead did Byzantines waver and then quickly collapse
- **Decisions - What good and bad ones were made**
  - Ottomans pull 70 ships across land behind Genoese town of Galata into Golden Horn to outflank boom
  - Europe not coming to Constantinople's defense because they thought it was impregnable, they were too busy, religious Great Schism
- **OODA loop - Who is inside the other's**
  - Smaller + more nimble Byzantines inside of Ottomans loop - Ottomans seriously debated giving up siege near its end
- **Who thought they won, who really won**
  - Ottomans, Ottomans
- **What effect did it all have - Aftermath of battle**
  - Europe lost its defense against Ottomans who were no longer contained by Byzantines and go on to invade Europe leading to further rise of Ottoman Empire

- Ralph Vickers, The Siege of Constantinople The End of the Middle Ages 1453 AD, Strategy & Tactics Magazine, January 1978 + Comer Plummer, The Walls of Constantinople, Military History Magazine, June 2006

Staff Ride - Battle of Lepanto October 7, 1571

- **Prelude - Politics - Strategy**
  - Holy League (Spain / Venice / Papal states) response to Ottoman invasion of Venetian-held Cyprus is to take action against Ottoman Navy
- **Approach of armies to battlefield - Why was battle fought here**
  - Lepanto was Ottomans naval base
- **Leaders**
  - Holy League - Don John of Austria ~ Ottomans - Ali Pasha
- **Logistics**
  - Large crews + light ships gave galley fleets short range
  - Spanish had extensive experience using its fleet for routine convoy duty, anti-corsair operations, major fleet sorties against Ottomans
- **Weapons - Direct and indirect**
  - Spanish used oar driven galleys rather than sail driven galleons, had low single deck with several men per oar + 2 sails, lightly armed with guns in bow that were aimed by aiming galley, ship to ship combat was a boarding affair
- **Order of Battle**
  - Holy League- 316 ships with 50,000 crew / galley slaves + 30,000 infantry ~ Ottomans - 338 ships with 75,000 crew / galley slaves + infantry
- **Organization - Units and formations**
  - Text
- **Command, control, communications, intelligence**
  - Holy League mixed squadrons with ships from all 3 members so no one member could gather their fleet together and run away
- **Tactics**
  - Text
- **Weather**
  - Text
- **Terrain**
  - Text
- **Operational**
  - Text
- **Chronologic narrative of battle taking note of friction and fog**
  - Holy League losses - 10 galleys sunk, 8,000 killed, 21,000 wounded, recaptured 15,000 Christian galley slaves from Ottomans
  - Ottoman losses - 60 galleys sunk, 117 galleys captured, 30,000 killed, 3,000 captured
- **Decisions - What good and bad ones were made**
  - Both sides reconnaissance + intelligence underestimated enemy's size, causing them to decide to attack
  - Holy League won because Don John's leadership held divided allied fleet together, Gian Andrea Doria removed galley's rams so bow guns could bear lower, using heavily armed Venetian galleasses in front of battle line was devastating against Ottomans, use of experienced Spanish infantry on board of all ships for boarding actions
- **OODA loop - Who is inside the other's**
  - Holy League inside Ottomans loop
- **Who thought they won, who really won**
  - Holy League won the battle, but Ottomans still held onto Cyprus
- **What effect did it all have - Aftermath of battle**
  - Stops Ottomans expansion in Mediterranean ~ Marks end of most aggressive Ottoman naval activity even tough Ottomans rebuilt their fleet rapidly after battle
  - Spain now shifts attention from Ottomans to it's empire in the Atlantic + England

- Stirling Hart, The Battle of Lepanto Spain's Defense of Mediterranean Christendom in the 16th Century, Strategy & Tactics Magazine, January 1980

Case Study Summary - Battle of Lepanto - October 7, 1571

- **Goal**
  - **Holy League (Venice+Spain+Papal States) - Hold onto Venetian Cyprus which Ottomans invaded in 1570**
  - **Ottomans - Prevent Holy League relief force from reaching Cyprus**
- **Center of Gravity (Strategy)**
  - **Holy League - Unite Catholic Southern Europe to oppose expansive Ottomans in Mediterranean Sea**
  - **Ottomans had taken Rhodes in 1522, laid unsuccessful siege to Malta in 1565, invaded Cyprus in 1570**
  - **Ottomans - Take over areas of economic interest in Mediterranean Sea + Protect coasts of parts of Europe they've conquered + Protect their shipping**
  - **Both sides had corsairs (pirates) with Ottoman pirates in Western Mediterranean + Knights of Malta pirates in Eastern Mediterranean**
  - **- The Battle of Lepanto, In Our Time, BBC, Nov. 12, 2015**

Case Study Summary - Battle of Lepanto - October 7, 1571

- **Equipment**
  - **Galley warfare - Galley is long thin ship 40 meters long + 5 meters wide which fight in lines 1 ship deep**
  - **Has sails but powered by 25 oars per side with 3-4 men / oar**
  - **1 big cannon at bow + smaller cannons at side used to kill men on deck**
  - **Are floating platforms for soldiers (100 / galley) who board enemy ships + have infantry battle**
  - **Holy League - 204 galleys + 6 galleasses (floating forts) + few small galleots**
  - **Ottomans - 180 galleys + many small galleots**
- **Training**
  - **Holy League did not know about Ottomans**
  - **Ottomans were cosmopolitan and knew about Holy League by capturing Europeans + converting them**
  - **- The Battle of Lepanto, In Our Time, BBC, Nov. 12, 2015**

Case Study Summary - Battle of Lepanto - October 7, 1571

- ## Leadership
  - ### Holy League - Don Juan of Austria - had unity of command
  - ### Ottomans - Admiral not experienced - there was disagreement over offering battle
- ## Morale
  - ### Ottomans - Had too few ships, had been at sea too long, had too few men
- ## Tactics
  - ### Engage + kill enemy
  - ### Battle line 4 miles long
  - ### - The Battle of Lepanto, In Our Time, BBC, Nov. 12, 2015

Case Study Summary - Battle of Lepanto - October 7, 1571

- **Intangibles**
  - **Christendom divided between Catholics, Orthodox, Lutherans, Reformed Protestants**
  - **Cervantes served as soldier**
- **Mistakes**
  - **Text**
- **Outcome**
  - **Galleasses devastate Ottomans**
  - **Holy League captures 117 galleys, kill 20,000, capture 3,000 prisoners, release 12,000 Christian slaves**
  - **Seen as victory for Catholic Christianity**
  - **Ottomans rebuild fleet in a year ~ Ottomans conquer Cyprus**
  - **If Ottomans had won, they would have gone on to invade Corfu and then Southern Italy**
  - **- The Battle of Lepanto, In Our Time, BBC, Nov. 12, 2015**

Focused Case Study - 1491

- **Population of Americas at time of contact**
  - **In 1910 estimate was 1.15 million ~ By 1966 estimate was 100 million (more than in Europe)**
- **What was American society like?**
  - **Agriculture extremely sophisticated**
    - **More than half of crops grown worldwide today originated in Americas**
  - **Terraformed land**
  - **Tenochtitlan as viewed by Cortes' men in 1519**
    - **Bigger than London or Paris ~ Running water ~ Clean streets**
    - **- Charles Mann, 1491, The Atlantic, March 2002**

Focused Case Study - 1491

- **What happened to them?**
  - **Decimated by epidemics brought by Europeans**
    - **Mainly smallpox ~ Many others ~ Did not understand quarantine**
    - **In first 130 years of contact 95% Americans die**
- **Examples**
  - **Incans in Peru**
    - **Smallpox arrives in 1525, 7 years before Spanish, kills 1/2 Incan population**
    - **Lets Pizarro seize empire size of Spain + Italy with 168 men**
  - **Southeast**
    - **Hernando de Soto lands in Florida in 1539 with 200 horses, 600 soldiers, 300 pigs ~ Found Mississippi Valley densely settled**
    - **La Salle covers same region in 1682 and finds Mississippi Valley deserted**
    - **Why? - de Soto's pigs brought zoonotic diseases that decimated Indians**
      - Charles Mann, 1491, The Atlantic, March 2002

Focused Case Study - 1491

- **Result**
  - **When pioneers moved westward they saw densely forested land, vast herds of bison / elk / deer and a few nomadic natives**
  - **They were seeing the result of the devastation their forebears had accidentally unleashed**
    - **There were too few Indians left to manage the land and herds**
    - **Those that were left were traumatized survivors that had no cities to live in so were nomadic**
- **Tragedy is that**
  - **European and American cultures had developed in parallel, never got the chance to cross fertilize**
    - **Charles Mann, 1491, The Atlantic, March 2002**

Focused Case Study - Cahokia

- **Mississippian civilization**
    - **4th line community - few structures around courtyard**
    - **3rd line community - several hundred people, located on stream or lake, homes around a plaza, 1 mound**
    - **2nd line community - regional center, population of thousands, impressive plaza with several mounds**
    - **1st line community - capital with many neighborhoods, plazas, permanent structures with mounds + temples, center of politics, religion, culture, art**

- Claudia Fellman Mink, Cahokia City of the Sun

- Charles Mann, 1491, pp. 259-267

Focused Case Study - Cahokia

- **Cahokia was capital of Mississippian people, only known 1st line community in North America**
  - **Thrived from 800 - 1300 AD**
  - **Numbered 20-40,000 inhabitants**
    - **In 1000 AD, larger than London**
    - **Largest city in North America until Philadelphia exceeds it in population in 1800**
  - **At center of 4 ecozones and confluences of 3 rivers**
  - **Population mainly farmers with few craftsmen and merchants**
  - **Monumental architecture**
  - **No written language**
  - **Role of human sacrifice**

- Claudia Fellman Mink, Cahokia City of the Sun

- Charles Mann, 1491, pp. 259-267

Focused Case Study - Cahokia

- **What happened to it?**
    - **River was diverted to provide more water for city and easier access to logging -> flooding of crops**
    - **Climate change -> shorter growing seasons -> decreased corn production**
    - **Exploitation of land + forests -> elimination of habitats for animals + plants used for food**
    - **Malnourishment due to high carbohydrate diet led to many medical problems**
    - **Worsening situation -> increased government control over society -> rebellion -> dispersal of population to better environments**

- Claudia Fellman Mink, Cahokia City of the Sun

- Charles Mann, 1491, pp. 259-267

Focused Case Study - Rise + Fall of Polynesian Culture

- **Was Neolithic culture (no metal working) but…**
- **From their cultural cradle near Samoa + Tonga, Polynesians explored and successfully settled larger area of Earth's surface than anyone before them**
  - **From central Polynesia to South America**
- **Agriculture included massive irrigation systems + aquaculture**
- **Artistic achievements - tattoo, hula, surfing**
  - **McPartland K, Conquest of Paradise**

Focused Case Study - Rise + Fall of Polynesian Culture

- **Thousands of years before Europeans, Polynesians mastered technical + material challenges of extended seafaring**
  - **Lateen sail, double hulled canoe, celestial navigation**
  - **Voyages of exploration more successful than Europeans because they knew what diets would keep them healthy at sea and avoid scurvy**
- **Voyages of colonization very successful - Became experts at managing their transported landscape**
  - **Brought plants for food + fiber - bananas, coconuts, sweet potatoes, taro, paper mulberry, breadfruit, kava**
  - **Brought dogs, pigs, chickens, rats**
    - **McPartland K, Conquest of Paradise**

Focused Case Study - Rise + Fall of Polynesian Culture

- Survival at sea on voyages of ocean exploration depends upon character of preembarkation health, adequate supplies of clean water, food of adequate quantity and quality, protection from the environment, a high standard of hygiene and discipline, the intelligent anticipation of health hazards, accident prevention and skilled care of the sick and injured, and duration of the voyage

- Problems Europeans faced on their long sea voyages: they were not healthy to begin with, they did not take the right provisions to prevent scurvy, their water was contaminated, and they had poor hygiene

- Polynesians were successful on their long sea voyages because they were healthy to begin with, they took the right provisions (high fiber and fruit diet), they had fresh water, and they had good hygiene

- Watt J. Voyaging to New Zealand: The Medical Challenge. Aust N Z J Surg 1991; 61; 147-150

Focused Case Study - Rise + Fall of Polynesian Culture

- **Projected + sustained common language, culture + livelihood to vast, inter-linked realm of archipelagos + islands**

- **Then came contact with Europeans - Captain James Cook in 1778**

- **What happened next?**
  - **Guns, germs, and steel**

Age of Exploration to Age of Exploitation

- 1250 - Europe begins trading over land with Far East for silks + spices ~ "Silk Road"
    - Lasts 100 years, then land routes blocked due to unrest from rise of Ottoman Empire
- 1415 - Europe (Portuguese) starts to look for sea route to Far East => Leads to Age of Exploration
- Age of Exploration aided by
    - 1442 - Development of caravel
        - 65 feet long, 2-3 masts, 2-3 sails, allows longer difficult voyages
    - 1455 - Gutenberg's development of moveable type
        - Knowledge could be spread widely + quickly
    - 1475 - First European printing of Ptolemy's Guide to Geography stimulated interest in exploration
- Timeline
    - 1492 - Cristoforo Colombo reaches West Indies
    - 1498 - Vasco da Gama reaches India
    - 1519 -1522 - Ferdinand Magellan circumnavigates globe
    - Betsy+Giulio Maestro, The Discovery of the Americas

Focused Case Study - Spice Trade

- **Competition between Dutch East India Company and British East India Company for control of spice islands in South East Asia**
  - **Spices are extremely valuable commodity for flavor, food preservative and medicinal purposes**
    - **Markup on nutmeg = 60,000% due to its rarity**
  - **Nathaniel Courthope of British East India Company holds onto nutmeg-producing island of Run against overwhelming odds for 5 years until he is murdered by Dutch in 1620 and Dutch claim the island**
- **In Treaty of Breda between Dutch and English to settle Second Anglo Dutch War in 1667, English are given Dutch colony of New Amsterdam / Manhattan as compensation for Run**

    - Giles Milton, Nathaniel's Nutmeg

Case Study Summary - English East India Company (EEIC) 1600-1833

- **Goal**
  - **Monopolize English trade in Asia + Pacific**
- **Center of Gravity (Strategy)**
  - **It's the economy stupid - increase trade to increase Royal customs revenues - aid traders in any way**
- **Equipment / Training / Leadership / Morale**
  - **5% of voyages end in disaster ~ Problems = disease, drinking, diet**
- **Tactics / Evolution of Cargoes + Competitors**
  - **1600-1684 - Cloves + Nutmeg - Compete with Dutch in Spice Islands who outspend + outmaneuver EEIC by seizing control of sources of production**
  - **1685-1795 - Pepper - Compete with Dutch in Spice Island but EEIC turns the tide**
  - **1600's - Textiles - Compete with Portuguese in India, EEIC begins to build forts in India**
  - **1650's - Coffee - From Mokha in Yemen, leads to coffee house craze**
  - **1700's - Silk textiles, tea, porcelain - From China**

- Anthony Farrington, Trading Places: The East India Company and Asia 1600-1834

Case Study Summary - English East India Company (EEIC) 1600-1833

- ## Intangibles
  - ### Willing to enforce their concept of free trade with guns
  - ### By 18th century EEIC is largest employer in London
  - ### By 1813 customs duty on tea from China = 10% British government revenue
- ## Mistakes
- ## Outcome / From Trade to Empire
  - ### 1750 - Mughal Empire collapses in India ~ EEIC becomes player in power politics between new regional states
  - ### EEIC raises own army ~ Treaty of Allahabad gives Mughal recognition to EEIC control over Bengal ~ British Raj begins
  - ### EEIC forms more armies which are assisted by British Army units paid for by EEIC
  - ### Whole economic structure of India comes to serve needs of EEIC
  - ### 1813 - Monopoly of Asian trade limited to China, abolished in 1833
  - ### 1857 - Revolt of EEIC Bengal Army (Indian Mutiny) leads to EEIC abolishment in 1858, British Crown assumes mantle of British Raj

- Anthony Farrington, Trading Places: The East India Company and Asia 1600-1834

British Empire

- **Spain was world superpower for 100 years before British**
  - **Spanish empire was based on plunder of minerals**
  - **British Empire begins with British buccaneers / privateers stealing from Spain**
  - **British invested their plunder in cultivation of sugar in Caribbean**
  - **British went to India to trade for fabric at same time Spanish are plundering Americas**
    - **At time, Indian economy was 10 x British economy**
- **Dutch East India Company more powerful than British East India Company so in 1688 William of Orange invited to invade England by English aristocrats and City of London Merchants**
  - **Glorious Revolution was Anglo-Dutch business merger**
  - **Gave Britain a Dutch-style stock exchange + central bank (Bank of England formed in 1694)**

- Niall Ferguson, Empire How Britain Made the Modern World

British Empire

- **British East India Company**
  - **Starts forming its own army, becomes a government with taxation powers**
  - **French are the main competitors to it**
  - **British orders naval buildup**
    - **Financed by bonds**
    - **Creation of ships drives British economy**
    - **Leads to English victory in Seven Years War through world wide blockade**

- Niall Ferguson, Empire How Britain Made the Modern World

British Empire

- **Foundation of empire (along with commerce + conquest) was mass migration of whites around world**
  - **Cheap land was key as was slavery**
  - **3 times as many black slaves came to Americas as did white migrants**
  - **Colonize America, then Australia**
  - **Durham Report was white colonists Magna Carta**
    - **Allowed white colonists to be governed by their own representative governments**

- Niall Ferguson, Empire How Britain Made the Modern World

British Empire

- British seized power in Asia and land in America
  - Natives were taxed or robbed or wiped out
  - But Victorians wanted to redeem world, wanted to bring light to dark continent of Africa
  - Export Christianity - spread God's word + save souls of heathens
    - New nonprofit rationale for expanding British influence
      - Missionary societies = Victorian aid agencies giving spiritual and material assistance to less developed world
      - Commerce produces civilization, and civilization produces Christianity
    - Start with trying to convert Africans
      - Today there are more Christians in Africa than Europe
    - Then in 1813 try to convert Indians
      - Want to Anglicize Indian culture + convert them to Christianity
      - Leads to clash of civilizations - Indian Mutiny 1857

- Niall Ferguson, Empire How Britain Made the Modern World

British Empire

- **British go from buccaneers -> traders -> soldiers -> rulers**
  - **For 200 years British Empire ruled 1/4 of world's people + 1/4 world's land**
  - **Telegraphy, railway, steamship were iron network that shrunk the world and made British control of it complete**
    - **Cartography was key**
    - **So was cooperation of locals to help administrate**
    - **Country first, self second**

      "Play up! Play up! And play the game!"

- Niall Ferguson, Empire How Britain Made the Modern World

British Empire

- **Often failed to live up to its rhetoric on liberty yet in 19th Century British Empire**
  - **Pioneered abolition of slavery**
  - **Invested in modern global communications network**
  - **Forced rule of law over vast areas**
  - **Maintained global peace**
  - **And in 20th century faced with appeasing or confronting worst empires in all history**
    - **British Empire fought and sacrificed itself to defeat Germans and Japanese**

- Niall Ferguson, Empire How Britain Made the Modern World

British Empire

- **Pillars of Modern World Owed to British Empire**
  - **Single capitalist economy / Free market capitalism in so many countries**
  - **Protestantism spread**
  - **English as world language**
  - **Western norms of law, order, government (parliamentary democracy)**
    - **Parliamentary democracy yardstick by which all political systems judged**

- Niall Ferguson, Empire How Britain Made the Modern World

British Empire

- **Took 300 years to build ~ 30 years to dismantle**
  - **Britain's imperial wealth based on**
    - **Commercial + financial supremacy in 17th+18th centuries**
    - **Industrial supremacy in 19th century**
  - **In 20th Century was exhausted by cost of global conflict**
    - **WWI ate Empire's savings**
    - **WWII created huge debt for Empire**
- **Niall Ferguson, Empire How Britain Made the Modern World**

British Empire

- **America's Empire   vs.   British Empire**
  - **Multinational corporations   Imperial trading companies**
  - **Christian evangelists   Missionaries**
  - **Hollywood   Royal pageantry**
  - **Gunboat diplomacy by air   Gunboat diplomacy by ship**
- **Opponents of both are cultural conservatives fighting forces of globalization**
  - **Globalization = integrated world economy under English speaking leadership**
- **But Americans don't export capital or people and are not comfortable with idea of empire**

- Niall Ferguson, Empire How Britain Made the Modern World

Words to Live By

"We have no eternal allies, and we have no perpetual enemies. Our interests are eternal and perpetual, and those interests it is our duty to follow."

- Lord Palmerston, 1848

British Approach to Empire

- **British were successful at establishing**
  - **Market economies**
  - **Rule of law**
  - **Transition to representative government**
- **Policy mix favored by Victorian imperialists**
  - **Free trade**
  - **Balanced budgets**
  - **Sound money**
  - **Common law**
  - **Incorrupt administration**
  - **Investment in infrastructure funded by international loans**

  - Niall Ferguson, The Empire Slinks Back, New York Times Magazine, April 27, 2003

British Approach to Empire

- **British regarded long term occupation as part of their civilizing mission**
  - **British rule ends once country becomes civilized / anglicized - to ensure continued rule of law and operation of free markets**
    - **Means decades not days**
    - **Had no exit strategy**
    - **Only question: Whether to rule directly through governor, or indirectly with Secretary advising local puppet**
- **Fundamental weakness at heart of new American imperialism is its chronically short time frame**

    - Niall Ferguson, The Empire Slinks Back, New York Times Magazine, April 27, 2003

British Approach to Empire

- ## So British did "go there"
  - ### "Men on the spot" were intermediaries between imperial authority and indigenous elites
  - ### You can't have an empire without imperialists out there on the spot running it
- ## Crucial character trait without which whole imperial project is doomed is stamina
  - ### US lacks it - Why?
    - #### 4 year election cycle
    - #### Young elites not interested in being recruited to run American Empire - they have no desire to "go there"
  - ### - Niall Ferguson, The Empire Slinks Back, New York Times Magazine, April 27, 2003

US Empire

- **There are close resemblances between US position in world today and British Empire's a century ago**
  - **US Empire is natural descendant of British Empire…but Americans resist these comparisons**
- **What they have in common**
  - **Wealth**
  - **Military power**
  - **Ability to project their own culture - soft power**
    - **…US is greater in every way than British were**
  - **- Niall Ferguson, Is the US an Empire in Denial? Lecture to Foreign Policy Association, September 17, 2003**

US Empire

- **Yet US is remarkably ineffectual empire**
  - **Why? Because US has three deficits**
    - **1. Financial deficit: Britain was exporter of capital ~ US is importer of capital due to fiscal deficit**
    - **2. Manpower deficit: Britain was exporter of people to build empire ~ US is importer of people and Americans are unwilling to do nation building**
    - **3. Attention deficit: Britain was in it for the long run ~ US has attention deficit - There is no long term stability without long term commitment**
- **Empires cannot be based on coercion**
  - **They are fundamentally based on the consent and collaboration of local elites**
  - **- Niall Ferguson, Is the US an Empire in Denial? Lecture to the Foreign Policy Association, September 17, 2003**

Focused Case Study - Empire of the English-Speaking Peoples

- **English speaking peoples emerged in 19th + 20th centuries as world's principal tribunes of liberty**
  - **Britain, Canada, Australia, New Zealand, US**
  - **Differences that separate them outweighed by commonalities of outlook + temperament**
    - **"Law, language, literature - these are considerable factors. Common conceptions of what is right and decent, a marked regard for fair play, especially to the weak and poor, a stern sentiment of impartial justice, and above all a love of personal freedom." - Winston Churchill**
- **Today**
  - **8 of 10 largest business in world are US, other 2 are British**
  - **English-speaking peoples account for 7.5% of world's population, but their economies produce > 33% global GDP**
  - **Military might + cultural reach dwarf rivals**
  - **English language is intellectual global currency**

- Roger Kimball, Great Yet Gloriously Earth Bound, Wall Street Journal, Feb 2, 2007 (Review of A History of the English Speaking Peoples Since 1900 by Andrew Roberts)

Focused Case Study - Empire of the English-Speaking Peoples

- **How did Britain triumph over French, Russian, German empires?**
  - **"The fact that the North American's speak English" - Bismarck**
    - **…and the US was ascendant**
- **Four great assaults on the political liberty championed by English-speaking peoples**
  - **Prussian militarism of WW I**
  - **Axis totalitarianism of 1930s + 1940s**
  - **Soviet communism of Cold War**
  - **Radical Islam of today**
    - **In every case, West was slow to respond + suffered serious setbacks in early engagements**

- Roger Kimball, Great Yet Gloriously Earth Bound, Wall Street Journal, Feb 2, 2007 (Review of A History of the English Speaking Peoples Since 1900 by Andrew Roberts)

Decline of The West - Commonalities Between Rome 331 + America / Europe 2006

- **West = distinctive complex of beliefs + institutions that originated with Greeks, planted across Europe by Romans, embraced Christianity under Constantine, crossed to New World with Columbus**

- **Gibbon attributed decline of Rome to**
  - **External overreach / military overstretch**
  - **Internal corruption / inner decadence**
  - **Religious transformation / conversion**
  - **Barbarian invasion**

- **West is in decline** (Washington DC = Rome + Brussels = Constantinople)
  - **America suffers from military overstretch + inner decadence**
  - **Europe suffers from religious conversion + barbarian invasion**

- **True narrative arc of 20th century is not "the triumph of the West" but rather the relative "decline of the West" and the "rise of the East"**

- Niall Ferguson, Empire Falls, Vanity Fair, Oct. 2006

The Once and Future West

- **In 1500 the West controlled 10% of world population and 40% of its wealth**
  - **By 1913 the West controlled 60% of world population and 80% of its wealth**
- **Why, after 1500 did warring kingdoms of Western Europe take over the world and dominate it culturally, politically and economically?**
  - **Why did Eastern civilizations of Mughal India, Ottoman Empire, Ming China underperform geopolitically + economically?**
- **In the 21st century, is the West doomed?**
  - **Or is it triumphant as the East adopts its ways?**

Rise of the West

- **What gave the West the edge over the East over the last 500 years? 6 killer apps:**
    - **1. Capitalist enterprise**
    - **2. Scientific method**
    - **3. Legal + political system based on private property rights and individual freedom**
    - **4. Traditional imperialism**
    - **5. Consumer society**
    - **6. "Protestant" ethic of work + capital accumulation in ends in themselves**

- **China has replicated 1+2, is adopting 4+5+6 with Confucian modifications**
- **Question is whether China needs 3 to achieve enduring prosperity…**
- **Niall Ferguson, The Decade the World Tilted East, Financial Times, Dec 27, 2009**

Rise of the West (Revised)

- **West's 6 killer apps that were the key reason for its ascendency that the Rest lacked:**
  - **1. Competition - Europe was politically fragmented, within each monarchy or republic were multiple competing corporate entities**
  - **2. Scientific Revolution - All major 17th century breakthroughs in math / astronomy / physics / chemistry / biology happened in Western Europe**
  - **3. Rule of law + Representative Government - The optimal system of social + political order emerged in English speaking world, based on property rights + representation of property owners in elected legislatures**

    - Niall Ferguson, In China's Orbit, WSJ, Nov 18, 2010

Rise of the West (Revised)

- 4. Modern Medicine - All major 19th + 20th century advances in healthcare made by Western Europeans + North Americans

- 5. Consumer Society - Industrial Revolution took place where there was supply of productivity enhancing technologies + demand for more better / cheaper goods - beginning with cotton clothes

- 6. Work ethic - Westerners amongst first persons to combine more extensive + intensive labor with higher saving rates, permitting sustained capital accumulation

- **Rise of Rest begins with Meiji Emperor in Japan 1867-1912**

    - Niall Ferguson, In China's Orbit, WSJ, Nov 18, 2010

Rise of the West (Final Draft)

- 1. Competition: a decentralization of political and economic life, which created the launch pad for both nation states and capitalism.

- 2. Science: a way of understanding and ultimately changing the natural world, which gave the West (among other things) a major military advantage over the Rest.

- 3. Property rights: the rule of law as a means of protecting private owners and peacefully resolving disputes between them, which formed the basis for the most stable form of representative government.

- 4. Medicine: a branch of science that allowed a major improvement in health and life expectancy, beginning in Western societies, but also in their colonies.

- 5. The consumer society: a mode of material living in which the production and purchase of clothing and other consumer goods play a central economic role, and without which the Industrial Revolution would have been unsustainable.

- 6. The work ethic: a moral framework and mode of activity derivable from (among other sources) Protestant Christianity, which provides the glue for the dynamic and potentially unstable society created by apps 1 to 5

How To Put Your Empire At Risk

- **An empire's ability to manage its finances is closely tied to its ability to remain the predominant global military power**
  - **Through history, major financial crises are followed by major fiscal crises**
  - **Imperial decline begins with debt explosion that ends with reduction in resources available for armed forces**
    - **Habsburg Spain defaulted on all or part of its debt 14 times between 1557-1696**
    - **Prerevolutionary France spent 62% of royal revenue on debt service in 1788**
    - **Ottoman Empire's interest payments + amortization rose to 50% of budget by 1875**
    - **British Empire between World War I and World War II was spending 44% of its budget on interest payments**

- Niall Ferguson, An Empire At Risk, Newsweek, Nov. 28, 2009

The Fall of Empire

"…empires do not in fact appear, rise, reign, decline and fall according to some recurrent and predictable life cycle. It is historians who retrospectively portray the process of imperial dissolution as slow-acting. Rather, empires behave like all complex adaptive systems. They function in apparent equilibrium for some unknowable period. And then, quite abruptly, they collapse."

- Niall Ferguson, America the Fragile Empire, Los Angeles Times, Feb. 28, 2010

The Degeneration of Empire According to Niall Ferguson

- **Western civilization has entered a period of decline due to strangling of private initiative by ever-encroaching state**

- **Threatened institutions are representative government, free market, rule of law, civil society which are threatened by**

  - **Explosion of public debt = "betrayal of future generations: a breach of Edmund Burke's social contract between present and the future"**

  - **Destruction of markets by excessive regulation**

  - **Replacement of "rule of law" by "rule of lawyers"**

  - **Decaying civil society due to decline of thousands of private, voluntary organizations that contribute to social order + progress as "the state - with its seductive promise of 'security from the cradle to the grave' - was the real enemy of civil society"**

- George Melloan, A Jeremiad to Heed, Wall Street Journal, June 19, 2013

Personal Case Study - Captain Richard B, M.D.

- **Role - US Navy Flight Surgeon - Marine One**
- **Story**
  - **Escorted President Reagan on Far Eastern tour with stop over on small Pacific Island that Nancy Reagan wanted to see**
  - **Was told if he needed to use a phone, there was a phone jack newly installed under a palm tree on the airfield**
    - **He plugged into it and got the White House switchboard**
    - **That to him was the essence of the power of the US empire**
  - **Later became an astute military political navigator**

Class Simulation

- **Empire aspects**

Poem

They're changing guard at Buckingham Palace -
Christopher Robin went down with Alice.
Alice is marrying one of the guard.
"A soldier's life is terrible hard,"
                                    Says Alice.

They're changing guard at Buckingham Palace -
Christopher Robin went down with Alice.
We saw a guard in a sentry-box.
"One of the sergeants looks after their socks,"
                                    Says Alice.

They're changing guard at Buckingham Palace -
Christopher Robin went down with Alice.
We looked for the King, but he never came.
"Well, God take care of him, all the same,"
                                    Says Alice.
- Alan Alexander Milne, Buckingham Palace

Questions for Further Discussion

- **What is an empire?**

- **What are the conditions that favor the rise of an empire?**

- **What are the conditions that favor the fall of an empire?**

- **Who has empires today?**

- **Define the roles and relationships of the US / British / French / Russian / Chinese empires today**

- **Is the US an empire?**

- **Should the US be an empire?**

- **Can the US be an empire / Does the US have the resources?**

- **How should the US empire be run?**

- **What mistakes does the US empire make?**

- **Is Iraq the American Syracuse?**

- **Compare and contrast the decline of the Roman Empire with the state of the US empire today according to Seldon, Gibbon, Ferguson**

- **How did the small warring kingdoms of Europe in 1500, which looked so feeble compared to the Ottoman and Ming empires, get to be so powerful?**

Reading Assignments

- **TED Talks for this Topic**
  - **http://www.warstudiesprimer.org/ToLearnMore.html**

Recommended Reading to Learn More

- **Non-fiction**
  - **Byron Farwell - Mr. Kipling's Army**
- **Fiction**
  - **Isaac Asimov - Foundation Trilogy**
- **Movies**
  - **Battleship Potemkin**
  - **Dr. Zhivago**
  - **Nicholas and Alexandra**
  - **Star Wars**
- **Simulations**
  - **Age of Empires - Macintosh**
  - **Civilization Revolution - Nintendo DS**

Conclusion

"Fools say that they learn from experience. I prefer to learn by other people's experience."

- Bismarck

Conclusion

"When the mind of man ceases to thrust outward, it begins to contract and wither. So with civilizations.

In the fifteenth century Spain and Portugal established new worlds and divided continents between them, but in the sixteenth century they faltered in their willingness to pursue vast goals, and one might say they withered intellectually and even economically. They allowed other nations to take up the joyous burden of developing new ideas, and from this decline they never recovered.

I am terribly afraid that in America's reluctance to proceed with the exploration of space we are making the Portugal-Spain error. It is not enough to initiate an action. One must also develop it to its ultimate capabilities."

- Stanley Mott in Space by James Michener, p. 779

Conclusion -
The Dark Side of Empire

"Plunder, butcher, rapine, these things they misname empire: they make a desolation and call it peace."

- Calgacus, one of the Caledonii leaders who faced the Romans at Mons Graupius in AD 83

Conclusion
Always Look on the Bright Side of Life

"All right…but apart from the sanitation, the medicine, education, wine, public order, irrigation, roads, a freshwater system and public health…what have the Romans ever done for us?"

- John Cleese as Reg in "Monty Python's Life of Brian"

Topic 22

Future Wars and Geopolitics

Song

…I found out every trick in the book
and that's there's only one way to get things done
I found out the only way to the top
is looking out for number one
I mean you keep looking out for number one
That's us keep looking out for number one
That's me I'm looking out for number one

- Bachman Turner Overdrive, Looking Out For Number One

Thematic Quote

"Political agreements close chapters of the past. Economic agreements open chapters in the future"

- Condoleezza Rice

Thematic Quote

"In the cold war, you knew who the enemy was; you knew his kit; you knew his doctrine; you knew his training. All you had to do was to play the music, set down in notation and conducted from the front. Now there's a constantly moving kaleidoscope, and you have to improvise. War used to be like symphony music - now it's like jazz."

- Air Marshal Brian Burridge, commander of the British forces in the Gulf in 2003

The Painting

Romance of Discovery
- N.C. Wyeth
(National Geographic Society)

The Question

How do you provoke a war?

How do you avoid a war?

The Fate of the State

- **State born at the Treaty of Westphalia - 1648**
- **Today**
  - **Ability to fight other states is declining**
  - **Rise and fall of welfare state**
  - **Effects of modern technology/economics/media**
  - **Ability to maintain public order is declining**
- **Therefore the State is dying**
  - **States are combining into larger ones or falling apart**
  - **Organizations that are not states are taking their place**

        - Martin Van Creveld, The Fate of the State

Through a Glass, Darkly

- **Development of war 1000-1945**
  - **Progressive consolidation of war in political, economic, military, technological spheres**
- **Impact of nuclear weapons**
  - **Link between victory and preservation of your political organization was cut**
  - **Rise of deterrence**
  - **Where nuclear weapons appear, interstate warfare is abolished**
  - **Size of regular forces decreasing due to high cost of weapons and increasing lethality**
  - **Interstate wars are on the retreat**

                    - Martin Van Creveld, Through a Glass, Darkly

Through a Glass, Darkly

- **Rise of intrastate war**
    - **Each time modern, heavily armed, regular, state-owned forces took on insurgencies, they lost**
    - **Most modern components of armed forces are of least use in combating insurgencies**
    - **Rise of terrorism**
    - **Use of armed violence - the most important function of the state - will again be shared out amongst other entities**
    - **17th century bargain - state offered citizens much improved day to day security in return for their willingness to sacrifice themselves if called upon - coming to an end**

                    - Martin Van Creveld, Through a Glass, Darkly

Through a Glass, Darkly

- **Future**

  "To sum up, the roughly three-hundred-year period in which war was associated primarily with the type of political organization known as the state-first in Europe, and then, with its expansion, in other parts of the globe as well-seems to be coming to an end. If the last fifty years or so provide any guide, future wars will be overwhelmingly of the type known, however inaccurately, as "low intensity." Both organizationally and in terms of the equipment at their disposal, the armed forces of the world will have to adjust themselves to this situation by changing their doctrine, doing away with much of their heavy equipment and becoming more like the police. In many places that process is already well under way."

  - Martin Van Creveld, Through a Glass, Darkly

The Changing State

"We are at a moment in world affairs when the essential ideas that govern statecraft must change. For five centuries it has taken the resources of a state to destroy another state: only states could muster the huge revenues, conscript the vast armies, and equip the divisions required to threaten the survival of other states. Indeed posing such threats, and meeting them, created the modern state. In such a world, every state knew that its enemy would be drawn from a small class of potential adversaries. This is no longer true, owing to advances in international telecommunications, rapid computation, and weapons of mass destruction. The change in statecraft that will accompany these developments will be as profound as any that the State has thus far undergone."

- Philipp Bobbitts, The Shield of Achilles, p xxi

The Future of War

"War, as most cognitively known to most noncombatants, war as battle in a field between men and machinery, war as a massive deciding event in a dispute in international affairs: such war no longer exits"

- General Rupert Smith, The Utility of Force, 2005

Future of Geopolitics

"The idea of sovereignty being based on geographic borders is old think. You couldn't define China by its borders no more than you could define the US by its physical geographic borders. We have to change that mentality and we're fighting organizations that have no borders, have no capitol, so that kind of thinking has to go out the window."

- General Anthony Zinni

The Coming Anarchy

- **Scarcity, crime, overpopulation, tribalism, disease are destroying the social fabric of the planet**

  - Robert Kaplan, The Coming Anarchy, The Atlantic Monthly, February 1994

Fighting for the Future

- **Failed state is on the rise**
- **Fiction of national borders**
  - **Department of State can only deal with symmetrically structured like minded entities**
- **Rise of the warrior**

  "Erratic primitives of shifting allegiance, habituated to violence, with no stake in civil order"
- **Increase in amount of urban warfare**
- **US military ill-prepared for this future**
  - **Ralph Peters, Fighting for the Future: Will America Triumph?**

Global Trends 2015

"By 2015 more than half of the world's population will be urban. The number of people living in mega-cities - those containing more than 10 million inhabitants - will double to more than 400 million…Ninety-five percent of the increase [in world population] will be in developing countries, nearly all in rapidly expanding urban areas. Where political systems are brittle, the combination of population growth and urbanization will foster instability."

- National Intelligence Council, Global Trends 2015: A Dialogue About the Future With Nongovernmental Experts, p. 6, 15

Global Trends 2015

- **US will still be pre-eminent global power in 2015**
  - But world stage will be more dangerous
- **Globalization will generate great wealth**
  - Tensions will exist between haves / have nots
- **Information revolution will be greatest influence on world affairs since industrial revolution**
  - Will also empower nonstate actors
- **Rapid proliferation of advanced technology**
  - Leads to increased threat from missiles + weapons of mass destruction
- **Aging industrial world ~ Young developing world**
  - Leads to waves of immigration
  - - James Kitfield, The Dangerous World of 2015, Air Force Magazine March 2001

Megatrends In The World Today

- **1. Migration of wealth from West to East**
- **2. Demographic change**
  - **Developed world population growing older + shrinking**
  - **Developing world population growing younger + expanding while being undereducated + underemployed**
- **3. Rapid urbanization of planet**
  - **20% of population lives in 27 megacities**
  - **By 2030 60% of world population will live in urban center**
  - **Megacities sit near sea + dominate sea + air lines of communication + ports + airports**
  - **Megacities become megaslums that are ungovernable = feral cities**
- **4. Climate change + scarcity of natural resources (water)**
- **5. Rapid development + diffusion of technology**

- General John Allen USMC, talk at Pritzker Military Museum + Library June 4, 2014

Kilcullen on the Future of War

- **Current trends shaping conflict**
  - **Urbanization + population growth - by 2050 75% of world's 9.5 billion people will be in large cities with 80% of those cities being coastal with the fastest growth in the developing world - thus wars will be more coastal + urban and blur boundaries between crime + warfare**
  - **Explosion in connectivity - thus democratizing + weaponizing communications technology**
  - **Most wars (80%) will remain irregular where a major combatant is a non-state armed group**
  - **Irregular wars tend to be "zombie wars" that keep coming back to life when they seem to be over**
  - **Conflict entrepreneurs are fighters who prolong a war rather than try to win it in order to generate wealth or power in fragmented societies**

- David Kilcullen, The Future of War? Expect to See Urban, Connected, Irregular 'Zombie' Conflicts, Foreign Policy, Feb 2014

The Earth at Night
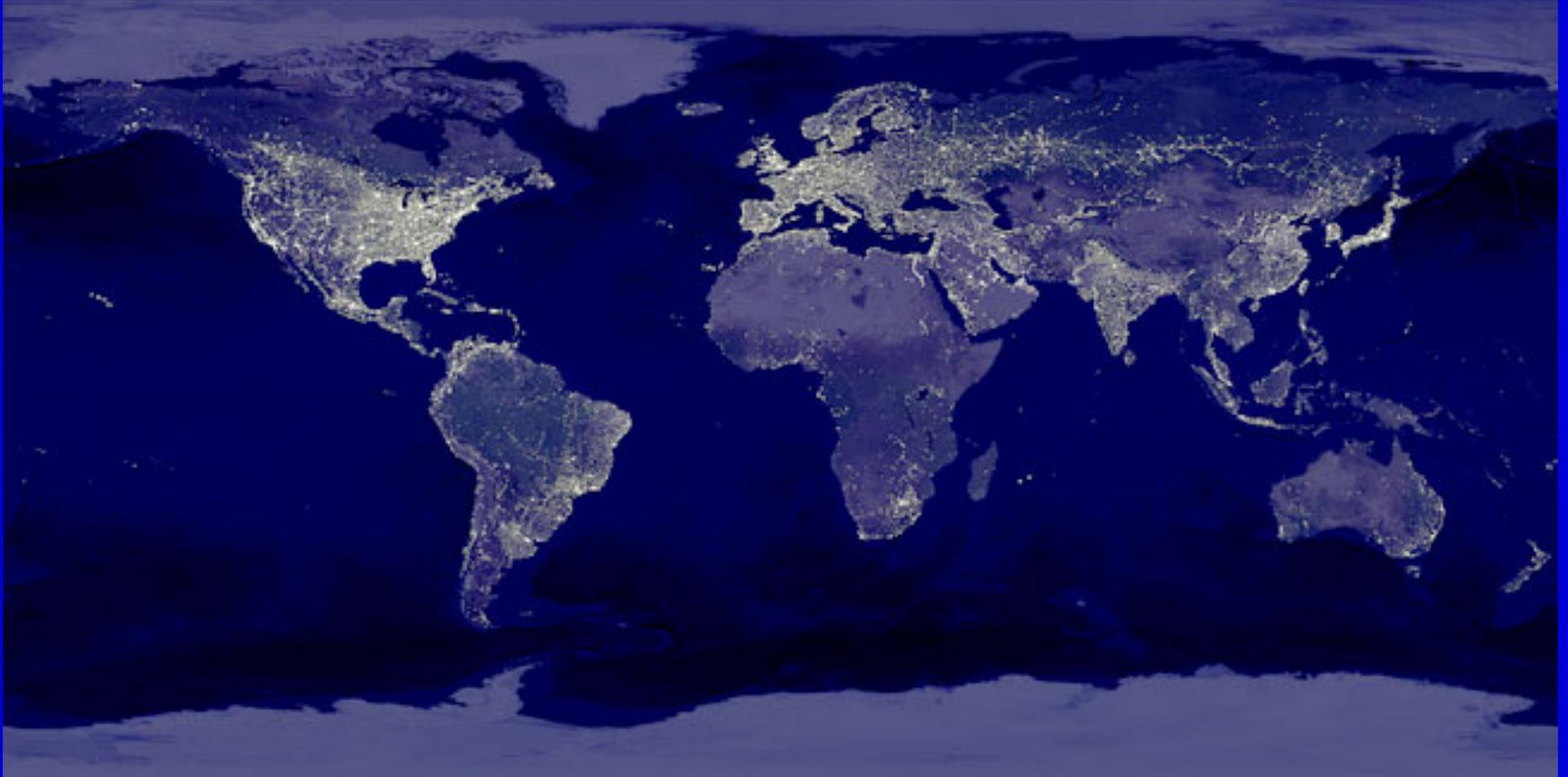
- **Data from Defense Meteorological Satellite Program**
  - **Maps locations of permanent lights on Earth's surface**

The Earth at Night / Black Marble
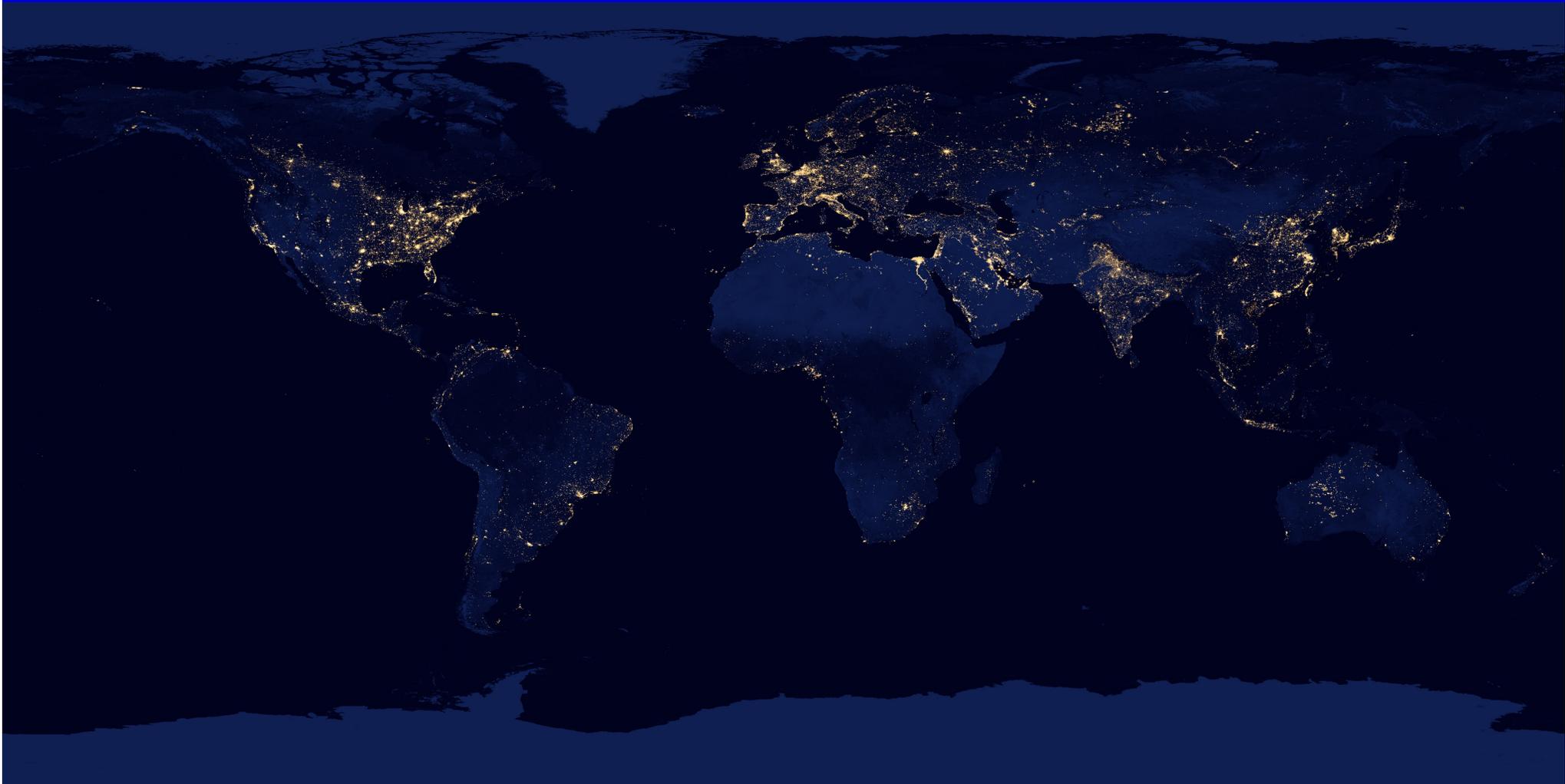
- Data from Suomi-NPP satellite in 2012
  - Maps locations of permanent lights on Earth's surface

The Pentagon's New Map

- **The Core**
- **The Gap**
- **The Challenge - integrate the Core and the Gap**
  - **- Thomas P.M. Barnett, The Pentagon's New Map, Esquire, March 2003**

A Future Worth Creating

- **Pentagon strategists typically view war within the context of war. I view war within the context of everything else - p. 7**

- **Proposing the historical successor to the grand strategy of containment - p.7**

    - Thomas P.M. Barnett, The Pentagon's New Map

A Future Worth Creating

- **Disconnectedness defines danger - p. 8**
  - **The true enemy is neither a religion (Islam) nor a place (Middle East) but a condition - disconnectedness p. 49**
  - **To be disconnected is to be isolated, deprived, repressed, and uneducated - p. 49**
  - **Eradicating disconnectedness becomes defining security task of our age - p. 8**
    - **The combatants we target are those who promote it, enforce it, and terrorize those who seek to overcome it**
    - **- Thomas P.M. Barnett, The Pentagon's New Map**

A Future Worth Creating

- **American's national interest in the era of globalization lies primarily in the extension of global economic connectivity - p.82**
  - **More rules (more adherence to political / security / economic rule sets) means less war**
- **Wars that will define this era of globalization will be symmetrical - we will seek to extend globalization's connectivity, and those who oppose us will seek to derail globalization by disrupting that connectivity - p. 205**

  - Thomas P.M. Barnett, The Pentagon's New Map

A Future Worth Creating

- **What is at stake here is future of globalization - p.49**
  - **America is ideological wellspring for globalization - p. 50**
    - **Our ideals are ideals of globalization: freedom of choice / movement / expression**
  - **We are globalization's godfather, it's source code, it's original model - p. 301**
- **Globalization's most crucial strands of connectivity are the flows of people, energy, money, and security - p. 205**
- **The future that is worth creating is globalization that is truly global - p.106**

  - Thomas P.M. Barnett, The Pentagon's New Map

A Future Worth Creating

- **We are at tipping point of globalization - p.2, 27-29**
  - **Globalization I 1870-1914 (1920's) - ended in WW II**
  - **Globalization II (post 1945) = N. America, W. Europe, Japan**
  - **Globalization III (1980's) = S. America, Developing Asia (integration of half of humanity into the Core p. 240) - ended in global war on terror**
  - **Globalization IV (21st century) = eliminate the Gap - p. 364**
    - **Thomas P.M. Barnett, The Pentagon's New Map**

Future Worth Creating

- **What will constitute the great dividing line between who is in and who is out of globalization's Functional Core? p. 50-51**
  - **We live in a world divided by competency or culture**
    - **World divided by competency = "Lexus world" and "olive tree world" -- world is divided into those who "get" globalization and those who don't "get it" and remain trapped in a simpler world where groups fight over little chunks of "sacred lands" - Thomas Friedman's The Lexus and the Olive Tree: Understanding Globalization**
    - **World divided by culture = Future of global conflict defined by where world's major civilizations bump up against one another (fault-line wars) because different cultures value globalization's connectivity and content flows differently - Samuel P. Huntington's The Clash of Civilizations**
    - **- Thomas P.M. Barnett, The Pentagon's New Map**

A Future Worth Creating

- **How to View the International Security Environment - p. 83**
  - **The <u>system</u> or community of states**
  - **Individual nation-<u>states</u>**
  - **<u>Individuals</u> operating both within societies and across them**
- **Universe of Traditional Military Contingencies - p. 84**
  - **System-level violence = World War III**
  - **Interstate war = Iraq invading Kuwait**
  - **Violence within states = ethnic cleansing, transnational terrorism**
  - **- Kenneth Waltz, Man, the State, and War: A Theoretical Analysis**
  - **- Thomas P.M. Barnett, The Pentagon's New Map**

A Future Worth Creating

- **As globalization has spread over last two decades, two huge changes have unfolded across international security environment - p.85**
  - **Sources of mass violence have migrated downward, from the state to the individual**
    - **Wars between states have disappeared**
    - **Wars are almost exclusively wars within states - and these are failing states that are disconnected**
  - **Nation-state competition has left the military realm, where governments are dominant actor, and moved to economic realm where international organizations (like G8) are dominant actor. So traditional economic power has migrated upward from the state to the system**
  - **- Thomas P.M. Barnett, The Pentagon's New Map**

A Future Worth Creating

- **So the US crisis response patterns have been downshifting from system-level threats to state-level threats to threats from failing states - p. 92**
  - **Moving away from warfare against blocs of states and warfare against states towards warfare against individuals**

- **America's definition of the big threat has downshifted progressively from an "evil empire" to "evil states" to "evil leaders" - p. 369**

  - Thomas P.M. Barnett, The Pentagon's New Map

A Future Worth Creating

- **Global war on terrorism is fought across all three levels - p.95**
  - **Network war across global system to disrupt terrorist financing, communication, logistics**
  - **State-based war against rogue regimes that harbor or support terrorist groups**
  - **Special operations that target individuals for capture or assassination**
  - **- Thomas P.M. Barnett, The Pentagon's New Map**

A Future Worth Creating

- **The long view - p. 110**
  - **Must not view world "vertically" through lens of intermittent wars**
  - **Need to think more "horizontally" seeing history for what it was and the future for what it will be: the periodic ebb and flow of economic globalization**
  - **This is how you place war within the context of everything else**
  - **- Thomas P.M. Barnett, The Pentagon's New Map**

A Future Worth Creating

- **US Security rule sets in the Gap - Hobbesian world - p. 169**
  - **Global cop, preemption, unilateral**
- **US Security rule sets in the Core - Kant's perpetual peace**
  - **Collective security, deterrence, multilateralism**
  - **- Thomas P.M. Barnett, The Pentagon's New Map**

Future Worth Creating

- **How the Functioning Core shrinks the Non-Integrating Gap - p. 239**
  - **In a nutshell - establish security, enable connectivity, encourage foreign direct investment to get you above an annual per capital GDP of $3,000**
- **Connectivity has 4 flows - p. 240**
  - **People have to flow from the Gap to the Core**
  - **Energy will have to flow from the Gap to the Core, especially to the New Core**
  - **Security must flow from the Core to the Gap**
  - **Investment must keep flowing from Old Core->New Core**
- **However, Core must firewall - p. 304**
  - **Terrorism, pandemics, illegal movement of drugs, people, small arms, money, intellectual property**
  - **- Thomas P.M. Barnett, The Pentagon's New Map**

Future Worth Creating

- **If we shrink the Gap, what do we get? - p. 304**
  - **End of war as we know it**
  - **Global economy with no one left out**
  - **A definition of what constitutes finish line in global war on terrorism**
- **End of Cold War solved threat of global conflict**
- **America's playing Leviathan has ended state-on-state war**
- **Shrinking the Gap / making globalization truly global gets us to global peace / victory in the war on terrorism by denying the Gap to the forces of disconnectedness**

  - Thomas P.M. Barnett, The Pentagon's New Map

Future Worth Creating

- ## An American Empire? - p. 327
  - ### America's gift to the world is not military empire but economic globalization and the collective security it both engenders and demands
  - ### Globalization does not come with a ruler, but with rules - p. 356

- ## Definition of "just war" - p. 326
  - ### A war that leaves affected societies more connected than when we found them, with the potential for self-driven connectivity either restored or left intact
  - ### - Thomas P.M. Barnett, The Pentagon's New Map

Future Worth Creating

- **Strategy for a second American Century - p. 369**
  - US plays System Administrator to globalization's continued functioning and advance; periodically waging war across the Gap as its defacto Leviathan
  - Macro rule set on security has three goals
    - Do everything feasible to nurture security relations across Core by maintaining and expanding historical alliances and increasing Core's capacity to deal with System Perturbations
    - Working bilaterally with key Seam States and multilaterally with Core as whole, need to firewall off Core from Gap's most destabilizing flows - terrorism, drugs, pandemic diseases - while working the immigration rule set to provide opportunities to all who can contribute
    - Must commit to shrinking Gap by exporting security to its greatest trouble spots, while integrating any countries that are economic success stories as quickly as possible
      - Thomas P.M. Barnett, The Pentagon's New Map

Focused Case Study -
Future Worth Creating

- **From theory to practice**
  - **(Barnett's) "concepts have spread so fast among the military brass that when I was in Bahrain two weeks ago, I heard a Barnett-style briefing from the commander of U.S. naval forces in the Persian Gulf… He outlined a strategy of encouraging countries in the Middle East to move toward "connected" economies, orderly "rule sets" and democratic political reform."**

    - David Ignatius, Winning a War for the Disconnected, Washington Post, Dec. 14, 2004

Focused Case Study - Future Worth Creating

- **From theory to practice**
  - **Gen. John Abizaid's strategy for winning the "Long War" against "Salafist jihadists" who use 21st century-technology to spread their vision of a 7th-century paradise.**
    - **"…The Long War is only in its early stages. Victory will be hard to measure, he says, because the enemy won't wave a white flag and surrender one day. Success will instead be an incremental process of modernization of the Islamic world, which will gradually find its own accommodation with the global economy and open political systems."**
      - **David Ignatius, Achieving Real Victory Could Take Decades, Washington Post, Dec 26, 2004**
    - **"Military power can gain us time…but that is about it."**
      - **Greg Jaffe, A General's New Plan to Battle Radical Islam, Wall Street Journal, Sept 3, 2006**

Rules for Operating on a Tactical Level to Manage an Unruly World

- **Produce more Joppolos**
- **Stay on the move**
- **Emulate Second-century Rome**
- **Use the military to promote democracy**
- **Be light and lethal**
- **Bring back the old rules**
- **Remember the Philippines**
- **The mission is everything**
- **Fight on every front**
- **Speak Victorian, think pagan**
  - **- Robert Kaplan, Supremacy by Stealth, The Atlantic Monthly, July/Aug 2003**

Enemy of the Future - Non-state Actor

- **War on Terrorism**
    - **What is terrorism?**
    - **Who are you fighting?**
    - **Who is really winning - us or them? - They are - we're out of Saudi Arabia, Moslems hate us, etc.**

Enemy of the Future - Non-state Actor

"In classical military theory - per Clausewitz - the defense is the stronger form of warfare. Attacker needs odds of > 3:1 to beat defender, the attacker suffers the most casualties. But terrorism changes this - the attacker is the stronger form of warfare - on 9/11 they were outnumbered millions:1 but overran our defenses before we knew they were there - defender suffered most casualties"

- Ralph Peters

A Shot in the Dark

- **April 16, 2013, Pacific Gas & Electric's Metcalf Transmission Substation was attacked for 19 minutes with 100 rounds of AK-47 rifle fire that knocked out 17 giant transformers than funnel power to Silicon Valley**
  - **Before the attack, communications cables to the substation were cut**
  - **It appeared to be a professional hit**
  - **Most significant attack ever on US power grid**
- **Who did it and why did they do it?**
- **Raises fears that US power grid is vulnerable to terrorism**
  - **If small number of substations were knocked out at once, US power grid could become destablized enough to cause blackout of most of US**
  - **US power grid has 2,000 very large transformers which are expensive + take months to replace**

- Rebecca Smith, Assault on California Power Station Raises Alarm on Potential for Terrorism, Wall Street Journal, Feb. 4, 2014

Enemy of the Future - Asymmetric Warfare

"The ultimate asymmetry in war is between those who mourn their dead and those who celebrate martyrdom. But that mode of warfare has its limits, surprisingly enough, because it depends on a supply of martyrs. And if you want to acquire martyrs in bulk, not in ones and twos, you must look in communities where faith in the next life is strong, and hope for happiness and prosperity in the earthly life is absent."

- Bill Sweetman, Modern Major Generals, Defense Technology International June 2010 p. 74

Terrorism

"While threatened elites may resort to terrorism as a means, it is essential to understand that terrorism is not the threat. The true threat is the organization itself and the factors leading to its formation - not the tactics it employs…The first step in a small war must be to see clearly the nature of the threat - from this analysis, all else flows."

- US Marine Corps, Small Wars 21st Century p. 18

Piracy

- **Increasing in amount**
- **Governments unwilling to cooperate to control it**
- **Threat to trade**
- **Threat to environment**

Enemy of the Future - State Actor

- **It is practically impossible to challenge US militarily on its own terms**

- **The way to challenge the US militarily is to develop different approach - operate outside bandwidths understood by US military**

  - **The first rule is there are no rules**

  - **The location of the battlefield is everywhere**

  - **Professional armies are like gigantic dinosaurs which lack strength commensurate to their size**

- **Examples**

  - **Financial / drug / psychological and media / international law / resource / ecological warfare**

- Qiao Lang and Wang Xiangsui (Chinese People's Liberation Army), Unrestricted Warfare, 1998

Enemy of the Future - State Actor

"The new principles of war are no longer 'using armed force to compel the enemy to submit to one's will,' but rather are 'using all means, including armed force or nonarmed force, military and nonmilitary, and lethal and nonlethal means to compel the enemy to accept one's interests.'"

"This kind of war means that all means will be in readiness, that information will be omnipresent, and the battlefield will be everywhere,"…"also means that many of the current principles of combat will be modified, and even that the rules of war may need to be rewritten."

- Qiao Lang and Wang Xiangsui (Chinese People's Liberation Army), Unrestricted Warfare, 1998

China's Three Warfares

- **A three-pronged offensive information warfare strategy aimed at preconditioning key areas of competition in its favor, consisting of**
    - Psychological warfare, which seeks to undermine an enemy's ability to conduct combat operations by deterring, shocking, and demoralizing enemy military personnel and supporting civilian populations.
    - Media warfare, aimed at influencing domestic and international public opinion to build support for China's military actions and to dissuade an adversary from pursuing actions contrary to China's interests.
    - Legal warfare, which uses international and domestic law to claim the legal high ground or assert Chinese interests, employing both to hamstring an adversary's operational freedom and shape the operational space. Legal warfare is also intended to build international support and manage possible political repercussions of China's military actions.

- US Department of Defense, 2011 Annual Report to Congress on Military and Security Developments Involving the People's Republic of China

"When the wind of change blows, some build walls, while others build windmills"

- Chinese proverb

Six Defining Characteristics of a Communist System

- **Political**
  - **1. The monopoly of power of the Communist Party**
  - **2. Democratic centralism - a strictly hierarchical + strictly disciplined party**
- **Economic**
  - **3. A command economy, not a market economy**
  - **4. State ownership of the means of production, not private ownership**
- **Ideological**
  - **The sense of belonging to an international Communist movement**
  - **The idea of building communism (small c), the society of the future - their utopia with no class conflict + the state would have withered away - a never never land - but Communist parties justified their monopoly of power on the basis they were supposedly leading people to this ultimate stage of development, communism**

(Note: In China today, only the first two characteristics remain)

- Archie Brown, The Rise and Fall of Communism, Lecture at the Pritzker Military Library, November 2, 2009

Fintech is Front Line of Cold War 2.0

(The US takes the view that) "We have the dollar and they (China) do not."

- This allows the US to borrow cheaply and discipline others with sanctions)

"But China (through Ali Baba and Tencent) is building an alternative financial infrastructure by extending its payment platforms to emerging markets."

- China will lead in digital currencies while the US is wedded to its 1970s fiat money of check books and credit cards

"To a very large extent, power is a product of financial innovation and if China wins the financial innovation race, there starts to be an alternative payment system to the one that revolves around the US dollar. I think the US should be more worried than they are."

- Niall Ferguson

- Kevin Chinnery, Niall Ferguson: This is What Happens if China Wins the New Cold War, Australian Financial Review, Mar 8, 2019

The New Russian Way of War: Asymmetric Tactics

"The Russian deployment of asymmetric tactics represents a new challenge to NATO. Events in Ukraine demonstrate in particular Russia's ability to effectively paralyse an opponent in the pursuit of its interests with a range of tools including psychological operations, information warfare and intimidation with massing of conventional forces. Such operations may be designed to slip below NATO's threshold for reaction. In many circumstances, such operations are also deniable, increasing the difficulties for an adversary is mounting a credible and legitimate response."

- House of Commons Defence Committee, Towards the Next Defence and Security Review: Part Two - NATO, July 22, 2014, paragraph 29

"The crisis in Ukraine has revealed the threats to NATO members from 'non- linear' forms of aggression, which combine mass disinformation campaigns, cyber-measures, the use of special forces, sometimes disguised as local partisans, mobilization of local proxies, intimidation through displays of strength, and economic coercion."

- Group of Policy Experts, Collective Defence and Common Security, June 2014, p.3

Who Is The Real Enemy?
Follow the Money

- **Before 1979 Saudi Arabia was much more moderate - what happened?**

- **Close relationship between Saudi royal family + kingdom's Salafist Muslim sect, the Wahhabis forged due to:**

    - **1979 seizure of Grand Mosque at Mecca by Islamist terrorists + Saudi need to turn to infidel troops (French) to reclaim holiest site - this showed its vulnerability to Muslim fanatics**

    - **1979 coming to power of Shiite theocratic totalitarian regime in Iran**

- **Thus Saudi Sunni fundamentalists given free reign to control internal fundamentalists and counterbalance external Shiite fundamentalists**

- **Wahhabis's manage Saudi schools which influences next generation toward jihadism**

- R. James Woolsey, Black Gold and Black Veils, Wall Street Journal Sept. 18, 2012

Who is the Real Enemy?
Follow the Money

"Donors in Saudi Arabia constitute the most significant source of funding to Sunni terrorist groups worldwide"

- Secretary of State Hilary Rodham Clinton via WikiLeaks

"Our greatest enemy, anywhere, is Saudi Arabia, the cradle of terror."

- Ralph Peters, Saudi Stick-Up, New York Post, May 5, 2008

Why the War on Terror Has Failed

"The spectacular resurgence of al-Qa'ida and its offshoots has happened despite the huge expansion of American and British intelligence services and their budgets after 9/11. Since then, the US, closely followed by Britain, has fought wars in Afghanistan and Iraq, and adopted procedures formerly associated with police states, such as imprisonment without trial, rendition, torture and domestic espionage. Governments justify this as necessary to wage the "war on terror", claiming that the rights of individual citizens must be sacrificed to secure the safety of all.

Despite these controversial security measures, the movements against which they are aimed have not only not been defeated but have grown stronger. At the time of 9/11, al-Qa'ida was a very small organisation, but in 2014 al-Qa'ida-type groups are numerous and powerful. In other words, the "war on terror", the waging of which determined the politics of so much of the world since 2001, has demonstrably failed."

"The "war on terror" has failed because it did not target the jihadi movement as a whole and, above all, was not aimed at Saudi Arabia and Pakistan, the two countries that had fostered jihadism as a creed and a movement. The US did not do so because they were important American allies whom it did not want to offend."

- Patrick Cockburn, Al-Aa'ida, The Second Act: What the Global 'War on Terror' Went Wrong, The Independent, Mar 16, 2014

The Islamic Civil War

"Some time before 9/11, Prince Bandar bin Sultan, once the powerful Saudi ambassador in Washington and head of Saudi intelligence until a few months ago, had a revealing and ominous conversation with the head of the British Secret Intelligence Service, MI6, Sir Richard Dearlove. Prince Bandar told him: "The time is not far off in the Middle East, Richard, when it will be literally 'God help the Shia'. More than a billion Sunnis have simply had enough of them.""

…

"There is no doubt about the accuracy of the quote by Prince Bandar, secretary-general of the Saudi National Security Council from 2005 and head of General Intelligence between 2012 and 2014, the crucial two years when al-Qa'ida-type jihadis took over the Sunni-armed opposition in Iraq and Syria. Speaking at the Royal United Services Institute last week, Dearlove, who headed MI6 from 1999 to 2004, emphasised the significance of Prince Bandar's words, saying that they constituted "a chilling comment that I remember very well indeed"."

…

"Dearlove says that he has no inside knowledge obtained since he retired as head of MI6 10 years ago to become Master of Pembroke College in Cambridge. But, drawing on past experience, he sees Saudi strategic thinking as being shaped by two deep-seated beliefs or attitudes. First, they are convinced that there "can be no legitimate or admissible challenge to the Islamic purity of their Wahhabi credentials as guardians of Islam's holiest shrines". But, perhaps more significantly given the deepening Sunni-Shia confrontation, the Saudi belief that they possess a monopoly of Islamic truth leads them to be "deeply attracted towards any militancy which can effectively challenge Shia-dom"."

- Patrick Cockburn, Iraq Crisis: How Saudi Arabia Helped Isis Take Over The North of the Country, The Independent, July 13, 2014

The Ideological Epidemic of Our Time

"Radical Islam is the ideological epidemic of our time, just as Bolshevism was an ideological epidemic a century ago. Islamic extremism now represents a global threat to western civilisation.

The threat manifests itself in at least four ways.

First, the spread of Islamic extremism within European societies in established immigrant communities like Pakistanis in England, Somalis in the Netherlands, Turks in Germany. A key role has been played here by radical preachers in mosques and Muslim centres funded wholly or partially with money from Gulf states, principally Saudi Arabia.

Second, the contamination of non-Muslim communities by extremist proselytising and conversion.

Third, the penetration of European countries by new extremists arriving in the guise of asylum seekers, and finally, the two-way traffic between Europe and countries like Syria, Iraq and Pakistan, which enables radicalised young European Muslims to gain experience of conflict and terrorism."

- Niall Ferguson, The Degeneration of Europe, Prospect, Nov. 2015

Iran - News As History
Fall of Persian Empire ~ Rise of US Empire

- 650BC - 1925 - Persian Empire
- 1908 - Oil discovered! - British + Russia now interested (Great Game)
- 1921 - Military coup involving Reza Khan, becomes Prime Minister
- 1925 - Reza Khan becomes Reza Shah
- 1941 - British + Soviet Union occupy for oil + supply line to Russia
- ~ 1945 -1979 - Mohammed Reza Shah Pahlavi takes over from father
- 1945 - 1951 - Constitutional monarchy
- 1951 - Prime Minister nationalizes British owned oil industry + exiles Shah
- 1953 - CIA + MI6 sponsored coup restores Shah to absolute monarchy, gives US good oil deal
- 1979 - Iranian revolution restores democracy, but then becomes Islamic Republic with Ayatollah Khomeini becoming Supreme Leader after referendum
- 1979 - 1981 - Iranian Hostage Crisis + Desert One failed rescue attempt
- 1980 - 1988 - Iran-Iraq War with US aiding Iraq
- 1989 - Ayatollah Khamenei succeed Ayatollah Khomeini
- ~ 1990's - Hamas + Hezbollah are Iran's proxies in Lebanon + Palestine
- 1997-2005 - Reformist government under President Khatami blocked by clergy
- ~ 2002 Nuclear weapons program restarts
- 2005 - President Ahmadinejad
- 2006 - Sanctions against Iran over nuclear weapons program
- 2009 - People revolt after re-election of Ahmadinejad
- 2010 - Stuxnet cyberattack against Iran nuclear weapons program (?US, Israel)
- 2010, 2011 - Targeted assassinations against Iranian nuclear scientist (?Israel)
- 2011 - Iran plots to assassinate Saudi ambassador to US in US
- 2011 - IAEA claims Iran working on nuclear weapons

Can a State Actor Function as a Non-State Actor? US + Israel War Against Iran 2009-Pr

- **Targeted assassination of Iranian nuclear scientists**

- **Targeted cyber attacks against Iranian nuclear centrifuges (Stuxnet)**

- **Assistance to Baluchi insurgency in Iran**

- **Worldwide economic sanctions against Iran**

Playing the Long Game

- **Major General Qassem Suleimani, commander since 1998 of Iran's Quds Force, a powerful + elite branch of Revolutionary Guard that is sharp instrument of Iranian foreign policy, analogous to combined CIA + Special Forces, dedicated since 1979 to subvert Iran's enemies + extend its influence across Middle East by building Shiite sphere of influence stretching across Iran + Iraq + Syria to Lebanon / Mediterranean = Axis of Resistance to Sunni power + the West**
    - **Began career in Sacred Defense / Iran-Iraq War 1980-1988**
    - **Assisted Hezbollah in Lebanon in ejecting Israel from Lebanon and then in continuing its fight against Israel**
    - **Assisted US initially in fight against Taliban but stopped once US branded Iran part of "Axis of Evil" in 2002**
    - **In 2003, fearful of American invasion, wanted to cooperate with US…but when US occupation of Iraq faltered, directed network of Shia militant groups that killed hundreds of Americans in Iraq with Explosively Formed Projectiles (EFP) IEDs**
    - **Brokered formation of Iraqi government to ensure Iraq remains weak - "He's the most powerful man in Iraq, without question"**
    - **Assists Assad in running war in Syria to help him stay in power**
    - **Operations funded by Iraqi government through sale of Iraqi oil, making Quds Force immune to Western sanctions**
    - **Most lasting impact is fueling the Sunni-Shiite conflict that will engulf Middle East for years**
    - **Middle Eastern equivalent of John le Carre's spymaster Karla**
    - **"Suleimani is the single most power operative in the Middle East today"**

- Dexter Filkins, The Shadow Commander, New Yorker, Sept. 30, 2013

Case Study Summary - Siege Berlin Airlift June 24 1948 - May 1949

- **Goal**
  - **Allies - keep West Berlin supplied with food + fuel ~ USSR - starve + freeze them**
- **Center of Gravity (Strategy)**
  - **Allies + USSR - 2 million Berliners more than 100 miles within Soviet zone**
- **Equipment**
  - **Aircraft - C-47 (carry 3 tons of cargo), C-54 (carry 6 tons of cargo), Sunderland ~ Airports - Tempelhof, Gatow, lakes, Tegel**
- **Training / Leadership / Morale**
  - **Allies - WWII veteran pilots, Generals Lucius Clay (land - logistician) + William Tunner (air - The Hump), President Truman ("We stay in Berlin - period") ~ Germans - Ernst Reuter ("You cannot abandon this city and its people")**

Case Study Summary - Siege
Berlin Airlift June 24 1948 - May 1949

- **Tactics**
  - **Allies - production line delivery of 4,500 tons of supplies / day from planes landing every 3 minutes for 1 year**
- **Intangibles**
  - **Allies - a solitaire game - how fast can you go ~ how efficient can you be**
- **Mistakes**
  - **USSR underestimated capabilities + will of Allies**
- **Outcome**
  - **First battle of Cold War won without firing a shot**
  - **Accelerated creation of independent West Germany + NATO**

Logistics, Logistics, Logistics…

"Valuable time was wasted in Berlin as crews landed, parked, shut off engines, took off for the snack bar and then strolled over to Operations to make out their return clearances. I laid down an order: No crew member was to leave the side of his aircraft while the Germans unloaded it. Each plane would be met by an operations officer who would hand the pilot his return clearance all filled out, and a weather officer would give him the latest weather back at his home base. Mobile snack bars tended by some of the most beautiful girls in Berlin would move to the side of each plane. Turn-around time was cut in half to 30 minutes."

- General William H. Tunner USAF, commander of US Berlin Airlift effort

Personal Case Study - Ambassador K

- **Role**
  - **Indian ambassador, served around the world**
- **Story**
  - **Son is my friend / Came to dinner in my home**
  - **The epitome of a diplomat in dress, demeanor, manners, conversation, language**
    - **More British than the British**
- **…but first principles of self-interest guides everything despite the cover language!**

Personal Case Study - Me

"It is better to jaw-jaw than war-war."

- Winston Churchill

- What do world leaders talk about during downtime?

  - Their families

- Connectivity is key

"Wonder of wonders, the average GI found that the people he liked best, identified most closely with, enjoyed being with, were the Germans."

- Stephen Ambrose, Band of Brothers p. 256

- Role - physician

- Story - My friends

  - German and Japanese civilians

    - Claudia G and Shunsuke N and their families

Class Simulation

- **Geopolitical aspects**

Poem

Summer grasses
all that is left
of the dreams of soldiers

   - Basho, 17th century Japanese poet

Questions for Further Discussion

- **Describe the difference between inter-state and intra-state warfare**
- **Compare and contrast guerilla war, intra-state war (Van Creveld), 4th Generation War (Lind), Global Guerillas (Robb)**
- **Compare and contrast the visions of the future articulated by Kaplan and Peters to that of Barnett**
  - **Which vision is isolationist? Which is engaged?**
- **Can we economically develop ourselves out of war?**
  - **Will two countries with significant economic relationships avoid war just as two countries with nuclear weapons avoid war?**
- **Are our future enemies state actors or non-state actors?**

Reading Assignments

- ## TED Talks for this Topic
    - ### http://www.warstudiesprimer.org/ToLearnMore.html

Recommended Reading to Learn More

- **Non-fiction**
  - **Thomas P.M. Barnett - The Pentagon's New Map**
- **Fiction**
  - **Ralph Peters - Devil's Garden**
- **Movies**
  - **Syriana**
  - **Traffic**
  - **Traffik**
- **Simulations**

Conclusion

"Observe good faith and justice toward all nations. Cultivate peace and harmony with all. Religion and morality enjoin this conduct. And can it be that good policy does not equally enjoin it? It will be worthy of a free, enlightened, and at no distant period a great nation to give to mankind the magnanimous and too novel example of a people always guided by an exalted justice and benevolence. Who can doubt that in the course of time and things the fruits of such a plan would richly repay any temporary advantages which might be lost by a steady adherence to it? Can it be that Providence has not connected the permanent felicity of a nation with its virtue? The experiment, at least, is recommended by every sentiment which ennobles human nature. Alas! is it rendered impossible by its vices?"

- George Washington, Farewell Address, 1796

Conclusion - The Opportunity

SECRETARY POWELL: But our great strength is the image we still convey to the rest of the world. Notwithstanding all you read about anti-Americanism, people are still standing in line to come here, to get visas and come across our borders.

P. J. O'ROURKE: Voting with their feet?

SECRETARY POWELL: Voting with their feet. So there's something right there.

P. J. O'ROURKE: Back in Lebanon in 1984, I was held at gunpoint by this Hezbollah kid, just a maniac, you know, at one of those checkpoints, screaming at me about America, great Satan, et cetera.

SECRETARY POWELL: Then he wanted a green card?

P. J. O'ROURKE: At the end of this rant, that's exactly what he said: "As soon as I get my green card, I am going to Dearborn, Michigan to study dental school." And he saw no disconnect.

SECRETARY POWELL: He's there now. He's not going back to Beirut.

P. J. O'ROURKE: He hated America so much and wanted nothing more than to be an American.

SECRETARY POWELL: They respect us and they resent us. But they want what we have...What I find is that people are mad about our policies. They're not necessarily mad at us. And therefore, as policies are successful, attitudes can be changed.

- P.J. O'Rourke, A Conversation With Colin Powell, The Atlantic, Sept. 2004

Conclusion - The Opportunity

"Between us, if I'm offered a job at Fox News, I'll take it, instantly. I will send my children to go to America after high school, I will pay for them to go. To exchange this Arab nightmare for the American dream…I have plans for my children…"

- Samir Khader, Al Jazeera producer in The Control Room

Conclusion -
What Are We Fighting For?

- **Militant Islam's vision for the future: 7th Century Caliphate**

- **US vision for the future: 4 Freedoms**
    - **(Freedom of speech / expression, of worship, from want, from fear)**
  - **But we've never clearly and repeatedly articulated this…**
  - **…and this vision is not shared by most of our Arab "allies"**

- **How can the US be losing to these guys?**

Topic 23

Future War Technology

Song

Once the rockets are up, who cares where they come down?
That's not my department, says Wernher von Braun

<div style="text-align: right">- Tom Lehrer, Wernher von Braun</div>

Thematic Quote

"To entrust the development of aviation to either the Army or the Navy is just as sensible as entrusting the development of the electric light to a candle factory"

- General Billy Mitchell

"Great companies can fail precisely because they do everything right…they lose their market leadership when confronted with disruptive technology"

- Clayton Christensen, The Innovator's Dilemma

Thematic Quote

"Machines don't fight wars. People do, and they use their minds."

- Colonel John Boyd

"It's not the strongest of the species that survives, not the most intelligent, but the one most responsive to change"

- Charles Darwin

"Wars may be fought with weapons but they are won by men"

- General George S. Patton, Jr.

Thematic Quote

"The easiest way to predict the future is to invent it

Build what you use. Use what you build.

You let what you build change you, then you move on"

- Xerox PARC

The Painting

2001 A Space Odyssey

- Robert McCall

(National Air and Space Museum)

The Question

- **How were wars fought in the past?**

- **How will wars be fought in the future?**

How Do You Stay on Top?

- **Historically, military advantage has been based on a fundamental tactical advantage, enhanced by operational art, sustained by strategic societal institutions**

- **Note that**

  - **Military advantage based on tactical advantage without strategic advantage tends to be temporary**

  - **Military advantage proves most enduring if it is based upon strong political, economic, and social institutional structure at the strategic level**

  - **Military transformation plays integral role in maintaining military advantage**

  - Mark Herman, Military Advantage in History

How Do You Stay on Top?

- **Today, opponent can counter US military advantage by:**
  - **Improving upon US tactical or operational advantage by adopting similar but enhanced technological capabilities or by deploying more robust operational concepts**

  - **Adopting asymmetric response, which fundamentally changes playing field, with most effective asymmetric targets being US strategic institutions**

  - Mark Herman, Military Advantage in History

Revolution in Military Affairs / Multiple Innovation Model of a RMA

Stage	Basic Model	Carrier Warfare Model
1.	New technology	Science of Aeronautics
2.	New device	Airplane
3.	New system	Carrier and Its Aircraft
4.	New operational concept	Carrier Air Strike
5.	New force structure and doctrine	Task Force

Stage 1 in 1903 -> Stage 5 in 1941

- Richard Hundley, Past Revolution, Future Transformations: What Can the History of Revolutions in Military Affairs Tell Us About Transforming the U.S. Military? p. 12.

- Thomas Wildenberg, Midway - Sheer Luck or Better Doctrine, Naval War College Review, Winter 2005, Vol 58 No 1

Focused Case Study - Renaissance Blitzkrieg
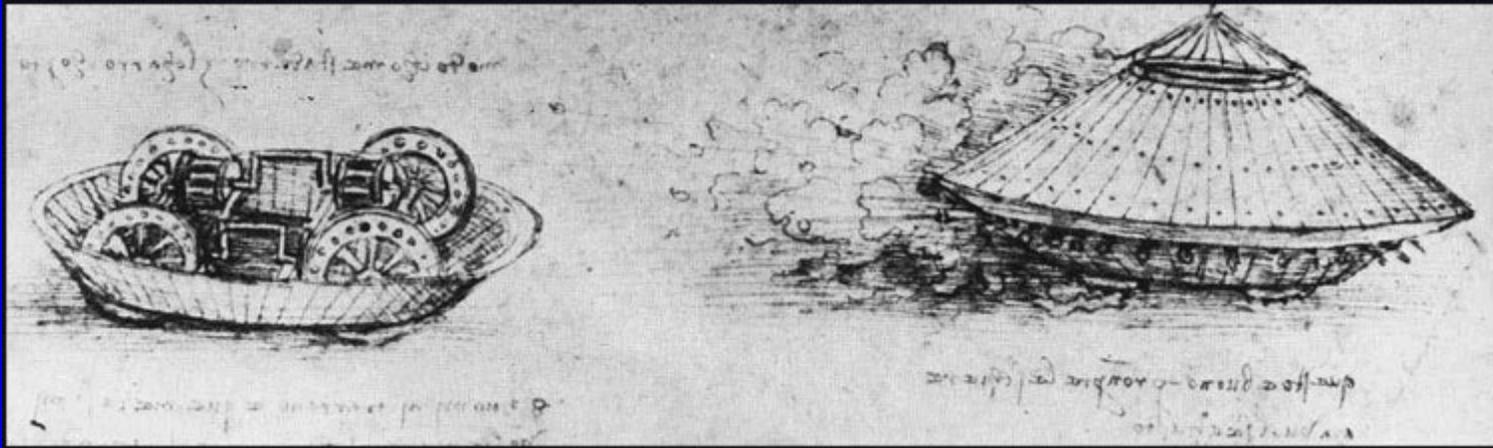
"I will make armored cars, safe and unassailable, which will enter the close ranks of the enemy with their artillery, and no company of soldiers is so great that they will not break through them. And behind these, the infantry will be able to follow quite unharmed and without any opposition."

- Leonardo da Vinci

Focused Case Study - Transformation ala 19th Century

- **Development of firearms**
  - **Step by step up to breech-loading flintlocks of 18th century**
  - **Mid 19th century repeating rifle perfected by New England gunsmiths and deployed**
    - **Allowed you to shoot and shoot again without stopping to reload**
    - **Could fire 15 rounds in 11 seconds**
      - **Muzzle-loaders fired 1 round in 11 seconds**
    - **Gave Union soldiers tactical advantage over Confederate soldiers at Gettysburg and Chickamauga**
  - **…Weapons can matter on the battlefield when they make their first appearance and one side has them and the other does not**

  - Mark Yost, Giving it Their Best Shot, Wall Street Journal, Dec. 24, 2005

Focused Case Study - US Navy and Steam

- **USS Wampanoag**
  - **Commissioned in 1866**
  - **First US Navy ship constructed from beginning with steam propulsion (with sails as a backup)**
  - **Ran circles around sailing warships whose freedom of maneuver restricted by wind force and direction**
  - **Decommissioned in 1868**
    - **The fighting spirit of captain of ship would be lessened if he could not see and direct every element of his ship from his position on deck (men in engine room would be outside captain's control)**
  - **Navy did not build another warship with steam propulsion for 15 years**
  - **- Elting E. Morison, Men, Machines, and Modern Times**

Focused Case Study - Transforming Amphibious Warfare 193x

- **The mission**
  - **US Marines must capture enemy islands under fire**
- **The problem**
  - **How to get from ship to shore via landing craft**
- **The solution**
  - **Lt. Victor H. "Brute" Krulak, USMC intelligence officer in China, suggests adopting unique Japanese drop-bow / pointed stern landing craft design he observes in action in report to US Navy in 1938**
  - **In 1939 checks report's status, finds it labeled "Prepared by some nut out in China"**

  "When trouble starts, they call for us sons of bitches"

  - Admiral Ernest J. King

- **The result**
  - **In 1941 Krulak + Marines bypass US Navy, design their own landing craft - the Higgins boat / LCVP**

  Higgins was "the man who won the war for us." If Higgins hadn't designed and built those boats, "we never could have landed over an open beach. The whole strategy of the war would have been different."

  - Dwight David Eisenhower

  - Robert Coram, The Bridge To The Beach, World War II Magazine

Focused Case Study - Failure of Transformation - American Maginot Line / Defense of Oahu

- **England planned to defend itself by attack from air in 1930's**
  - **Used radar, ground observers, AAA, aircraft**
    - **Operational 1939 ~ Tested 1940**
- **US planned to defend Oahu by attack from sea in 1930's**
  - **Used coastal artillery, infantry**
    - **First radar arrives Sept. 1941, no ground observers, no organized aerial patrols**
  - **Fleet exercises in 1932+1938 showed carrier based aircraft could penetrate island's local defenses**
    - **Taranto in 1940 proved this but ignored**

Focused Case Study - Failure of Transformation - American Maginot Line / Defense of Oahu

- **Japanese plan to attack Pearl Harbor**
  - **Sink US aircraft carriers (understood future of naval warfare)**
- **US plan to defend Pearl Harbor**
  - **Prevent sabotage**
- **Japanese reality**
  - **Sank battleships**
  - **Did not hit repair facilities, fuel and ammunition depots**
  - **Had no idea what to do next**
- **US reality**
  - **Fortuitously lost battleships (past of naval warfare)**
  - **Future of naval warfare (aircraft carriers + their admirals) took over war + executed well polished plans from US Naval War College**

Why Didn't Japan Invade Oahu?

- **Japanese plan predicated not on sneak attack but attack with little warning**
  - **Their wargaming predicted heavy Japanese naval and air casualties which would not allow them to remain in Hawaiian waters**
  - **They expected to be met by**
    - **US ships at battle stations but not steaming**
    - **US fighters scrambled**
    - **US troops mobilizing**
- **Japanese also overestimated US strength**
  - **US had no way to centrally coordinate fighters with radar**
  - **2 US divisions on Oahu had never exercised with forces bigger than battalion**
- **Japanese declaration of war took too long to decode and was not delivered until after the attack and thus they achieved complete surprise**
  - **An invasion on December 7th would have been devastating**
  - **Once this was realized and attempted at Battle of Midway it was too late**

- Adrian McGrath + Ty Bomba, Invasion Pearl Harbor: Strike in All Directions, World at War # 14

Focused Case Study - Acoustic Mirrors

- **Device used to focus + amplify sound waves**
  - **Used for early warning to provide range (up to 20 miles) + direction of incoming aircraft + zeppelins**
- **Prototype hemispheric concrete acoustic mirrors built around north + south England in WWI + interwar years**
  - **Used extensively in air defense exercises in 1930's**
  - **Led to development of tactics, techniques, procedures (TTP) for air defense**
- **About to be deployed country-wide in mid-1930's when radar was developed**
  - **Increased speed of aircraft led to ever-shortening detection times**
  - **Showed electromagnetic waves could be detected, gathered, measured from a distant, unseen, moving object**
- **Shows importance of developing TTP independent of technology**
  - **TTP for handing information from acoustic mirrors mapped directly to handling information from radar, made radar immediately effective to England, in the nick of time**

Focused Case Study - Hobart's Funnies

- **Major General Percy CS Hobart**
  - **Eccentric advocate of armored warfare in British Army**
  - **In 1934 created world's first full time armored division (Britain's 1st Tank Brigade) - his ideas adopted by Germans for Blitzkrieg**
  - **By 1940 he was run out of British Army**
  - **In August 1940 he re-enlists as corporal in Home Guard**

  "I am not at all impressed by the prejudice against him in certain quarters. Such prejudices attach frequently to persons of strong personality and original view" - Churchill to Army brass
  - **March 1943 takes command of British 79th Armored Division**
- **Vehicles designed as modern siege engines to overcome debacle at Dieppe**
  - **Sherman DD + Crab / Flail, Churchill AVRE + Crocodile + Bobbin / Fascine + AVLB + ARK + ARV**
- **Results**
  - **All vehicles used by British + Canadians on D-Day at Sword / Gold / Juno -> had light casualties**
  - **Only DD vehicles used by US on D-Day at Omaha -> had heavy casualties**
  - **Received KBE after war**
  - **Time, D-Day - 24 Hours That Saved the World, pp. 86-89**

Focused Case Study - First Suicide Bombers

- **Bushido (Japanese warrior culture) demanded**
  - **Every army must fight to the last soldier**
  - **Every soldier must fight to his last breath**
- **Kamikaze (Divine Wind)**
  - **First used October 24, 1944**
    - "Japan's future is bleak if it is forced to kill one of its best pilots" - First pilot
    - "Was it necessary to go to this extreme?" - Emperor Hirohito
  - **Idea of laying down one's life for Emperor and homeland resonated with followers of Bushido**
    - **If war is lost, individual honor can be redeemed by self-sacrifice**
  - **Sank 3 carriers ~ Damaged 15 others badly ~ Cost 5,000 pilots**
  - **- Time Magazine, V-J Day, 2005**

How Long Does it Take to Change the Military

- **Andrew Marshall**
  - **Avoid fate of nations whose overconfident militaries slid from triumph to obsolescence - model the Germans after WW I**
  - **Information age will spark military revolution which will lead to end of industrial era of attrition warfare**
    - **Mass armies replaced by smaller more lethal forces fighting from a distance**
    - **Ascension of standoff weapons**
    - **Smart weapons force tanks to become deathtraps**
    - **Aircraft carriers lose central role, ships become smaller / stealthier and more powerful armed with standoff precision weapons**
    - **Rise of UAV**
    - **Smaller force needs less logistics, but more targeting info needed**
    - **Electronic battlefield makes military less hierarchical**
  - **Does this look like blueprint for Afghanistan 2001 / Iraq 2003?**
    - **- Thomas Ricks, How Wars are Fought Will Change Radically, Pentagon Planner Says, Wall Street Journal, July 15, 1994**

Transformation

"The three key elements of transformation thus far are knowledge, speed and precision"

- Major General Robert Scales, Jr. - Former Commandant Army War College

Network Centric Warfare

- **Idea is that instead of relying on the sensors on board one's own platform, tactical decisions should rely on a tactical picture created by a network of sensors**

- **War is reduced to identifying and destroying sets of targets**

- **Forces can be made leaner if they rely on the right sets of sensors and communications**

- **What is saved on force levels has to go into the sensors**

  - **Norman Friedman, Transformation and Network-Centric Warfare Tested in Iraq, Proceedings, August 2004 p. 4-6**

Situational Awareness

- **Digital Battlefield**
  - **Blue Force Tracker**

Closing / Speeding Up the Sensor Shooter Loop

"We're going to move from breaking the sound barrier to breaking the time barrier"

- General Greg Martin USAF

…We are also moving from speed-of-sound weapons to speed-of-light weapons…

Silence is Golden

- **Battlefield is becoming quieter for US troops**
  - **Small scale, precision firepower replacing large scale massive firepower of 20th century**
    - **Smart bombs (JDAM + laser guided)**
    - **Assault rifles with high tech sights**
    - **MLRS rockets and artillery shells with GPS guidance (Excalibur)**
  - **Troops use individual radios rather than shouting to communicate**
  - **…overall decreases risk of friendly fire + collateral damage as well as logistics needs and wear + tear on weapons**

  - Where Has All the Firepower Gone?, StrategyPage, June 22, 2006

Unmanned Aerial Vehicles

- **First developed - World War I**
  - **Kettering Bug**
- **First use - Vietnam**
  - **Air Force is pilot-led, has inherent bias against aircraft without pilots**
- **Finally accepted - Afghanistan and Iraq**

Focused Case Study - Unmanned Aerial Vehicles

- **UAV's in Vietnam (Late 1960's)**
  - **Ryan Model 147 Lightning Bug**
    - **~ 3500 launches**
    - **Missions - photo recon, chaff laying, Sigint, jamming**
    - **8 hours endurance ~ 75,000 foot ceiling**
- **Compass Cope (Early 1970's)**
  - **Boeing and Teledyne Ryan**
    - **Missions - ELINT**
    - **24 hour endurance ~ 55,000 foot ceiling**
- **Experiments with UAVs with precision weapons and jamming**

- Bill Sweetman, HALE/MALE Unmanned Air Vehicles Part 1: History of the Endurance UAV, International Air Power Review Vol. 15

Focused Case Study - Unmanned Aerial Vehicles

- **Compass Cope canceled, UAVs fall out of favor (1977) - Why?**
  - **Lightning Bugs launched from mother ships = expensive**
  - **Non-combat losses high**
  - **Expensive**
  - **Transferred from SAC to TAC, so they compete for money with fighters**
  - **Used film based sensors**
  - **Small in size satellite data links did not exist**
  - **Pre GPS - accurate navigation via INS difficult**

- Bill Sweetman, HALE/MALE Unmanned Air Vehicles Part 1: History of the Endurance UAV, International Air Power Review Vol. 15

Focused Case Study - Unmanned Aerial Vehicles

- **DARPA funds Project Amber - 1984**
  - **Small high performance multirole UAV**
  - **Leading Systems -> General Atomics**
  - **Amber -> Gnat -> Predator**
  - **Has digital sensors (video, SAR, IR) / satellite data link / GPS navigation**
  - **Goes to war in Bosnia in 1995 - continual use since then**
  - **First combat airstrike in 2002**
  - **Piloted from ground ~ 24 hour endurance ~ 25,000 foot ceiling**

- Bill Sweetman, HALE/MALE Unmanned Air Vehicles Part 1: History of the Endurance UAV, International Air Power Review Vol. 15

Focused Case Study - Unmanned Aerial Vehicles

- **Teledyne Ryan -> Northrop Grumman Global Hawk**
  - **Sensors include SAR / IR / MTI**
  - **First use in Afghanistan November 2001**
  - **Autonomously piloted ~ 24 hour endurance ~ 50,000 foot ceiling**

- Bill Sweetman, HALE/MALE Unmanned Air Vehicles Part 1: History of the Endurance UAV, International Air Power Review Vol. 15

But What Do You Call It?

- **Drone**
- **Remotely Piloted Aircraft (RPA)**
- **Unmanned Aerial System (UAS)**
- **Unmanned Aerial Vehicle (UAV)**

- **…the naming describes the tension surrounding it…**

How To Think About Drones

- **Unfairness**
  - **Inequality of combat playing field leads to deep anger + inspires terrorism**

  "The drone is effective. Its extraordinary precision makes it an advance in humanitarian warfare. In theory, when used with principled restraint, it is the perfect counterterrorism weapon. It targets indiscriminate killers with exquisite discrimination. But because its aim can never be perfect, can only be as good as the intelligence that guides it, sometimes it kills the wrong people-and even when it doesn't, its cold efficiency is literally inhuman."

- **Gorgon Stare**
  - **Real value of drone is ability to provide continuous / perpetual low-cost surveillance of target which allows close connection to ground forces + improved situational awareness**
  - **Drones were armed to shorten sensor-shooter loop + allow choice of strike time to minimize collateral damage**
  - **Pilots now see graphic results of their strikes**
  - **Used almost exclusively in permissive environments, would be extremely vulnerable in non-permissive environments**

  "The drone is new only in that it combines known technology in an original way-aircraft, global telecommunications links, optics, digital sensors, supercomputers, etc. It greatly lowers the cost of persistent surveillance. When armed, it becomes a remarkable, highly specialized tool: a weapon that employs simple physics to launch a missile with lethal force from a distance, a first step into a world where going to war does not mean fielding an army, or putting any of your own soldiers, sailors, or pilots at risk."

- **The Kill List**
  - **Indiscriminate strikes are counterproductive in protecting US from terror attacks**

- **Drones Don't Kill People. People Kill People**
  - **Collateral damage / civilian deaths from drone strikes has dropped to less than 3 percent**

- **Come Out With Your Hands Up!**
  - **When pursuit of al-Qaeda changes from a "war on terror" to "law enforcement", drone strikes may become illegal and ground assaults may be only way to deal with terrorists under international law as a criminal must be given opportunity to surrender and if they refuse efforts must be made to arrest them**
  - **…but raids may cause more collateral damage than drone strikes, so drone strike may be more moral choice**

  - Mark Bowden, The Killing Machines: How to Think About Drones, The Atlantic, Sep. 2013

Unmanned Underwater Vehicles

- **Ultimate stealth naval weapon**

Unmanned Ground Vehicles

- **Congress dictated that 1/3rd of military's ground vehicles should be unmanned by 2015**
  - **DARPA pushed the technology forward with "grand challenges"**
  - **Self-driving cars are on their way to civilians**
- **Military is lagging way behind due to technological challenges + funding restrictions**
  - **Moving over the ground off-road is hard**
  - **Cancellation of the US Army Future Combat System knocked it out of the technology business**

- John Markoff, New York Times, Sept 22, 2013

Revolution in Military Affairs (RMA)

- **Vision of future war, anchored in hi-tech, high price "systems"**

- **For RMA to succeed, it has to contradict the nature of war**
  - **RMA reduces war to putting fires on target**
  - **Promises to use new technology to make everything targetable - this means it promises to eliminate uncertainty, to make war transparent, to eliminate the quality that defines war - the independent hostile will of our enemy.**

- **RMA hi-tech systems are "game changing"…but the game they change is the budget game, not the wargame…the RMA's systems are stupendously expensive**

- **RMA invalidated by Winograd Commission investigating Israeli loss of Lebanese War in 2006**

  "Western militaries are in active state of denial concerning the limitations of precision weapons."

  - William Lind, The Death of the RMA, On War#224, July 2, 2007

The Thin Green Line

"Foreign Area Officer, one of the gifted loners who made a career out of following the bear over the unmapped mountain to see what he could see. Strategic scouts, linguists, gypsies with jobs, FAO's tended to be bright, curious as kids, and often damned brave, and they brought home the goods for their country. But none of them fell into the center of the normal-guy bell curve, and promotion boards were allergic to them. FAO's had been described as America's "thin green line," deployed at the edge of darkness. That may be a bit romantic and overdrawn, but his FAO's were man for man, the best soldiers he had in his command. Just didn't have enough of them, and was losing more with each force reduction board."

- Ralph Peters, Twilight of Heroes, p. 86

Focused Case Study - The FAO is the Army of One

- ## FAO = Foreign Area Officer
  - ### Specializes in a region, knows its language, culture, politics, military, history
    - But these skills not regarded as warfighting skills + not valued
- ## "David"
  - ### Area of expertise = Yemen ~ TDY to Mosul, Iraq
  - ### Jobs
    - Education of Americans, choosing translators
    - Learned how radical Islamists were using traditional smuggling routes to smuggle people, guns, money by talking to local tribesmen
    - Support for assault on Tal Afar
      - Placated Turks ~ Befriended Tal Afar's mayor

        "He is like Lawrence of Arabia" - Mayor of Tal Afar
  - ### Rewarded for his efforts by being returned to Yemen

- Greg Jaffe, In Iraq One Officer Uses Cultural Skills to Fight Insurgents, Wall Street Journal, Nov. 15, 2005

The Perfect Soldier

- **The Special Operations soldier is the future warrior**

"The twenty-first century is going to see a lot more carefully selected, intensively trained, and lavishly equipped troops. While Perfect Soldiers aren't cheap, they are effective, and they have been a long time coming."

- James F. Dunnigan, the Perfect Soldier, 2003

Soldier of the Future

- **MIT Institute for Soldier Nanotechnologies**
- **US Army Soldier Systems Center in Natick**

Jointness

- **Purple is beautiful**
- **…but Purple is hard**
    - **Why does the Army have a Navy?**
    - **Why does the Army have an Air Force?**
    - **Why does the Navy have an Army?**
    - **Why does the Navy have an Air Force?**
    - **Why do the Marines have an Air Force?**

Unjointedness

"The one other minor consideration that I wanted to put in the design was interservice rivalry (ISR). This affected both sides in similar ways and hopefully will yield some historical insights on why some less than stellar decisions were made during the war."

"The historical reality is this war (in the Pacific) was fought in an era when joint operations was a medical procedure. Although cooperation occurred, the Services of the various nations internally competed with each other for resources in a much more no holds barred manner than they do today in the US and most NATO countries. When ISR occurs in Empire of the Sun the best tactic is to separate your forces into two separate axes of advance (have you seen this somewhere before?) for the Allies or separate defensive zones for the Japanese. By concentrating your forces by service distinction you gain local coordination at the expense of strategic coordination, which is the intended effect of ISR. You will still be less efficient, but you will have an easier time of defending and attacking locally."

"One of the key features of the Pacific War is how significantly ISR drove decisions for both sides. I am not aware of any previous Pacific War game, including my earlier effort, that has dealt so harshly with this historical situation. What you have to learn to do is separate your forces, just like they did historically. You have to have a Navy and an Army sector (this is true for both players). In this manner you end up playing like the real war with not too many rules. If you want to interleave and combine your army and navy units, you have to hope that they are getting along."

- Mark Herman, Empire of the Sun

Case Study Summary - Pre-Purple - Battle for the Falklands

- **Goal**
  - **Argentina - Military dictatorship diverts citizens by taking advantage of perceived UK wishy-washiness on sovereignty**
  - **UK - Restore sovereignty by mounting a relief operation**
- **Center of Gravity (Strategy)**
  - **Argentina - Make the cost too high**
  - **UK - Keep their navy bottled up, neutralize their air force, go man to man on the ground**
- **Equipment**
  - **UK - AIM-9L Sidewinder air to air missile**
- **Training**
  - **Argentina - Conscripts ~ UK - The best**
- **Leadership**
  - **UK - "Defeat? The possibility does not exist!" ~ Colonel H. Jones**

Case Study Summary - Pre-Purple - Battle for the Falklands

- **Morale**
  - **Argentina - Navy chicken, army conscript, air force very good**
  - **UK - Parachute Regiment attack at Goose Green at 1:3 odds**
- **Tactics**
- **Intangibles**
  - **Argentina - Had no logistics once cut off**
  - **UK - Had a long tenuous logistics line, loss of Chinook helicopters leads to yomp across East Falkland**
- **Mistakes**
  - **Argentina - Not fusing bombs to detonate at low altitudes**
  - **UK - No airborne early warning aircraft led to extreme vulnerability to air attacks**
- **Outcome**
  - **War continues ~ Argentina still wants islands and still threatens UK ~ UK says maybe it can be negotiated ~ Lawfare with Beigrano**

Information Operations / High Powered Microwave Weapons

- **See Topic 12 - Information Warfare**

Nonlethal Weapons

"Set phasers on stun!"
- Captain James T. Kirk
  - The holy grail of nonlethal weapons
- Purpose
  - To enforce and do battle without killing
  - Give more choices between shouting and shooting
  - Make war less hellish

  "The less killing we do, the better."
    - Sue Payton, Deputy Undersecretary of Defense
    - Stephen Mihm, The Quest for the Nonkiller App, New York Times Magazine, July 25, 2004

Nonlethal Weapons

- **History - Somalia 1992, General Zinni**
- **Types**
  - **Active Denial System, Mobility Denial System, Modular Crowd Munition, Sponge Round**
- **Drawbacks**
  - **What happens when it becomes lethal (taser experiences)**
    - **Better name = less-than-lethal weapon**
  - **Tradeoff of safety vs. effectiveness**
  - **Does it erode the fighting edge of soldiers?**
    - **- Stephen Mihm, The Quest for the Nonkiller App, New York Times Magazine, July 25, 2004**

Nonlethal Weapons - Philosophy

"The way we currently outfit or train our people, they are confronted with these binary choices (shoot / don't shoot)…

Yet we know that combat doesn't necessarily resolve to binary choices. It's an enormously complex and dangerous undertaking. Shouldn't we have a more nuanced weapons capability to go with this?…

(Introducing nonlethals into combat)...will change the character of war...The general rule is fewer dead people is better than more dead people…

(there is a) moral imperative to suppress the violence of statecraft." - Admiral Arthur Cebrowski

- Stephen Mihm, The Quest for the Nonkiller App, New York Times Magazine, July 25, 2004

Nonlethal Weapons - Legality

- **Consistent with international law?**
  - **Chemical Weapons Convention - can't tranquilize them on the battlefield, must shoot them**
    - **Forbids the use of tear gas in offensive military operations**
    - **Malodorants most likely forbidden**
    - **Calmative agents - aerosolized fentanyl - are forbidden**
- **Can they be used for torture?**
- **Can they be used by repressive regimes to keep populations under control without bloodshed? Like 1984?**

  - Stephen Mihm, The Quest for the Nonkiller App, New York Times Magazine, July 25, 2004

Nonlethal Weapons - Usage to Date

- **Rarely used in Iraq + Afghanistan**
- **Reasons**
  - **Non exactly nonlethal, but less-than-lethal**
  - **Usage may give enemy a propaganda advantage**
  - **Troops don't want to put the effort into understanding how they can be employed + training to use them**
- **To encourage their use, need good leadership**
  - **- General Anthony Zinni**

- Dan Lamothe, Why US Troops Don't Use Pain Rays and Stun Grenades, Foreign Policy, Jan. 2, 2014

Robot Soldiers

- **Goal**
  - **Robot soldiers that see, think, act like humans**
  - **Initially remote controlled, increasingly autonomous**
  - **Combat without casualties**
- **Advantages**
  - **Don't get hungry, not afraid, don't forget orders, don't care about casualties**
  - **Much cheaper than humans with retirement benefits**
- **Disadvantages**
  - **Would bloodless combat lead to more combat?**
  - **When machines become too complex to be overseen by humans, the machines are in control - Bill Joy**
    - **- Tim Weiner, A New Model Army Soldier Rolls Closer to Battle, New York Times, Feb. 16, 2005**

Robot Soldiers

- **Asimov's 3 Laws of Robotics to prevent robots from harming people in any circumstance**
  - **1. A robot may not injure a human being or, through inaction, allow a human being to come to harm.**
  - **2. A robot must obey orders given it by human beings except where such orders would conflict with the First Law.**
  - **3. A robot must protect its own existence as long as such protection does not conflict with the First or Second Law.**

Robot Soldiers

- **US DOD wants to replace 1/3rd of its armed vehicles + weaponry with robots by 2015**
  - **Saves money**
  - **Makes casualties bloodless**
  - **Judgment can't be effected by stress**
- **US wants to give these robots increasing autonomy, including ability to decide when to use lethal force**
  - **Trying to develop an artificial conscience - a set of rules of engagement for robots to ensure their use of lethal force follows the rules of ethics**
    - **Different from Asimov's Laws of Robotics as this artificial conscience is supposed to ensure not that people are protected from robots but rather to ensure only that they are not unethically killed by robots**

- Robot Wars, The Economist, June 7, 2007

Killer App

- **Robots are a new technology that asks us not only what is possible but also what is proper**

- **New technologies affect the <u>how</u> of war (bigger boom) - but robots change the <u>how</u> and the <u>who</u> of war**

- **Humans have had a 5000 year monopoly on war - that is breaking down**

- P.W. Singer, Wired For War, lecture at the Pritzker Military Library, May 28, 2009

Wired For War

- **Because of the widespread use of robotics**
  - **Wars will become easier to start**
  - **Traditional moral + psychological barriers to killing will fall**
  - **Warrior ethos that unites soldiers will erode**
- **Moving humans off the battlefield will make wars easier to start but more complex to fight**

- P.W. Singer, Wired For War - The Robotics Revolution and Conflict in the 21st Century

Wired For War

- **Robots have potential to minimize mistakes made in combat on battlefield as operators don't fear for their personal safety**

- **Robots have a profound effect on Keegan's "impersonalization of battle" - moving the soldier even farther from his foes physically and psychologically**

- **Key question is when robots operate autonomously, who is accountable for their actions?**
    - **The hardware + software manufacturers, the commanding officer of the unit, the theater commander, etc.?**

- **Proposed rules for armed autonomous robots**
    - **Should be allowed autonomous use only of non-lethal weapons**
    - **The robot's right to self-defense should be limited**
    - **The human creators and operations of the robots must be held accountable for robot's actions**

- P.W. Singer, Military Robots and the Laws of War, The New Atlantis, Winter 2009

"Growing autonomy in weapons poses a grave threat to humanitarian and human rights law, as well as international peace and security… In modern combat it is often heartbreakingly difficult to tell the difference between a fighter and a non-combatant. Such a task relies on a soldier's wisdom, discretion and judgment; it cannot and should not be outsourced to a machine. Death by algorithm represents a violation of a person's inherent right to life, dignity and due process."

- Matthew Bolton, political scientist

No-Fear Warfare

- **US military is on verge of no-fear warfare as human combatants are replaced by robots - and this replacement may be completed in 10-20 years**

- **What are the cultural + political implications?**
  - **What kind of people will be suited + attracted to military life?**
    - **More Bill Gates than Rambo?**
  - **What kind of leadership + training will be needed?**
    - **Retention of highly trained personnel will be key**
  - **What becomes of military values such as courage, valor, honor, self-sacrifice?**
  - **What if a foreign power with better engineering talent assembles an advanced robotics force before US?**
    - **This will lead to a robotic global arms race**

- Mark Herman + Art Fritzson, War Machines, C4ISR Journal, June 2008

Distinguished Warfare Medal

- **Announced by US Secretary of Defense Leon Panetta on February 13, 2013**

- **Intended to be awarded to individuals for "extraordinary achievement" related to a military operation occurring after September 11, 2001 recognizing military achievement in cyber warfare or combat drone operations <u>for actions that did not include valor in combat</u>**

- **After uproar, canceled by US Secretary of Defense Chuck Hagel on April 15, 2013**

- **How do you recognize the warrior who does not physically go in harms way…especially when they are the warrior of the future?**

- Peter W. Singer, A Military Medal For Drone Strikes? Makes Sense. Washington Post, Feb. 15, 2013

One Vision For The Future of War

"Today, we are at a major inflection point, one in which technology is reshaping the way wars are fought.

The future of warfare will be shaped by

- the role of ever-smaller drones;

- robots on the battlefield;

- offensive cyber war capabilities;

- extraordinary surveillance capabilities, both on the battlefield and of particular individuals;

- greater reliance on Special Operations Forces operating in non-conventional conflicts;

- the militarization of space,

- and a Moore's Law in biotechnology that has important implications for bio-weaponry."

- The Future of War Project, New America Foundation

New Rules of War

- **Complexity of modern warfare can be managed with 3 rules:**
    - **"Many and Small" beats "Few and Large"**
        - Quite small units can wield great power when connected to others - such as friendly indigenous forces - and when networked closely with a handful of aircraft
    - **Finding matters more than flanking**
        - The enemy of future has to be found before it can be fought
        - Military has to go from shooting organization to sensory organization
        - Use small networked corps of finders which will empower the "Many and Small"
    - **Swarming is the new surging**
        - Swarming lets terrorists make most of slender resources - form of attack undertaken by small units coming from many directions or hitting many targets at same time
        - Standing armies can be reduced in size, reconfigured, trained to fight in this manner
- **Bottom line - develop fighting networks with lateral communications links between sensors + shooters**

- John Arquilla, The New Rules of War, Foreign Policy, Feb. 11, 2010

Autonomous Weapons

"A weapon is autonomous if it makes its own decisions with cognitive capability that is built through experience (learning, training, experiments, exercise, etc.)"

- John Robb, Autonomous Weapons, Global Guerillas, Oct. 28, 2015

"We will soon be categorizing everything in the military inventory into dumb systems and autonomous systems. Systems that you improve through use - from the weapon you carry to the weapon you fly to the weapon you work with - and the systems with locked in performance."

- John Robb, Owners Are Now Training Their Cars to Drive Autonomously, Global Guerillas, Oct. 31, 2015

"A supersoldier isn't a weapon. He/she is a teacher, a coach, and a trainer of autonomous weapons."

- John Robb, Supersoldiers and Autonomous Weapons, Global Guerillas, Nov. 20, 2015

Autonomous Weapons - 3 Views

"I think it's pretty clear that military mastery in the 21st century is going to depend heavily on the skillful blending of humans and intelligent machines. It is no surprise that many advanced militaries are investing substantially in this field."

"I think one of the problems in the discourse is the objection that a robot might accidentally kill the wrong person, or strike the wrong target. The way to address is this is to point out that in a war, there will always be accidents where the innocents are killed. This has been true for millennia..."

"Autonomous weapons systems will make fewer mistakes. They don't get tired, they don't get angry and look for payback, they don't suffer from the motivated and cognitive psychological biases that often lead to error in complex military environments."

"An autonomous weapon operates without human control, but that does not mean that it is free from human input. There are a lot of elements to the chain [of command]; the unfortunate term is the 'kill chain.' There will be people and machines intermixed within the chain."

"There is absolutely an arms race in autonomous systems underway."
- John Arquilla, professor at U.S. Naval Postgraduate School

- Keith Kirkpatrick, Can We Trust Autonomous Weapons? Communications of the ACM, Dec. 2016

Autonomous Weapons - 3 Views

"I would imagine that [as autonomous weapons] become more capable, they will be seen to operate more effectively than systems with humans in the loop. Once you introduce swarms or you have to respond to adversary systems that are autonomous, humans in the loop will create real disadvantages."

"There are good arguments about increased moral hazard with autonomous weapons systems, that they make killing too easy. I think they also have an effect on traditional military virtues that need to be examined. What does it mean to be courageous, for instance, when your machines take the risks and do the killing?"

- Lieutenant Colonel Michael Saxon, professor at U.S. Military Academy

- Keith Kirkpatrick, Can We Trust Autonomous Weapons? Communications of the ACM, Dec. 2016

Autonomous Weapons - 3 Views

"I think we're probably closer to the kind of capabilities we're talking about than most people think, and Russia and China are, too. These are dangerous systems. In the wrong hands, these things could really be awful."

"At the end of the day, it's kind of like nuclear weapons. Everybody's going to get them, and the people that don't get them are going to want them. The best we can hope for is that we slow it down."

- Major General (Ret.) Robert H. Latiff, adjunct professor at University of Notre Dame + George Mason University

- Keith Kirkpatrick, Can We Trust Autonomous Weapons? Communications of the ACM, Dec. 2016

Battlefield in 2050

- **Faster battle rhythm will push humans out of decision-making loop**
- **Rather than being "in the loop" like a pitcher, humans will be "on the loop" like an umpire**

  "The difference being that in the former, human decisions are a required step in a process and thus humans are exercising positive control; while in the latter, humans can only observe the behaviors that are taking place (and in some cases the decisions that have been made and the reasons why), but they can only act after the fact or in anticipation of expected behaviors."

  - Visualizing the Tactical Ground Battlefield in the Year 2050

- **Humans will be enhanced through surgery or genetic engineering**

  "The battlefield of the future will be populated by fewer humans, but these humans would be physically and mentally augmented with enhanced capabilities that improve their ability to sense their environment, make sense of their environment, and interact with one another, as well as with 'unenhanced humans,' automated processes, and machines of various kinds."

  "To enable humans to partner effectively with robots, human team members will be enhanced in a variety of ways. These super humans will feature exoskeletons, possess a variety of implants, and have seamless access to sensing and cognitive enhancements. They may also be the result of genetic engineering. The net result is that they will have enhanced physical capabilities, senses, and cognitive powers."

  - Visualizing the Tactical Ground Battlefield in the Year 2050

- Patrick Tucker, In the War of 2050 The Robots Call the Shots, Defense One, July 22, 2015

Third Offset Strategy

- **First Offset Strategy - 1950's**
  - **Blunt Soviet numerical + geographical advantage in Europe through battlefield nuclear weapons**
  - **Worked until 1970's when Soviets achieved strategic nuclear parity + US did not want to risk escalation to all-out nuclear war**
- **Second Offset Strategy - 1970's**
  - **Develop conventional weapons with "near-zero miss" led to precision-guided munitions which were as effective as tactical nuclear weapons**
  - **Worked until 2010's with Russia + China now approaching precision-guided munition parity with US + proliferation of unmanned aircraft**
- **Third Offset Strategy - 2020's**
  - **How to overcome anti-access to get into theater (where enemy has precision-guided munitions parity that can be used at long-range) and area-denial once in theater (where enemy has conventional capabilities as good as you)**
  - **Has 5 building blocks**
    - **Autonomous deep-learning systems = learning machines to analyze intelligence**
    - **Human-machine collaboration for decision making = head mounted displays**
    - **Assisted human operations = wearables + exoskeletons + robotic co-pilots**
    - **Advanced human-machine combat teaming involving cooperative operations with unmanned vehicles = swarming**
    - **Network-enabled semiautonomous weapons hardened to operated in electronic warfare + cyber environments + when GPS is denied**

- Graham Warwick, Humans at the Core, Aviation Week, Jan. 18-31, 2016

Water as a Weapon

"Preventing people's access to safe water is a denial of a fundamental human right. Deliberate targeting of civilians and depriving them of essential supplies is a clear breach of international humanitarian and human rights law."

- Secretary-General Ban Ki-moon of the U.N.

- **Examples**
  - 1990's - Saddam Hussein draining Mesopotamian marshes in retribution against Shias who rose up against him + Marsh Arabs who protected them
  - 2002 - Botswana destroys water supply of Kalahari bushmen to force them out of desert so it can get diamonds there
  - 2010 - Syrian Civil War - all sides
  - 2014 - US - Detroit turns off water to people who don't pay their bills

- Thalif Deen, UN Decries Water as Weapon of War in Military Conflicts, Inter Press Service, June 2014

Personal Case Study - Rick L., M.D.

- **Role**
  - **The Purple Soldier**
- **Story**
  - **After high school, joined Army, entered Special Forces, served in Korea along DMZ**
  - **Went to college, joined Air Force as intelligence officer, served in first Gulf War, stationed in a hotel, learned to how brief generals**
  - **Went to medical school, did radiology residency, joined Navy as a physician, out qualified everyone on the shooting range**
  - **Married a Korean National who became Navy nurse at US Marine Corps base**
  - **…there is a transition here…from trigger puller to intelligence to humanitarian…**
    - **Less Clausewitz, more Sun Tzu**

Personal Case Study - How to Make (Military) Friends and Influence People

- **Top down**

  "Presented to the University of Iowa College of Medicine and the University of Iowa Hospitals and Clinics by the Catholic Medical Center, Catholic University of Korea, in celebration of agreement. 1996.5.20 Seoul, Korea"
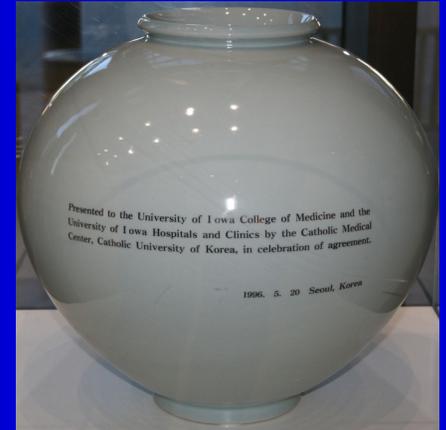
- **Bottom up**

  "Please accept this book on the first Olympics as a small token of appreciation from the Hellenic Navy Medical Directorate for your supply of Virtual Naval Hospital CD-ROMs to us." - CDR K.N., M.D., Hellenic Navy

  - **Another great example of bottom up**

    - **Russian FAO - Colonel Tom Wilhelm in Mongolia**

      "Colonel Wilhelm is a great man. He makes us like America so much." - Mongolian officer

  - **Robert D. Kaplan, The Man Who Would Be Khan, The Atlantic, March 2004**

Class Simulation

- **Weapons of the future aspects**

Poem

The muffled drums sad roll has beat
the soldiers last tattoo
No more on life's parade shall meet
that brave and fallen few.

On eternal camping ground,
their silent tents are spread,
and glory guards with solemn round
the bivouac of the dead
- Theodore O'Hara, Bivouac of the Dead

Questions for Further Discussion

- **How is technology changing the way wars are fought?**

- **Is Fourth Generation Warfare the way to counter network-centric warfare?**

Reading Assignments

- **TED Talks for this Topic**
    - **http://www.warstudiesprimer.org/ToLearnMore.html**

Recommended Reading to Learn More

- **Non-fiction**
- **Fiction**
  - **Arthur C. Clarke - Superiority**
  - **Vernor Vinge - True Names**
- **Movies**
- **Simulations**

Conclusion

"Any sufficiently advanced technology is indistinguishable from magic."

- Arthur C. Clarke

"When an elderly but distinguished scientist says something is possible, he's more than likely right; when he says something is impossible, he's almost certainly wrong."

- Arthur C. Clarke

Conclusion

"The future is here. It's just not widely distributed yet."

- William Gibson

"You can't say civilization don't advance, however, for in every war they kill you in a new way."

- Will Rogers

Conclusion

"Every truth passes through three stages before it is recognized. In the first it is ridiculed, in the second it is opposed, in the third is recognized as self evident"

- Arthur Schopenhauer

"First they ignore you. Then they laugh at you. Then they fight you. Then you win."

- Mohandas Gandhi

Conclusion

"The ultimate cause of our failure was a simple one: despite all statements to the contrary, it was not due to lack of bravery on the part of our men, or to any fault of the Fleet's. We were defeated by one thing only - by the inferior science of our enemies."

- Arthur C. Clarke, Superiority

Topic 24

There Will Be No Fighting in the War Room (Lawfare)

Song

No one likes us
I don't know why.
We may not be perfect
But heaven knows we try.
But all around even our old friends put us down.
Let's drop the big one and see what happens.

We give them money
But are they grateful?
No they're spiteful
And they're hateful.
They don't respect us so let's surprise them;
We'll drop the big one and pulverize them.

Now Asia's crowded
And Europe's too old.
Africa's far too hot,
And Canada's too cold.
And South America stole our name.
Let's drop the big one; there'll be no one left to blame us.
    - Randy Newman, Political Science

Thematic Quote

"Battle - the ghastly effort to kill young people with state sanction"

- Victor Davis Hanson

"Better to be judged by 12 than carried by six."

- Anonymous

Thematic Quote

"To ask permission is to seek denial"

- Scott McNealy

"Rules are for the guidance of wise men and the obedience of fools"

- Neil Burnside, The Sandbaggers

Thematic Quote

"A lawyer with his briefcase can steal more than a hundred men with guns."

- Vito Corleone

The Painting

Painting Name

   - Artist's Name

   (Location of painting)

The Question

Are there rules to the conduct of war?

Rules of War

- ## Rome
  - ### In wars the laws are silent
- ## Christian Europe
  - ### Just-war doctrine: when it is permissible to fight + what means could be used
- ## Islam
  - ### Laws of jihad: when it is permissible to fight + what means could be used
    - #### Accepted by Sunni + Shia for a thousand years
      - Prohibited deliberate killing of non-combatant women + children
      - …often extended to elderly, infirm, male peasants who did not fight, Muslims living among enemy

- Noah Feldman, Islam, Terror and the Second Nuclear Age, NY Times Oct 29, 2006

Rules of War

- **Violation of laws of jihad ban on killing women + children begins when regimes of Muslim world become secular**
  - **First in Ottoman Empire's Armenian genocide in World War I**
  - **Saddam Hussein's gassing of Kurds**
  - **Darfur genocide**
- **First suicide bombing in 1983 against US Marine barracks in Lebanon**
  - **Suicide bombing inconsistent with Islamic tradition as Koran forbids suicide**
  - **9/11 is high water mark of suicide bombing**
    - **As act of offensive jihad it was condemned by prominent Sunni + Shia scholars**

- Noah Feldman, Islam, Terror and the Second Nuclear Age, NY Times Oct 29, 2006

Rules of War

- **Evolution of laws of jihad ban on killing non-combatants in a defensive jihad**
  - **Israel occupies Palestine**
    - **All Israelis must serve in the military, so no Israeli is a true noncombatant**
  - **US occupies Saudi Arabia**
    - **Bin Laden says my jihad is not offensive but defensive - Americans choose their government and thus choose the policies of their government…this makes them fair game as noncombatants**
  - **…the classic restrictions on the killing of women, children, Muslims in jihad have been deeply undermined in last decade**
  - **- Noah Feldman, Islam, Terror and the Second Nuclear Age, NY Times Oct 29, 2006**

Value of Life in Western Way of War

"Well, as you know, we figured it all out last night. We lost a P-40 and a PBY. We broke up Admiral Kester's plan for the PT Boats. We wasted the flying time of P-40's, F-4U's, and F-6F's like it was dirt. We figured the entire mission cost not less than $600,000. Just to save one guy in the water off of Munda. I wonder what the Japs left to rot on Munda thought of that? $600,000 for one pilot. Buzz Adams took a healthy swig of whisky. He lolled back in the tail killing chair of the Hotel De Gink. But it's sure worth every cent of the money. If you happen to be that pilot."

- James A. Michener, Tales of the South Pacific, p. 106

Definitions - International Red Cross and Red Crescent Movement

- International humanitarian movement with stated mission to protect human life and health, to ensure respect for the human being, and to prevent and alleviate human suffering, without any discrimination based on nationality, race, religious beliefs, class or political opinions

- Consists of several distinct organizations that are legally independent from each other, but are united within the Movement through common basic principles, objectives, symbols, statutes, and governing organs

  - International Committee of the Red Cross (ICRC) - private humanitarian institution founded in 1863. 25-member committee has unique authority under international humanitarian law to protect life and dignity of victims of international and internal armed conflicts

  - International Federation of Red Cross and Red Crescent Societies (IFRC) - founded in 1919 and today coordinates activities between the 185 National Red Cross and Red Crescent Societies within Movement. On international level, Federation leads and organizes, in close cooperation with National Societies, relief assistance missions responding to large-scale emergencies

  - National Red Cross and Red Crescent Societies exist in nearly every country. Currently 185 National Societies are recognized by ICRC and admitted as full members of Federation. Each entity works in its home country according to principles of international humanitarian law and statutes of international Movement

Definitions - Geneva Convention

- **Geneva Conventions - four treaties that set standards for international law for humanitarian concerns**
- **Chiefly concern treatment of non-combatants and prisoners of war**
- **Do not affect use of weapons in war, which are covered by Hague Conventions of 1899 and 1907 and Geneva Protocol on the use of gas and biological weapons of 1925**
    - **First Geneva Convention "for the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field" (first adopted in 1864, last revision in 1949)**
    - **Second Geneva Convention "for the Amelioration of the Condition of Wounded, Sick and Shipwrecked Members of Armed Forces at Sea" (first adopted in 1949, successor of the 1907 Hague Convention X)**
    - **Third Geneva Convention "relative to the Treatment of Prisoners of War" (first adopted in 1929, last revision in 1949)**
    - **Fourth Geneva Convention "relative to the Protection of Civilian Persons in Time of War" (first adopted in 1949, based on parts of the 1907 Hague Convention IV)**

Definitions - International Criminal Court

- **In 1948, following the Nuremberg and Tokyo Tribunals, the United Nations General Assembly recognized the need for a permanent international court to deal with atrocities of the kind committed during World War II**

- **The International Criminal Court was established in 2002 as a permanent tribunal to prosecute individuals for genocide, crimes against humanity, war crimes, and the crime of aggression, although it cannot currently exercise jurisdiction over the crime of aggression**

  - **Could be seen as permanent successor to temporary International Criminal Tribunal for the former Yugoslavia which prosecuted Slobodan Milosevic**

- **A number of states, including China, India and the United States, are critical of the Court and have not joined**

Definitions - Uniform Code of Military Justice (UCMJ)

- **Foundation of military law in the U.S.**

Definitions - Lawfare

- **A form of warfare waged by using the field of international law to attack an opponent on moral grounds by seizing the earliest opportunity to set up regulations against them**

- **Most useful to an international actor that cannot confront another power militarily**

- **Lawfare can be used in concert with media warfare to bring public pressure against an operation by an enemy power which would weaken the enemy's resolve**

Definitions - Lawfare

- **Lawfare - Growing use of international law claims as a tool of war**
  - Goal - gain moral advantage over your enemy in court of world opinion, and potentially a legal advantage in national + international tribunals
- **There is a progressive effort to remake traditional laws of war, attempting to import into the area of armed conflict concepts + norms from world of domestic law enforcement**
  - Irregular enemy combatants be treated as POWs
  - Military force can only be applied in minimum amounts necessary to neutralize an opponent
  - Ban on weapons felt to be inherently indiscriminate
- **Effect of lawfare, if it succeeds, would make it exceptionally difficult for law-abiding state to wage war in the traditional manner - bringing full weight of armed forces to bear against the enemy - without prompting charges of war crimes**
  - Goal is criminalization of traditional warfare
  - David B. Rivkin + Lee A Casey, Lawfare, Wall Street Journal, Feb 23, 2007

Lawfare

- **Definitions**
    - **Originally - Use of law as a weapon of war**
        - **Method of warfare where law is used as a means of realizing a military objective**
    - **Currently - The strategy of using or misusing law as a substitute for traditional military means to achieve an operational objective**
- **To maintain Clausewitz's balance needed for success in war between the trinity of people / government / military, military personnel must adhere to the laws of war or they risk losing the people's support**
    - **This adherence to the rule of law is a center of gravity that can be attacked**
        - **Lawfare has emerged as the principal effects-based air defense methodology employed by US adversaries**

Charles J. Dunlap, Lawfare: A Decisive Element of 21st-Century Conflicts? Joint Forces Quarterly, 3rd Quarter 2009

What Goes Around Comes Around

- **Geneva Conventions of 1929 governed humane treatment of POWs**
  - **USSR declined to adhere to it**
    - **Germans treated Soviet prisoners brutally, killing many - 3 million died in captivity**
    - **When tables were turned, Soviets took revenge**
  - **Japan applied Geneva Convention "with any necessary amendments"**
    - **POWs had disgraced themselves by surrendering + their lives were forfeit**
    - **Encouraged brutality towards them**
      - **Bataan Death March ~ Slave labor on Burma - Thai Railway**
      - **42% US prisoners did not survive**
- **Churchill maintained treating POWs well is wise as it increases chance your men will be well treated**
- **Any dilution of Geneva Conventions could expose Americans to more terror rather than protect them from it**
  - Niall Ferguson, Don't Flout Geneva - Or The Tables Could Be Easily Turned, Daily Telegraph, Oct 1, 2006

Falklands War 1982

- **British declare 200 mile exclusion zone around Falkland Islands**
  - **Argentinean cruiser Belgrano was outside the zone but steaming towards British task force**
  - **Belgrano sunk by British submarine because it was threat to British task force**
  - **Resulted in rest of Argentinean Navy returning to port and playing no further role in war**
- **Families of Argentinean sailors who died sued United Kingdom in 2000 in International Human Rights Court in Strasbourg**
  - **Claimed because Belgrano was outside of exclusion zone, unlawful force was used against it**
  - **Suit rejected on grounds it was submitted "too late"**
  - **- Belgrano Legal Action Fails, BBC News, July 19, 2000**

Watching the Detectives

"The mobilization of legal procedures within a law-abiding army, such as the British, against its own people, has the most undesirable effects. No one wants law-breakers to go unpunished. The reality is, however, that once military police and military lawyers start investigations, the normal understandings and assurances of mutual confidences on which normal army life subsists go out of the window.

Military lawyers, in the nature of their job, cast their net as wide as possible. Comrade is questioned against comrade. Suspicion is aroused. The law of self-protection sets in. Men who would never in everyday life impugn a brother in arms are driven to hint at wrongdoing. Worse, those in positions of command who would normally object to any accusations being leveled against their subordinates become affected by the desire to distance themselves from criminal proceedings."

  - John Keegan, Bad Law is Making a Just War So Much Harder to Fight, Daily Telegraph, June 2, 2005

Watching the Detectives

"Those who were in the front line, an intrinsically lonely place, suddenly find themselves lonelier still, without any protectors among those they are taught to regard as their natural protectors.

The legal code, in short, is highly destructive of the emotions, comradeship, mutual concern and responsibility of seniors for juniors on which the military system operates. Traditionally, the British Army always recognized that the intrusion of civilian law into its way of life was undesirable. In consequence it maintained its own legal system in which, under court martial, soldiers were judged by other soldiers."

- John Keegan, Bad Law is Making a Just War So Much Harder to Fight, Daily Telegraph, June 2, 2005

Focused Case Study:
Colonel Jorge Mendonca

- **2003 - Youngest Lt. Colonel in British Army**
  - **420 men of Queen's Lancashire Regiment policed 1.5 million citizens of Basra**
    - **Chaotic postwar situation, extreme heat, little sleep**
    - **Demanded his men treat Iraqi's with respect**
- **2004 - Received Distinguished Service Order**
  - **He had shown "A degree of bravery that puts him well above any other individual in brigade"**
  - **His "personal contribution" to the fair treatment of Iraqis was pivotal in "winning the hearts and minds"**
  - **He "led from the front and constantly puts himself in harms way"**
- **2005 - Accused of neglect after death of Iraqi in custody of his unit**
  - **Iraqi beaten to death while in custody for suspicion of terrorism**
  - **- Various articles, Daily Telegraph, 2005-2007**

Focused Case Study:
Colonel Jorge Mendonca

- **The background**
  - **At politician's behest, British Army undertook witch hunt to put an officer on trial alongside enlisted men accused of abusing Iraqi civilians**
  - **This destroys trust between Armed Forces + its political and military commanders**
- **The issue**
  - **Can commanders be held accountable for every soldier's actions?**
    - **He is not accused of mistreating Iraqi civilians**
    - **He is accused of neglect of duty to prevent soldiers from such**
- **2007 - Cleared by court martial of neglect of duty due to lack of evidence, as were most of the enlisted men**
  - **Leaves Army because they then threatened him with internal disciplinary action**
  - **- Various articles, Daily Telegraph, 2005-2007**

Health & Safety in War

- **The European Convention on Human Rights, Article 2, imposes a duty on authorities to protect the right to life**
  - **It has been found to apply to British soldiers while on British military bases abroad and on the battlefield**
  - **Families of soldiers killed on the battlefield can sue the British government for negligence and pursue damages**
  - **So - soldiers have human rights, and they don't lose those on the battlefield**
- **The British government feels the battlefield is a place which is incompatible with the idea of a right to life**

  "We will continue to make this point in future legal proceedings as it can't be right that troops on operations have to put the European Convention on Human Rights ahead of what is operationally vital to protect our national security." - British Defence Secretary Philip Hammond
- **Does this make war undoable on the ground?**

- Iraq Damages Case: Supreme Court Rules Families Can Sue, BBC News, June 19, 2013

Chinese Lawfare to Reshape International Law of the Sea

- **1982 Law of the Sea Convention**
  - **A state has territorial waters extending up to 12 nautical miles from shore**
  - **A state has an Exclusive Economic Zone extending up to 200 nautical miles from shore**
  - **All states enjoy the right to conduct military activity from 12-200 nautical miles from shore**
    - **But China now wants to ban activities with a military purpose in that 12-200 nautical mile zone**
      - **Is conducting lawfare in form of scholarly articles + symposia to make its point**
  - **Wish to ban freedom of navigation in this zone and allow increased state sovereign authority in this zone**

- James Kraska + Brian Wilson, China Wages Maritime Lawfare, Foreign Policy Blog, March 11, 2009

Legal Targeting

- **First night of Operation Enduring Freedom in Afghanistan**
  - **CIA Predator identifies convoy fleeing Kabul with Mullah Omar, leader of Taliban, and tracks it to building**
  - **CIA + 5th Fleet did not have authority to fire - CENTCOM did**
    - **CENTCOM JAG "doesn't like this so we're not going to fire"**
    - **Instead bounce missile off front door, see who comes out, keep following Omar…**
    - **…But no one comes out, Omar leaves later and never seen again, short time later building is destroyed**
- **Failure to strike immediately a cultural issue - slow degradation of system due to political correctness - we want you to kill the guy, but not the guy next to him - no collateral damage allowed**
  - **- Seymour Hersh, Kings Ransom, New Yorker, Oct 16, 2001**

Legal Targeting

- **President Bush made low collateral damage a major criteria of conduct of campaign in Afghanistan to avoid angering US Islamic allies**
  - **Therefore you must get approval to strike sensitive targets**
  - **CENTCOM in Tampa had the authority to hit these sensitive targets and turned out to be a bottleneck as CENTCOM JAG was overly cautious and kept refusing strikes on targets believing they were enemy traps set up to create collateral damage**
- **Bottom line - collateral damage concerns hamstrung air campaign**

  - Thomas E. Ricks, Target Approval Delay Cost Air Force Key Hits, Washington Post, Nov 18, 2001

Legal Targeting

- **Military lawyers are not making the tough calls**
- **US military uses "Tier System" methodology to assess risk of collateral damage with respect to specific targets**
  - **Uses computer modeling**
  - **…the more precise the model, the seemingly greater its influence**
- **Question is: should levels of civilian damage have veto power over a strike?**
  - **The cost of not hitting a target - of not taking more risk - has been shown to impede better military outcomes**

    "In the end, the assessment of potential collateral damage must come to this: a balance of obvious humanitarian concerns with the need to fight effectively; victory, too, must be valued as a humanitarian goal in itself." - USAF

    - William Arkin, The Myths of Military Lawyers, Washington Post, Dec. 14, 2001

Collateral Damage in Pakistan

- **400 drone strikes conducted in Pakistan over 10 years to weaken Al Qaeda + suppress Taliban fighters who use it as sanctuary**
  - Dominant US narrative on use of drones in Pakistan - "a surgically precise + effective tool that makes the US safer by enabling 'targeted killing' of terrorists with minimal downsides or collateral impacts."
  - New America Foundation study - drones killed 250 - 300 civilians over 10 years
  - Bureau of Investigative Journalism study - drones killed 400 - 950 civilians over 10 years
  - CIA study - civilian deaths caused by CIA drones each year were "typically in the single digits."
  - Independent International Commission on Kosovo study - in 1999 NATO-led war in Serbia, where manned jets used laser-guides bombs, 500 Serbian civilians + 300 Serbian soldiers were killed
- **Total death toll from drone strikes in Pakistan is 2000 - 4000 people**
  - If 950 civilians have been killed - drones have spared more civilians than manned jets in past wars
  - If CIA figures are correct, drones killed > 20 fighters for each civilian which is huge leap in precision
- **So increasing accuracy of strikes -> decrease in collateral deaths**
  - How good is good enough?

      - Steve Coll, The Unblinking Stare, New Yorker, Nov. 24, 2014

Military Environmental Waste

- **Active Sonar noise pollution**
- **Biological weapons decontamination**
- **Bombing range decontamination**
- **Disposal of ships containing toxic substances**
- **Nuclear waste disposal**

Case Study Summary - Battle of the Marine Mammals

- **Goal**
  - **Environmentalists - Stop use of low + medium frequency active sonars which are believed to cause mass beaching of whales**
  - **USN - Train like you fight and fight like you train to counter threat of small silent diesel submarines in coastal waters**
- **Center of Gravity (Strategy)**
  - **Lawfare**
- **Equipment**
  - **The US legal system**
- **Training ~ Leadership ~ Morale**
  - **Alliance of National Resources Defense Council, International Fund for Animal Welfare, Cetacean Society International, Ocean Futures Society**

Case Study Summary - Battle of the Marine Mammals

- **Tactics**
  - **Environmentalists - Sue in federal court + get temporary + hopefully permanent restraining orders against the use of these sonars**
  - **USN - Usage of active sonar is important for national security, asks for exemptions to the orders**
- **Intangibles ~ Mistakes**
  - **First came to my attention at talk of Jean-Michel Cousteau in Maui**
- **Outcome**
  - **Compromise - Navy can use active sonar but must watch for marine mammals + cease usage if they are in area**
  - **Federal judge rules military is bound by environmental laws + national security does not trump them**
  - **Navy asks for exemption from White House, gets it**
  - **Exemption then overturned by federal judge**
  - **Supreme Court ultimately rules in favor of US Navy**

- Adam Liptak, Supreme Court Rules For Navy in Sonar Case, New York Times, Nov 13, 2008

Vozrozhdeniye Island in Aral Sea

- **Soviets tested biological weapons there from 1930's - 1991**
- **Every type of agent tested on every type of animal**
- **Soviets tried to decontaminate anthrax before they left**
  - **US 10 years later found some of those anthrax spores were still viable so tried decontamination again**
- **Aral Sea is now drying up, the island is becoming a peninsula, animals can escape from island to mainland, humans are entering island to scavenge scrap**
- **Concern is that weapons-grade pathogens survive underground in rodent + insect reservoirs and could be released into humans**

  - Aral Sea Island Poses Major BioThreat, UPI, Feb 26, 2004

Kahoolawe

- **Small, low, dry Hawaiian Island with severe soil erosion due to overgrazing**
  - **Used as training ground for Polynesian navigators - "Pathway to Tahiti"**
  - **Had huge adze quarry, adze from this quarry found in Tahiti, proving ancient Polynesians did journey back + forth across Pacific**
- **1941 - US Navy takes control to use as training range for gunfire support, amphibious landings, bombing**
- **1976 - Protestors Kahoolawe Ohana sues in Federal Court to stop its use for military training, to obey environmental laws, to protect cultural resources on it**
- **1990 - Live fire training ends**
- **1994 - US Navy transfers title to State of Hawaii**
  - **Navy promises to clean up unexploded ordinance - progressed slowly, never finished but 9 million pounds of metal removed**
- **Now overseen by Kahoolawe Island Reserve Commission**
  - **Being held in trust for future Native Hawaiian Sovereign entity**
  - **Goal is to restore island with native vegetation + slow down soil erosion**
  - **- Sheila Sarhangi, Saving Kahoolawe, Honolulu, Nov 2006**

Clemenceau

- **French aircraft carrier retired in 1997**
  - **Much asbestos removed in France**
  - **Sold to ship breaker in India for break up**
- **Greenpeace protested transfer of ship to India, sued in French + Indian courts**
  - **France should deal with its own toxic waste rather than outsourcing it to India where poor workers in poorly regulated industry would deal with it + potentially be injured**
  - **Transfer of ship is violation of Basel Convention on Hazardous Waste which prohibits transport of toxic materials from one country to another**
  - **Supreme Court of India decides to look into it…**
  - **France's highest administrative court - Conseil d'Etat - says amount of asbestos on board must be determined, in agreement with Greenpeace**
  - **France orders ship home ~ Ultimately scrapped in United Kingdom**

  - BBC News, Chirac Orders Toxic Ship Home, Feb 16, 2006
  - BBC News, French Toxic Ship returns Home, May 17, 2006

Clemenceau

"The case of the Clemenceau has become a symbol of the moral injustice of rich countries dumping their toxic waste on poorer countries. Having tried and failed to offload the ship to other countries, France has finally been forced to clean up a toxic mess of its own making…

We believe that rich governments should look at the precedent of the Clemenceau case and take action to reduce the toxic wastes they produce, and to stop the dumping of toxic waste in all forms on poor countries. Only effective action will prevent another Clemenceau-style scandal."

- Victory: Toxic French Warship Clemenceau Turned Back to France, Greenpeace, Feb 16, 2006

Nuclear Waste

- ## US approach
  - ### Will have to be done eventually for 224+ ships
    - Sealed nuclear reactor cut out of submarine
    - Taken to trench at Hanford Nuclear Reservation
    - Burial package is corrosion resistant for 300 years
- ## Russian approach
  - ### 189 nuclear submarines decommissioned
    - 16 secretly sunk at sea
    - 126 waiting to be scrapped in floating storage
      - No effort to remove nuclear fuel or radioactive waste
      - Leaking

- Jack Dorsey, Nuclear Ships: Millions to Build and Now Millions to Trash, Virginian Pilot, July 4, 2007
- Sergei Bagov, Russia Struggles with Post Soviet Nuclear Legacy, Environmental News Service, Sept 19, 2002

Personal Case Study - Jean Michel Cousteau

- **Role - Marine explorer and environmentalist**
- **Story**
  - **March 2000 on Maui at Kaanapali Beach Hotel**
  - **Invited to lecture following hula show**
  - **Spoke effortlessly and eloquently about environment and what we have to do to preserve it**
  - **Spoke about danger to marine mammals from low frequency active sonar**
  - **…in 2006, his new television documentary series inspired President Bush to create the Northwestern Hawaiian Islands National Monument, the largest marine protected area in the world**
    - **That's power!**

Class Simulation

- **Lawfare and Environmental aspects**

Poem

Slide text

Questions for Further Discussion

- **Are there rules to the conduct of war?**
  - **What are the rights of combatants?**
  - **What are the rights of non-combatants?**
  - **What are the rights of internally displaced persons?**
  - **What are the rights of refugees?**
- **What is the balance between using the law to protect non-combatants and restricting / constraining the actions of combatants?**
- **How can wars be won by law alone (lawfare)?**
- **Are civilian lawyers the fifth column of the 21st century?**
- **Are military lawyers the fifth column of the 21st century?**

Reading Assignments

- **TED Talks for this Topic**
  - **http://www.warstudiesprimer.org/ToLearnMore.html**

Recommended Reading to Learn More

- **Non-fiction**
- **Fiction**
- **Movies**
  - **Breaker Morant**
- **Simulations**

Conclusion

"You have to have men who are moral... and at the same time who are able to utilize their primordial instincts to kill without feeling... without passion... without judgment... without judgment. Because it's judgment that defeats us."

- Colonel Kurtz, Apocalypse Now

Topic 25

Corpsman Up! (Military Medicine)

Song

If you could see my mind, if you really look deep, then maybe you'll find
That somewhere there will be a place, hidden behind my comedian face

You will find somewhere there's a house, and inside that house there's a room
Locked in the room in the corner you see
A voice is waiting for me, to set it free, I got the key, I got the key

Voices, I hear voices

In my head the voice is waiting, waiting for me to set it free
I locked it inside my imagination, but I'm the one who's got the combination
Some people didn't like what the voice did say
So I took the voice and I locked it away, I got the key, I got the key

Voices, I hear voices, voices, I hear voices

Don't look back, look straight ahead, don't turn away, then the voice it said
Don't look back, yesterday's gone, don't turn away, you can take it on
    - Russ Ballard, Voices

Thematic Quote

"The real question children should ask of veterans is not 'What did you do in the war, daddy?' but 'What did the war do to you?'"

- Niall Ferguson

Thematic Quote

"...wars have a way of going on and on in your mind and your soul long after you've left the battlefield."

- Philip Caputo

The Painting

Gassed

  - John Singer Sargent

  (Imperial War Museum)

The Painting

Marines Call It That 2,000 Yard Stare

   - Tom Lea

   (United States Army Center of Military History in Fort Lesley J. McNair, Washington, D.C.)

The Military Physician's Ethical Dilemma

- **When physician joins military, context in which they practice medicine changes**
  - **As civilian, taught to serve interest of patient with proviso they do no harm**
  - **As military physician, taught to serve interest of military**

    "To conserve the fighting strength"

    - motto US Army Medical Corps

    "His patient is the army rather than the individual"

    - Major Dugmore Hunter, WW II military psychiatrist
  - **…Excusing a soldier from battle may negatively impact the war effort…**

- Edgar Jones, Doctors at War, The Lancet, May 22, 2008; 371: 1658-1659

The Question

Is an ounce of prevention worth a pound of cure?

An Ounce of Prevention is Worth a Pound of Cure

- **Throughout history, disease and non-battle injuries have been the largest cause of military casualties**

- **This changed in 20th century with advent of preventive medicine**

- **Now we take almost no casualties this way**

Focused Case Study - Afghanistan

- **Soviet Union occupation ~ 1980's**
  - **Soviets practiced poor personal hygiene, poor nutrition, and poor pest control**
  - **Result was that 67% of those who served in Afghanistan were hospitalized for diseases.**
    - **There were 115,000 cases of hepatitis, 31,000 cases of typhoid fever, and 234,000 cases split between plague, malaria, cholera, diphtheria, meningitis, heart disease, shigellosis, amoebic dysentery, rheumatism, heat stroke, pneumonia, typhus-paratyphus**

- Grau LW, Jorgensen WA. Medical Support in a Counter-Guerrilla War: Epidemiologic Lessons Learned in the Soviet - Afghan War. US Army Medical Department Journal; May-June 1995.

Focused Case Study - Afghanistan

- ## US liberation ~ 2000's
  - US reviewed the Soviet literature on their time in Afghanistan and focused on preventive medicine: put soldiers through fitness drills, provide them with cold weather gear, let them acclimate to altitude, give them bottled water to drink, adequate nutrition and enforced personal hygiene.
  - Result was in US Army field hospital during Operation Anaconda, most wounds treated were shrapnel injuries to arms and legs
    - They have had 10 casualties suffering from high altitude (acute mountain sickness).

- P Constable, When All Patients Are Created Equal, Washington Post, March 10, 2002

Focused Case Study - Naval Medicine

- **The more things change the more they stay the same - common medical problems facing naval providers at sea have not significantly changed in past 200 years**

- **In 18th century sailors were healthy young men, prevention was key to keep them healthy**
  - **Maintaining cleanliness of men + ship, fumigating for infestations, maintenance of fresh air supply, improving nutrition, minimizing drunkenness**

- **Common medical problems in 18th + 21st centuries are upper respiratory tract disease, diarrhea, sexually transmitted disease, low back problems, mental illness**
  - **Other common medical problems in 18th century were infectious diseases (tuberculosis, malaria, yellow fever, plague) + scurvy**

- **Common surgical problems in 18th + 21st centuries are hernias, trauma, dental problems**

- D'Alessandro DM, D'Alessandro MP, Hendrix MJC, Bakalar RS. Information Needs of Naval Primary Care Providers and Patients at Sea. Military Medicine 1999; 164(2): 127-131.

Germany's Secret Chemical Weapon - Pervitin

- **In 1937, inspired by use of Benzedrine by US athletes in 1936 Olympics, Germans created Pervitin - a synthetic version of methamphetamine**
  - **Produced intense sensations of energy + self-confidence + was marketed as general stimulant**
  - **By 1938 its regular use was wide-spread in Germany**
  - **Military advantage was that it was solution to army's problem of fatigue**
- **During invasion of Poland in 1939 was found to banish hunger, stimulate physical + mental activity, reduce inhibitions + fear**
- **Audacious plans for invasion of France in 1940 required German troops to keep going without rest**
  - **"I demand that you do not sleep for at least 3 days and night." - General Heinz Guderian**
    - **Panzer troops appeared to be armored supermen who could advance day + night without sleep to British + French**
- **Distances in Operation Barbarossa were too vast for Pervitin to provide victorious edge to Germans**

- Antony Beevor, The Very Drugged Nazis, New York Review of Books, Mar 9, 2017

Smoke 'Em If You Got 'Em

- **Prior to World War I, factory-made cigarettes were < 10% of tobacco consumption + were seen as woman's product**
- **US Army begins free daily ration of cigarettes in June 1918 to soothe nerves + mask stench of trench warfare**
- **In World War I ration was 4 cigarettes / day, in World War II ration was 12-28 cigarettes / day**
- **Cigarette production + distribution were strategically important**
- **This ration continued until 1973 and caused cigarette smoking to become an American habit**
  - **Military was responsible for establishing + entrenching the cigarette in American society**
  - **Cigarette smoking was sign of patriotic masculinity**
  - **In 1950, 80% of American men smoked**
- **Ration ends in 1973 post-Vietnam with establishment of all volunteer force to save money**
- **By 1986 Department of Defense had reported that smoking was harmful to health + began anti-smoking initiatives**
- **Today, cigarette ration is gone but soldier-nicotine bond persists, especially in combat zones**
- **Bius, Joel, Smoke 'Em If You Got 'Em: The Rise and Fall of the Military Cigarette Ration**

Drugs and War

- **Alcohol**
  - **Tax on vodka funded Russian empire, Bolsheviks prohibited vodka's use during Revolution but afterwards used tax on vodka to fund state**
  - **Tax on alcohol funded British empire**
- **Tobacco**
  - **Tax on tobacco funded British empire**
  - **YMCA reversed antismoking stance in World War I**
- **Caffeine**
  - **Tea made Britain a narco empire**
- **Opium**
  - **Made Britain a narco empire**
  - **Chiang Kai-Shek partnered with opium dealers to suppress Communist finances, but when Communists took over they conducted most successful war on drugs ever**
  - **US in Afghanistan props up Afghan government, a narco state, to fight drug-funded insurgency**
- **Speed**
  - **Nazis were anti-drug but pushed methamphetamines on soldiers + Hitler was a junkie**
  - **Methamphetamine used also in World War II by US, Britain, Japan**
- **Cocaine**
  - **US allowed Panama's President General Noriega to traffic in cocaine thus creating a narco state until US decided he was national security risk**
- **Summary - countries take hypocritical + contradictory positions about psychoactive + addictive drugs as imperatives of war override health concerns about drugs**

- CJ Chivers, A History of War in Six Drugs, New York Times, Jan. 3, 2020

Definition of Combat
Post Traumatic Stress Disorder

"The persistence into civilian life, after danger, of the valid adaptations you made to stay alive when other people were trying to kill you."

- Jonathan Shay, M.D.

Combat Stress

- **Names**
  - **Civil War**
    - Nostalgia - symptoms of apathy, loss of appetite, diarrhea, fever
    - Irritable Heart - symptoms of shortness of breath, palpitations, exertional chest pain, headaches, dizziness
  - **World War I**
    - Soldier's Heart = Irritable Heart
      - Treated with PIE (Proximity [near frontline], Immediacy [as soon as problem identified], Expectancy [of prompt return to duty])
    - Shell Shock - symptoms of mental breakdown in battle, dazed + detached manner, exaggerated startle response, severe anxiety
  - **World War II - Battle Fatigue / Combat Stress Reaction**
  - **Vietnam - Post Traumatic Stress Disorder**
- **Kicks in after ~ 200 days of combat**
  - **Older soldiers + reservists more prone to it**
  - **Treatment - Diagnose it correctly, treat troops quickly + close to front**
  - **Good living conditions can delay it to ~ 300 days of combat**
    - Practical Treatments for PTSD, StrategyPage, Apr 24, 2007
    - CAPT Lee Mandel MC USN, Combat Fatigue: A Long-Term Diagnosis, The Grog Ration, Sept-Oct 2007

Achilles in Vietnam

- **Wars psychic wounds have always existed**
- **Spiritual injuries were consequences of soldiers feeling mistreated by commanders**
  - **Think Achilles' feelings towards Agamemnon**
- **Deepest danger of PTSD is loss of trust in others**
  - **Achilles drops out of life, leads to death of Patrocolus**
  - **Odysseus' lack of trust makes him deceive his men, leading to their death**
  - **Trust makes us feel safe which is good for our mental + physical health**
    - **In Vietnam individual unit replacement system leads to lack of trust + unit cohesion which leads to PTSD**
    - **- Jonathan Shay, Achilles in Vietnam**

Odysseus in America

- **Challenge - Odysseus demonstrates success in practice of traits essential for success in battle - cunning, intelligence, deception, reconnaissance, manipulation, secrecy, spying**
  - **After you become proficient in these skills, how do you readapt to civilian life + become good citizen? How do you reverse this process?**
  - **What are spiritual + psychic pitfalls awaiting veterans returning to civilian life?**
- **Greek word for Ulysses = "Oulixes" which has as its root "Oule" = scar**
  - **Voyage of Odysseus is metaphor of what it is like for the combat veteran to seek re-entry to civilized society -- the visit to dead comrades in the underworld, being captured by drugs or sex, feeling adrift for many years**
- **How to prevent PTSD -> build up trust through**
  - **Social cohesion - rotate units not individuals**
  - **Competence as ethical imperative**
  - **High + sustained ethic of leadership**
  - **- Jonathan Shay, Odysseus in America**

Preventing Psychological Injury

- **Keep members of unit together, give them good leaders, put them through intense realistic training**
  - **Cohesion, leadership, training**
  - **Each is a protective factor against psychological injury**
    - **Together their synergism is enormous**
  - **Cohesion is about mutual trust; trust lubricates the friction of warfare**
  - **Jonathan Shay, Achilles in Vietnam: Combat Trauma and the Undoing of Character / Odysseus in America: Combat Trauma and the Trials of Homecoming**
    - **Thomas Ricks, Modern Soldiers from Ancient Texts, Washington Post, September 17, 2004**

What Prevents Combat Stress?

"Good leadership meant good morale, and this, in turn, meant a low psychiatric casualty rate and good performance...The company commander or platoon leader...saw to it that his men got the best possible food under the circumstances; sent blankets up to them at night if it were at all possible; made every effort to keep them well supplied with water and ammunition; saw to it that promotions were fair; made certain that good work and gallantry were properly recognized; he got mail, news and information to them when possible; and he made sure that violations of rules were treated quickly and fairly. But above all, by these actions, he made his men feel they were not alone, that he was backing them up with everything humanly possible. That, plus technical ability, constitutes a good leader."

- Herbert X. Spiegel, American Journal of Orthopsychiatry, July 1944

Vaccination Against PTSD

- **17% of US troops returning from Iraq + 11% returning from Afghanistan have PTSD**

- **Most common treatment is exposure-based therapy**

- **Virtual reality has been used to help with exposure-based therapy**

- **What if you exposed soldiers via virtual reality to horrors of war before they deploy and mentally train them how to cope with horror**

  - **Can you psychologically vaccinate them to PTSD?**

- **Define physiological markers of stress**

  - **In future if markers do not change post-psychological vaccination consider not deploying them to combat**

                    - Battle Ready? The Economist, Nov 17, 2012

PTSD Today

- **Acute PTSD is universal natural human adaptation to danger - response you want if your life is in danger**
  - **Be vigilant, react to strange noises, sleep lightly / wake easily, have flashbacks that remind you of danger, be anxious to keep you ready to fight, be depressed to keep you from being too active + putting yourself at risk**
  - **Is unavoidable in short term, mostly self correcting in long term**
  - **20% of people exposed to trauma get chronic PTSD**
- **Combat is hard to recover from because combat is interwoven with positive experiences difficult to separate from harm**
- **Killing an enemy soldier or witnessing one being killed more stressful than being wounded**
  - **Worst of all is having friend die**
- **People who fail to overcome trauma are often people already burdened by psychological issues through inheritance or child abuse**
- **There is no statistical relationship between suicide and combat**

- Sebastian Junger, How PTSD Became a Problem Far Beyond the Battlefield, Vanity Fair, June 2015

PTSD Today

- **Problem doesn't seem to be trauma on battlefield as much as re-entry into society**
  - **What about modern society is so mortally dispiriting to come home to?**
    - **Ancient human behaviors in war that typify good soldiering can't be easily found in modern societies - Loyalty, inter-reliance, cooperation**

"What all these people seem to miss isn't danger or loss, per se, but the closeness and cooperation that danger and loss often engender. Humans evolved to survive in extremely harsh environments, and our capacity for cooperation and sharing clearly helped us do that. Structurally, a band of hunter-gatherers and a platoon in combat are almost exactly the same: in each case, the group numbers between 30 and 50 individuals, they sleep in a common area, they conduct patrols, they are completely reliant on one another for support, comfort, and defense, and they share a group identity that most would risk their lives for. Personal interest is subsumed into group interest because personal survival is not possible without group survival. From an evolutionary perspective, it's not at all surprising that many soldiers respond to combat in positive ways and miss it when it's gone."

- Sebastian Junger, How PTSD Became a Problem Far Beyond the Battlefield, Vanity Fair, June 2015

PTSD Today

- **Stresses soldiers exposed to are even greater on person in isolation, which is our normal state of affairs in our technological society**

- **Soldiers miss war because it was experience of human closeness they can't find at home - the closeness of community + tribe**

  - **Group affiliation + cooperation trigger surge of oxytocin which creates feeling of well-being + promotes greater levels of trust + bonding**

  - **In the military you are almost never alone, this intimacy duplicates evolutionary past + creates continual oxytocin reward system**

  - **When soldiers return to modern society they undergo oxytocin withdrawal**

"Our whole approach to mental health has been hijacked by pharmaceutical logic. PTSD is a crisis of connection and disruption, not an illness that you carry within you."

- Gary Barker, anthropologist

- Sebastian Junger, How PTSD Became a Problem Far Beyond the Battlefield, Vanity Fair, June 2015

PTSD Today

"PTSD is a disorder of recovery, and if treatment only focuses on identifying symptoms, it pathologizes and alienates vets. But if the focus is on family and community, it puts them in a situation of collective healing."

> - Brandon Kohrt, anthropologist + psychiatrist

- Israel is only modern country that retains sufficient sense of community to mitigate effects of combat on mass scale because of national military service + proximity to combat
  - Israelis benefit from shared public meaning of war
- Shocking disconnect for veterans is that what they went through does not seem relevant back home
  - Combat veterans saying they want to go back to war is healthy response to emptiness of modern life
- Create a homecoming ceremony for veterans that focuses on dramatic retelling of combat experiences to warrior's community - would return experience of war to entire nation, rather than just leaving it to those who fought

- Sebastian Junger, How PTSD Became a Problem Far Beyond the Battlefield, Vanity Fair, June 2015

Cognitive Combat Intimacy

- **Moral injury**
  - anguish that resulted from "perpetrating, failing to prevent or bearing witness to acts that transgress deeply held moral beliefs" - Clinical Psychology Review
  - "intentionally doing something that you felt was against what you thought was right" - Waye Chapelle, USAF

  "I shall argue what I've come to strongly believe through my work with Vietnam veterans: that moral injury is an essential part of any combat trauma. Veterans can usually recover from horror, fear and grief once thy return to civilian life, so long as 'what's right' has not also been violated." - Jonathan Shay, M.D.

- **Aerial warfare in the past was antiseptic from airman's point of view**
- **Aerial warfare today is extremely intimate from airman's point of view**
- **Airmen are suffering from PTSD in the form of a moral injury**
- **The incidence of this is increasing due to increasing number of drone missions conducted**
- **What does this portend for a future of warfare that will be increasingly conducted with standoff weapons overseen by remote operators?**

- Eyal Press, The Wounds of the Drone Warrior, New York Times Magazine, June 13, 2018

The Responsibility of Command

"There's physical trauma and then there is mental trauma and sometimes they are together. Physical trauma is something that is scary but you can at least see it, you know it when it happens. Even a concussion you can see on medical testing. Mental trauma is much harder because it is cumulative. My experience is it is not one single event, it is cumulative. It's like courage. People say the more you fight the more courageous you get. That is really not my experience. My experience is the more you fight, courage is something that drains a little bit because it takes out of you and I think trauma is like that particularly on young people in a war that is very difficult to understand because the reinforcement that comes. You know we have sort of a macho culture. We can't help it. In one way it's good, in one way it's bad. You know somebody gets hurt and you say "How you doing soldier?" and they go "I'm fine sir" whether they're fine or not. You want them to say that. You don't want them to start crying and whining but you don't want to take them at their word either. You want to say "Hey you've been through a lot and we have to think about that." So we've got to get a culture and I think we've made a lot of progress at it, that first says everybody who goes through it is impacted. I don't care who you are, you're not the same when you come out and so we're going to have to deal with that, no matter whether you don't feel it, nobody can see it, you've got to deal with that."

- General Stanley McChrystal, Commander, Joint Special Operations Command from 2003 to 2008 in talk at Pritzker Military Library on Feb. 21, 2013

Shakespeare Knew PTSD

"O, my good lord, why are you thus alone?
For what offence have I this fortnight been
A banish'd woman from my Harry's bed?
Tell me, sweet lord, what is't that takes from thee
Thy stomach, pleasure and thy golden sleep?
Why dost thou bend thine eyes upon the earth,
And start so often when thou sit'st alone?
Why hast thou lost the fresh blood in thy cheeks;
And given my treasures and my rights of thee
To thick-eyed musing and cursed melancholy?
In thy faint slumbers I by thee have watch'd,
And heard thee murmur tales of iron wars;
Speak terms of manage to thy bounding steed;
Cry 'Courage! to the field!' And thou hast talk'd
Of sallies and retires, of trenches, tents,
Of palisadoes, frontiers, parapets,
Of basilisks, of cannon, culverin,
Of prisoners' ransom and of soldiers slain,
And all the currents of a heady fight.
Thy spirit within thee hath been so at war
And thus hath so bestirr'd thee in thy sleep,
That beads of sweat have stood upon thy brow
Like bubbles in a late-disturbed stream;
And in thy face strange motions have appear'd,
Such as we see when men restrain their breath
On some great sudden hest. O, what portents are these?
Some heavy business hath my lord in hand,
And I must know it, else he loves me not."

                      - Lady Percy to her husband in Henry IV Part I

Computing Case Study Summary - Virtual Naval Hospital

- **Goal**
  - Maximize readiness by creating + curating medical digital library that can be used as Medical reference / Health promotion / Knowledge management tool
- **Center of Gravity (Strategy)**
  - Function as unofficial depository library for Navy Medicine
- **Technology / Equipment**
  - Linux ~ Apache ~ Lowest common denominator Web technology ~ CD-ROMs
- **Training**
  - Used Web so none required
- **Leadership + Morale**
  - Key intermediaries ~ very high morale
- **Tactics**
  - Needs assessment ~ Problem based interface ~ Focus on nomadic user ~ Continuous quality improvement

Computing Case Study Summary - Virtual Naval Hospital

- **Intangibles**
  - **Biggest advantage was being outsiders to Navy Medicine**
- **Mistakes**
  - **Biggest disadvantage was being outsiders to Navy Medicine**
- **Outcome**
  - **Maximized readiness**
  - **Heavily used, highly regarded, economically cost effective**
  - **To succeed…one must focus initially and then consistently on population served and what their mission is and tailor digital library to their needs**
    - **Result will be a tool that is heavily used + sincerely appreciated**
  - **Consistently over delivered + came in under budget -> defunded**
  - **Our focus was in operating with Sailors and Marines at the tip of the spear…not in operating within BUMED bureaucracy**
  - **Once our clinical champion in Navy retired, we were taken out politically**
  - **Like all good veterans, continues to serve**

Personal Case Study - Lt. Jeff H., MD.

- **Role - Battalion Surgeon for US Marines**
- **Story**
  - **Deployed to Somalia for 6 months in 1993, in Mogadishu and in the bush in Bardera**
  - **Primary mission to keep battalion healthy + ready for battle**
  - **Spent huge amount of time on preventive medicine**
  - **Reported to battalion CO who listened to him**
    - **One battalion CO who did not listen to his battalion surgeon in Somalia lost 1/3 of their unit to sleeping sickness or malaria for failure to take precautions against them**

Personal Case Study - LCDR Willard H, M.D.

- **Role - Flight surgeon for US Marine composite helicopter squadron**
- **Story**
  - **USS Guam ARG and 22nd MEU (SOC) in 1996**
    - **Mediterranean cruise -> IFOR in Adriatic Sea - > Liberia**
  - **To Liberia, responding to civil war**
    - **Reinforced US embassy, evacuated non-combatants**
    - **Helped set up battalion aid station in embassy**
      - **"Doc, you can never have too many trigger pullers or doctors"**
    - **Stories of flying with helicopter pilots up rivers**

Personal Case Study - CDR Kenneth W., RAN

- **Role - Professionally, a physician's assistant**
- **Story - Director of Operational Medicine for US Navy National Medical Information Management Center**
  - **The only Australian naval officer to serve in an operational medical billet on a US Navy ship (helicopter carrier)**
  - **The only Australian officer to directly command US naval medical personnel**
- **A sailor in every sense of the word**
  - **President, HMAS Cerebrus Sailing Club**

Personal Case Study - Lt Robert P., M.D.

- **Role - Battalion surgeon**
- **Story**
  - **USS Iwo Jima ARG and 26th MEU in 2003**
    - **Mediterranean cruise -> Flew into Kirkuk / Mosul Iraq in April / May for 1 month -> Djibouti -> Albania -> Malta -> Liberia -> Spain**
  - **Lessons learned**
    - **You plan, plan, plan --- and then things happen**
    - **You've got to live in the gray (to get things done)**
    - **Was senior battalion surgeon - spent a lot of his time in planning**
      - **Learned about organization, planning, coordination**
    - **Way to deal with politics is to tell people what they want to hear and then go do the right thing**
    - **Chiefs make the service run**
  - **Most proud of how he has helped former corpsmen get health care training opportunities once they left Navy**

Personal Case Study - Colonel Jon K., MD.

- **Role - Army National Guard physician with 109th Medical Battalion**
- **Story**
  - **First career with IBM**
  - **Second career in medicine**
  - **Practicing Emergency Medicine in US**
  - **Medical missions to Balkans, Rwanda**
  - **Operation Iraqi Freedom**
    - **Multiple tours**
    - **Identified bodies of Saddam Hussein's sons after they were killed**
    - **Creating civilian emergency medical services in Iraq**
    - **Flight surgeon**
  - **…Is a Native American, member of the Iroquois Nation**

Personal Case Study - Major Akira F

- **Role**
  - **Major, Japanese Ground Self Defense Force**
  - **Radiologist**
  - **Served in Iraq with Japan Self-Defense Forces Iraq Reconstruction and Support Group**
- **Story**
  - **Brilliant resident held back by his command of English**
    - **As his English improved he blossomed**
  - **On the way to Radiology Board exam, flight canceled due to weather - Took all-night taxi cab ride from Cincinnati to Louisville - Arrived at hotel exam center at 7 am + was offered chance to take exam the next day - Demanded to take it immediately + passed it on first try**
    - **Modern day medical samurai!**

Class Simulation

- **Medical aspects**

Poem

No doubt they'll soon get well; the shock and strain
  Have caused their stammering, disconnected talk.
Of course they're 'longing to go out again,'-
  These boys with old, scared faces, learning to walk.
They'll soon forget their haunted nights; their cowed
  Subjection to the ghosts of friends who died,-
Their dreams that drip with murder; and they'll be proud
  Of glorious war that shatter'd all their pride...
Men who went out to battle, grim and glad;
Children, with eyes that hate you, broken and mad.
    - Siegfried Sassoon, Survivors

Questions for Further Discussion

- **What scars are left on a soldier after war?**

- **Does playing first person shooter videogames decrease the incidence of combat stress in soldiers?**

- **Analyze the military physician's ethical dilemma in practicing the Hippocratic Oath while keeping their troops healthy so they may go kill and be killed by others**

Reading Assignments

- **TED Talks for this Topic**
  - **http://www.warstudiesprimer.org/ToLearnMore.html**

Recommended Reading to Learn More

- **Non-fiction**
  - **Homer - The Odyssey**
- **Fiction**
- **Movies**
  - **M*A*S*H**
- **Simulations**

Conclusion

The mission of the US Navy, which includes the US Marine Corps, is to maintain, train, and equip combat-ready naval forces capable of winning wars, deterring aggression, and maintaining freedom of the seas.

The mission of the US Navy Medical Department is to support the combat readiness of the uniformed services and to promote, protect, and maintain the health of all those entrusted to their care, anytime, anywhere.

Conclusion

"Look, all I know is what they taught me at command school. There are certain rules about a war and rule number one is young men die. And rule number two is doctors can't change rule number one."

- Lt. Col. Henry Blake in the TV series M*A*S*H

Topic 26

All We Are Saying - Is Give Peace a Chance
How to Keep the Peace / Prevent Wars

Song

When someone makes a move
Of which we don't approve,
Who is it that always intervenes?
U.N. and O.A.S.,
They have their place, I guess,
But first send the Marines!

For might makes right,
And till they've seen the light,
They've got to be protected,
All their rights respected,
'Till somebody we like can be elected.

Members of the corps
All hate the thought of war,
They'd rather kill them off by peaceful means.
Stop calling it aggression,
O we hate that expression.
We only want the world to know
That we support the status quo.
They love us everywhere we go,
So when in doubt,
Send the Marines!

                    - Tom Lehrer, Send the Marines

Song

Ev'rybody's talkin' 'bout
Bagism, Shagism, Dragism, Madism, Ragism, Tagism
This-ism, that-ism, ism ism ism
All we are saying is give peace a chance
All we are saying is give peace a chance

(C'mon)
Ev'rybody's talkin' 'bout
Minister, Sinister, Banisters and Canisters,
Bishops, Fishops, Rabbis, and Pop Eyes, Bye bye, Bye byes
All we are saying is give peace a chance
All we are saying is give peace a chance

(Let me tell you now)
Ev'rybody's talkin' 'bout
Revolution, Evolution, Masturbation, Flagellation, Regulation,
Integrations, mediations, United Nations, congratulations
All we are saying is give peace a chance
All we are saying is give peace a chance

- John Lennon, Give Peace a Chance

Song

Imagine there's no heaven
It's easy if you try
No hell below us
Above us only sky
Imagine all the people
Living for today...

Imagine there's no countries
It isn't hard to do
Nothing to kill or die for
And no religion too
Imagine all the people
Living life in peace...

You may say I'm a dreamer
But I'm not the only one
I hope someday you'll join us
And the world will be as one

- John Lennon, Imagine

Thematic Quote

"War appears to be as old as mankind, but peace is a modern invention"

- Henry Maine

Thematic Quote

"Peace is hard work"
- Simon Peres

Thematic Quote

"To fight and conquer in all your battles is not supreme excellence; supreme excellence consists in breaking the enemy's resistance without fighting."

- Sun Tzu

The Painting

Space Twins

- Paul Calle

(U.S. Postal Service)

The Question

- ## How do you prevent a war?

- ## Is peace over-rated?

  "In Italy for thirty years under the Borgias they had warfare, terror, murder, bloodshed, but they produced Michelangelo, Leonardo da Vinci and the Renaissance. In Switzerland they had brotherly love; they had 500 years of democracy and peace. And what did that produce? The cuckoo clock."

  - Harry Lime in The Third Man

Zinni on Geopolitics

"In America, we look at the world from two powerfully opposed angles of vision. We are either 'engaged' or 'isolationist.'

The engaged - people like Wilson, Marshall, Truman - believe we can prevent conflicts by actively shaping the environment that produces them, by directly involving our military, diplomatic, and economic capabilities in the world to make conditions better, to stabilize the various regions, to build partnerships, and to do it collectively…In the long run, they see engagement as less costly than any of the alternatives."

- Anthony Zinni, Battle Ready, p. 317

Zinni on Geopolitics

"The isolationists…see the world as so big, so messy, so out of control, that nobody can fix it. And even if we could help a little here or there, dozens of other hopeless cases lie festering. And besides, who says we have any responsibility for the rest of the world anyway?…Who said we have to suffer all the risks and shoulder all the costs of making the world better? Foreign aid is just another way to throw good money down a bottomless hole…Yes we have friends we'll continue to support. We have interests that we will protect. But that's all the involvement in the world that we want or need."

- Anthony Zinni, Battle Ready, p. 317

The Realist Creed

- **Order comes before freedom**
- **Work with the material at hand**
- **Think tragically in order to avoid tragedy**
- **Not every problem has a solution**
- **Interests come before values**
- **American power is limited**
- **Passion and good policy often don't go together**

- Robert Kaplan, The Realist Creed, Forbes.com, Nov. 25, 2014

Zinni on Diplomacy While CINC

"I met with local people from all levels of society to get a variety of views on issues. I didn't just want the views of leaders…the meetings...gave me a full sense of the key issues in the region.

I also traveled frequently to the region on 'listening' trips, building personal relationships, and experiencing various cultures firsthand.

My first trips as CINC to the Area of Responsibility were dedicated to building relationships. I insisted on taking no issues to the regional leaders on the initial trips. I was not going out there to talk business. I wanted to listen to the concerns of the people and hear their views of our role."

- Anthony Zinni, Battle Ready, p. 327

Use of the Military to Prevent Wars

- **Contain and deter enemies using military force**

- **Cold War is an excellent example**

    "I often say that the U.S. military is the greatest single force for good that the world has ever seen. It held the line against the bad, allowing for its deconstruction, and the universalization of our economic model, to be followed, through our continued success, by the universalization of our political model."

    - Thomas P.M. Barnett

Grand Strategies - Containment

- **Guided US foreign policy during long struggle against Soviet communism**
  - Russian communists as an implacable, confident enemy who were certain that the God of history was on their side. They "cannot be charmed or talked out of existence."
  - Central pillar of U.S. strategy, "must be that of a long-term, patient but firm and vigilant containment of Russian expansive tendencies. It is important to note, however, that such a policy has nothing to do with outward histrionics: with threats or blustering or superfluous gestures of outward 'toughness.' "
  - Soviet communism, "bears within it the seeds of its own decay."
  - "It is clear that the main element of any United States policy toward the Soviet Union must be that of long-term, patient but firm and vigilant containment of Russian expansive tendencies."
    - George F. Kennan, The Sources of Soviet Conduct, Foreign Affairs, July 1947

Focused Case Study - Containment

- **Cold War Containment Grand Strategy -p. 30**
  - **Wise men led by George Kennan in 1946**
    - **Identified main sources of mass violence in the system over last quarter century: militarist Germany, expansionist Soviet Union, imperialist Japan**
    - **Created a logical long-term strategy: buy off two losers from WW II, wait out the third**
    - **The dream: perhaps by end of century both Germany and Japan would be so pacified and economically integrated into a resurgent West they would never again pose a threat to global peace, and maybe Soviet Union would collapse of its own accord and join dominant Western rule set in perpetual peace**

    - Walter Isaacson and Evan Thomas, the Wise Men: Six Friends and the World They Made

    - Thomas P.M. Barnett, The Pentagon's New Map

Wisdom of the Elder

"Anyone who has ever studied the history of American diplomacy, especially military diplomacy, knows that you might start in a war with certain things on your mind as a purpose of what you are doing, but in the end you found yourself fighting for entirely different things that you had never thought of before…

War has a momentum of its own, and it carries you away from all thoughtful intentions when you get into it…

But also, there is a very, very basic consideration involved here, and that is that whenever you have a possibility of going in two ways, either for peace or for war, for peaceful methods or for military methods, in the present age there is a strong prejudice for the peaceful ones. War seldom ever leads to good results."

- George Keenan at age 101 in 2005

Case Study Summary - Cold War

Begins 1946 Churchill speech ~ Ends 1991 collapse USSR

- **Goal**
    - **"The best battle is the battle that is never fought" - Sun Tzu**
- **Center of Gravity (Strategy)**
    - **Containment strategy ~ Mutually Assured Destruction**
- **Equipment**
    - **Strategic Air Command**
- **Training - Leadership - Morale**
    - **Curtis LeMay ~ Peace is our Profession**
- **Tactics**
    - **Proxy wars - Middle East, Vietnam**
    - **Wait for USSR's economy to collapse; speed up process by lowering price of oil**
- **Intangibles ~ Mistakes**
- **Outcome**
    - **No World War III ~ Communism defeated ~ The Coming Anarchy**

The Soviet Collapse

- **Collapse of Soviet Union is story of grain + oil**
  - **Forced collectivization of farms led to sharpest fall of productivity in grain production in 20th century. Russia had been biggest exporter of grain before World War I but now became biggest importer of grain**
  - **Grain imports had to be paid for in hard currency**
  - **Soviet economy depended upon production + export of oil + gas**
  - **In mid-1970's when grain imports were needed most, oil prices were high**
  - **Some of oil revenues were spent by Soviets on invasion of Afghanistan, Saudi Arabia viewed this invasion as first step towards Soviets taking over Middle East oil fields**
  - **In 1985, Saudi Arabia stopped protecting price of oil to regain its market share, increasing oil production fourfold leading to fourfold decrease in price of oil costing Soviet Union $20 billion / year**
  - **Soviet Union had 3 choices**
    - **Dissolve Eastern European Empire + charge them hard currency for oil + gas**
    - **Drastically reduce food imports**
    - **Radically cut military-industrial complex**
  - **They choose 4th choice - borrow money - but Western banks would not loan them money - money would have to come from Western governments which would come with political conditions - they could not accept their conditions + went bankrupt**
  - **Lessons learned**
    - **No one can accurately predict fluctuations of oil prices**
    - **Authoritarian regimes, which display a façade of strength, are fragile in crisis**
  - **- Yegor Gaidar, The Soviet Collapse: Grain and Oil, American Enterprise Institute, April 2007.**

"Peace is our profession"

    - Motto of the Strategic Air Command

"The Cold War didn't just end, it was won"

    - Motto of the Society of the Strategic Air Command

Personal Case Study - NATO vs. Warsaw Pact

- **Strategy**
  - **Soviet - seize Germany ~ NATO - defend Fulda Gap**
- **In 1985 I lived in Augsburg, West Germany for a month and traveled extensively at height of Reagan-era Cold War**
  - **There were US soldiers everywhere we went in Augsburg - especially at McDonalds and Kentucky Fried Chicken**
  - **It was an armed camp - every bridge was labeled for military load it could handle**
  - **When we went to beach, US soldiers were everywhere, acting like crazy US teens would act**
  - **Herr Seitz would look at them, shrug and call them silly boys**
  - **But the purpose of those silly boys was to deter a Soviet attack, and fight and die to defend West German soil if there was an attack**
  - **US soldiers liked the West Germans and their beer and married many of their women**
  - **What did the West Germans really think of this 50 year occupation?**

From Deterrence to Preemption

- **US National Security Strategy used to be one of deterrence against the Soviet Union**
- **Now the US National Security Strategy is one of preemption - against Iraq, Iran, North Korea**
  - **This has not gone over well in theory or in practice (Iraq)**
- **Can a strategy of preemption work?**
  - **Case study - Osirak**
  - **Destroy an Iraqi nuclear reactor before it can produce weapons grade plutonium**

Focused Case Study - Preemption - Osirak - 1981

- **Destruction of Iraqi nuclear reactor before it became operational by Israeli air force**
  - **Precision bombing before precision weapons**
- **Weapon is everything - F-16**
- **Logistics is everything**
- **Planning is everything**
- **Training is everything**
- **Secrecy is everything**
- **Politics not allowed to defeat the plan (concern that Israel would be criticized severely for raid)**

"If I have a choice of being popular and dead or unpopular and alive, I choose being alive and unpopular." - Ariel Sharon

- Roger Claire, Raid on the Sun

Case Study Summary - Osirak - 1981

- **Goal**
  - Prevent Iraqi nuclear reactor 12 miles from Baghdad from becoming operational
- **Center of Gravity (Strategy)**
  - Destroy it from the air
- **Equipment**
  - US satellite imagery of reactor, 8 F-16's with 2000 pound dumb bombs for the attack, F-15's for combat air patrol
- **Training**
  - Excellent
- **Leadership**
  - Prime Minister Begin was for the raid, leader of opposition Peres was against the raid, Peres was ahead in polls so Begin wanted to launch raid before election
- **Morale**
  - High
- **Tactics**
  - Overfly Jordan + Saudi Arabia - attack from West to East with the setting sun at their backs - dive bomb
- **Intangibles**
  - King Hussein of Jordan saw F-16's fly over his yacht, sent warning message to Iraq which was not received by anyone in authority
- **Mistakes**
  - Leader of squadron who was added to raid at last minute + missed with both his bombs
- **Outcome**
  - Complete success - in 80 seconds, 14/16 bombs hit the reactor
  - Iraq publicizes strike immediately, world condemns Israel

                                    - John Correll, Air Strike at Osirak, Air Force Magazine, Apr. 2012

Focused Case Study - Preemption - Dayr-az-Zawr (Al Kibar) - 2007

- **Destruction of Syrian nuclear reactor before it became operational (constructed by North Korea) by Israeli air force**
  - **US demanded proof of nuclear-related activities ~ Israeli commandos provided it ~ US approved raid**
- **Syria has large Russian-made air defense system**
  - **Israelis used airborne electronic attack to temporarily disable it, allowing its aircraft to destroy the target without being detected or engaged**
  - **One aircraft does electronic attack, another aircraft monitors results**
- **F-15I aircraft took out the reactor**
  - **Sends deterrent signal to Iran**

- David A. Fulghum + Robert Wall, Cyber Combat's First Shot, Aviation Week, Nov 26, 2007

Case Study Summary - Al Kibar - 2007

- **Goal**
  - **Prevent Syrian nuclear reactor from becoming operational**
- **Center of Gravity (Strategy)**
  - **Destroy it from the air**
- **Equipment**
  - **Israeli satellite imagery of reactor, Mossad theft of pictures of inside of reactor from laptop in home of Syrian Atomic Energy Commission head in Vienna, 4-15's + 4 F-16's**
- **Training**
  - **Excellent**
- **Leadership**
  - **Prime Minister Olmert wants US to do it but US declines, then Olmert wants Israel to do it, persuades Cabinet**
- **Morale**
  - **High**
- **Tactics**
  - **Low signature strike by Israel to minimize potential of response from Syria**
- **Intangibles**
- **Mistakes**
- **Outcome**
  - **"I just want to report to you that something that existed doesn't exist anymore." - Israeli Prime Minister Olmert to President Bush**
  - **Syria never admits the strike, Israel never admits the strike, world is silent on the action**
  - **Confirmation of Begin Doctrine - no Israeli adversary in Middle East should be allowed to acquire nuclear weapons**
    - **- David Makovsky, The Silent Strike, New Yorker, Sept. 17, 2012**
    - **- Elliott Abrams, Bombing the Syrian Reactor: The Untold Story, Commentary, Feb. 2013**

Preemption in Practice

- **Global Strike is core mission of Stratcom**
  - **Started in 2004 ~ Is a preemptive attack**
  - **Capability to deliver rapid, extended range, precision kinetic (nuclear and conventional) and non-kinetic (elements of space and information operations) effects in support of theater and national objectives**
  - **Can be planned and executed in 12 hours**
  - **Involves no "boots on the ground"**

- William Arkin, Not Just a Last Resort? Washington Post, May 15, 2005

Focused Case Study - Christmas Truce 1914

- **Peace on Earth, Good Will Towards Men**
  - **Between Germans and British**
    - **Germans invented Christmas, British adopted it**
  - **Starts with German caroling and Christmas tree lighting**
  - **Leads to exchange of gifts and food**
  - **Ends with football match in No Man's Land**
  - **Why did it happen?**
    - **Shared cultural and religious bonds**
  - **Why didn't it happen again?**
    - **Only 40,000 British dead by then ~ before poison gas**
    - **- Kathryn Jean Lopez, Christmas on the Battlefield, National Review, December 22-28, 2001**

Focused Case Study - How Do You Avoid a War? The Swiss in WW II

- **How did Switzerland not get invaded by Germans?**
  - **Strength of its army**
  - **It kept Alpine rail passes linking Germany + Italy open**
  - **Its industry supplied Germany**
  - **It collaborated with Axis and Allies**
    - **Was banking + financial center with only truly convertible currency accepted worldwide**
    - **Allowed both sides to buy war material and resources, kept wheels of capitalism turning**
- **…ultimately they gained a lot of money**
  - **- Rough Guide to Switzerland 2nd Ed. 2003**

Focused Case Study - How Do You Avoid a War? The Swiss in WW II

- **But there were moral consequences - they lost their soul**
  - **Jews**
    - **Red Cross knew of death camps by fall 1942 - did and said nothing**
    - **Turned Jewish refugees back at border**
    - **"The life boat is full" - Federal Councilor Eduard von Steiger**
  - **Accepted looted gold from Germans + exchanged for Swiss francs**
  - **After war refused to release assets of dead Jews**
- **Sonderfall Schweiz (Special Case) vs. No better or worse than anyone else**
    - **Rough Guide to Switzerland 2nd Ed. 2003**

Focused Case Study - How Do You Avoid a War? The Swiss in Cold War

"Switzerland does not have an army, Switzerland is an army."

- Anonymous

"It is easy to enjoy studying war when you know you will never declare war on anyone"
- Anonymous

- Have not fought war for 500 years
- Swiss military was model for Israeli military
- All males serve 30 years ~ 650,000 man militia can be mobilized in 48 hours
  - Each soldier has his rifle and sealed ammunition at home

    - John McPhee, La Place de la Concorde Suisse, 1983

Focused Case Study - How Do You Avoid a War? The Swiss in Cold War

- **Swiss have an aptitude and appetite for war**

  "The best troops - those in whom you can have the most confidence - are the Swiss"

  - Napoleon

- **Can place entire population underground in fallout shelters**

- **Swiss Army is the melting pot of Switzerland**

  "It's usual that you are a member of the army. If not, a part of your life is missing. When we sit together in private life, we often talk about the army. Your conscience can accept it more thoroughly when you know you will attack no one."

  - Robert Jecker, Colonel in Swiss Army and President of Credit Suisse

  - John McPhee, La Place de la Concorde Suisse, 1983

Focused Case Study - Space Race

- **Three historic rationales for macro engineering projects**
  - **Warfare, monument to power, make a pile of money**
    - **- Neil de Grasse Tyson**
- **Motivation for Project Apollo was partly warfare (defeat Soviet Union) and partly monument to power**

Focused Case Study - Space Race

- **John F. Kennedy Moon Speech in Rice Stadium Sept. 12, 1962**

  "The exploration of space will go ahead, whether we join in it or not, and it is one of the great adventures of all time, and no nation which expects to be the leader of other nations can expect to stay behind in the race for space."

  "...this generation does not intend to founder in the backwash of the coming age of space. We mean to be a part of it--we mean to lead it. For the eyes of the world now look into space, to the moon and to the planets beyond, and we have vowed that we shall not see it governed by a hostile flag of conquest, but by a banner of freedom and peace."

  "Yet the vows of this Nation can only be fulfilled if we in this Nation are first, and, therefore, we intend to be first. In short, our leadership in science and in industry, our hopes for peace and security, our obligations to ourselves as well as others, all require us to make this effort, to solve these mysteries, to solve them for the good of all men, and to become the world's leading space-faring nation."

  "...only if the United States occupies a position of pre-eminence can we help decide whether this new ocean will be a sea of peace or a new terrifying theater of war."

Focused Case Study - Space Race - Phase 1 - Sneak Attack

- **Provides arena for non-military competition / decompression between superpowers**
- **Germans**
  - **First true rocket scientists - had the vision**
- **Soviets**
  - **Bypass strategic bombers ~ Build big boosters for ICBMs**
  - **Don't trust their Germans**
- **US**
  - **Believes in strategic bombers ~ Builds smaller boosters**
  - **Doesn't want to give credit to our Germans**
- **Early results for USSR**
  - **Sputnik, Gagarin - invincible**
- **Early results for US**
  - **Total panic - don't want to live under a red moon**
  - **Shift from manned space planes (X-15) to capsules (Mercury)**

Focused Case Study - Space Race - Phase 2 - Race to the Moon

- **US**
  - **Kennedy reluctantly picks long term goal of moon**
    - **"Not because they are easy but because they are hard"**
  - **Manhattan-like project**
    - **Turn our Germans loose**
    - **Turn our aerospace industry loose**
    - **Well organized and managed open process overcame adversity of Apollo 1 and made it**
      - **First humans to moon 1968, first landing on moon 1969, first science on moon 1971**
    - **Spinoffs - microelectronics / computer revolution**
  - **(Quietly performing planetary exploration)**

Focused Case Study - Space Race - Phase 2 - Race to the Moon

- **US**
  - **Apollo really was an incredible achievement given state of technology**
    - **Computational capability of Saturn V stack in 1969 = 1 cell phone in 2004**
  - **Canceled due to lack of public support, lack of funds, Nixon's desire to not want to lose a crew**

Focused Case Study - Space Race - Phase 2 - Race to the Moon

- **USSR**
  - **What do we do next?**
    - **OK, the moon then**
  - **Tremendously destructive competition between design bureaus - political machinations**
    - **Closed process**
    - **Pursuing space station at same time**
    - **But almost sent first human around the moon in 1968 in Zond just before Apollo 8**
      - **Soviet launch window to moon opened 2 weeks before US window in December 1968 but Politburo unwilling to take risk due to unreliable Zond hardware**
    - **First unmanned rover on moon**
    - **First unmanned sample return from moon**
      - **Luna 15 crashes on moon July 13, 1969 trying to beat Apollo 11 astronauts back to earth with first moon rock samples**
  - **(Quietly performing planetary exploration)**

Focused Case Study - Space Race - Phase 3 - Going in Circles

- **US**
  - **Plan**
    - **Skylab short term space station, then…**
    - **Shuttle + long term space station**
  - **Reality**
    - **Skylab, then Shuttle**
    - **Purposeless long term space station way later**
    - **Ends with loss of Columbia while doing Larry Light bulb science experiments**
  - **(Quietly dominates planetary + galaxy exploration - Pioneer - Viking - Voyager - Hubble)**
  - **Computationally ascendant**

Focused Case Study - Space Race - Phase 3 - Going in Circles

- **USSR**
  - **Dominates space station**
  - **Clones shuttle (Buran) which is unmanned!**
  - **Abandons planetary exploration**
  - **Computationally bankrupt / bereft**

Focused Case Study - Space Race - Phase 4

- ## US
  - ### Back to Apollo? - To the moon via Ares?
  - ### Marginalized in manned spaceflight
  - ### Continued triumphs of planetary + galaxy exploration
    - #### Galileo, Cassini, Pathfinder, Mars Rover, Hubble
- ## Russia
  - ### No plan
  - ### Same old hardware - Soyuz uber alles
  - ### Partners with US on space station
    - #### Strange bedfellows

Focused Case Study - Space Race - Phase 4

- **Commercial**
  - **Cater to masses - space tourism**
    - **Spaceship One is way forward**
  - **Lives are expendable**
    - **Cancels zero risk mentality**
- **China**
  - **Starts manned space program based on obsolete USSR hardware**
    - **Wants space station and to go to moon**
    - **Those who forget lessons of history…**
  - **Could it start new space race?**

Focused Case Study - Space Race

- **Who won space race?**
  - **Symbolically, technologically, scientifically - US**
  - **Operationally - USSR**

Focused Case Study - Space Race

- **It cost the U.S. ~ $25 billion to go to the moon in 1960's dollars. That would be $185 billion in 2019 dollars**

  - Douglas Brinkley

Focused Case Study - Space Race

- **"The entire lunar effort (with robotic missions and Gemini included) [cost $28 billion in original dollars and] would cost $288 billion in today's [2019] dollars. If the US prioritized the project financially the same way it did in the 1960s, the nation would have to spend $702 billion to occupy the equivalent share of GDP."**

  - Casey Dreier, A New Accounting For Apollo: How Much Did It Really Cost? The Space Review, June 17, 2019

"Space has stalled. And to get it going again, I'm afraid we need a war. War has always been good for humankind. Obviously, it's not so great when you're on the battlefield with a big leak in your torso and an arrow in your eye, but, truth be told, battlefields have very little to do with the eventual outcome of the conflict. That's rarely decided by the soldiers and the generals. It's decided by the tools they're given...

When Russia launched Sputnik 50 years ago, it was nothing more than a small radio, but the beeps it transmitted, when translated, told the listening world: "This is Russia and we'd like you all to know that our German scientists are a hell of a lot better than America's German scientists..."

The space race became what really ought to have been known as "the ego war". And it was brilliant. Because unlike in other wars, casualties were restricted to just 22 astronauts and 70 ground personnel, and the benefits to the rest of us were immense...

- Jeremy Clarkson, Why I Am a Space Nut, The Times, Oct 7, 2007

The cold war and the space race that resulted were fantastic. It was the greatest lurch forward since Victorian England decided that it could use coal to get itself an empire...

And then the Russians decided to give up, so now it's all gone wrong...

That's why I'm delighted to see Russian bombers back in NATO airspace and radioactive poison all over the restaurant tables in London. And it's why I'm delighted to note that Russia, buoyed by its new wealth and power, has announced plans to build a moon base for missions to Mars.

It means we can go back to the good old days. It means we can go to the stars."

- Jeremy Clarkson, Why I Am a Space Nut, The Times, Oct 7, 2007

One Small Step?

"We were a competitor in perhaps the greatest peacetime competition of all time: the space race - USA versus USSR. Like a war, it was expensive. Like a war, each side wanted intelligence on what the other side was doing. And I'll not assert that the space race was a diversion which prevented a war. Nevertheless, it was a diversion. It was intense. It did allow both sides to take the high road with the objectives of science and learning and exploration.

Eventually, it provided a mechanism for engendering cooperation between adversaries and then since, among others. It was an exceptional national investment for each side."

   - Neil Armstrong

What The Space Program Is Really All About

"Here on Earth we live on a planet that is in orbit around the Sun. The Sun itself is a star that is on fire and will someday burn up, leaving our solar system uninhabitable. Therefore we must build a bridge to the stars, because as far as we know, we are the only sentient creatures in the entire universe. When do we start building that bridge to the stars? We begin as soon as we are able, and this is that time. We must not fail in this obligation we have to keep alive the only meaningful life we know of."

- Wernher von Braun

Why not send robots?

"There is no computerized explorer in the world with more than a tiny fraction of the power of a chemical analog computer known as the human brain, which is easily reproduced by unskilled labor."

- Wernher von Braun

- Tom Wolfe, One Giant Leap to Nowhere, New York Times July 19, 2009

Case Study Summary - When Does a Sporting Event Transcend Itself and Become a Geopolitical Event? - Miracle on Ice in Winter Olympics 1980

- **Background - US boycotts 1980 Summer Olympics due to Soviet invasion Afghanistan**
- **Goal**
  - **For US hockey team - beat Soviets on one night in Olympics**
  - **For Herb Brooks - avenge personal humiliation of 1960 Winter Olympics where he was last player cut from team**
- **Center of Gravity (Strategy)**
  - **Play the Soviet Game**
- **Equipment / Training**
  - **Identical ~ The legs feed the wolves - so do Herbies to build them up**
- **Leadership / Morale / Tactics / Intangibles / Mistakes**
  - **Brooks used severe psychology on players - he united them against him ~ Helped them pull out of themselves what they don't know they have**

  "You were born to be here"
- **Outcome**
  - **The US beat Soviets on one night, then beat Finland for Gold medal**
  - **True team effort - The team won the awards**
  - **Greatest sports moment of 20th century - Sports Illustrated**
  - **At time of national malaise (due to Iranian Hostage Crisis), when Soviets seemed monolithic + unbeatable (due to Afghanistan), Miracle showed they could be beaten**

Focused Case Study - The Power of One - 1987

- **Mathias Rust, 19 year old West German with 50 hours flight time in his logbook decides to personally intervene in Cold War by building an imaginary bridge by flying to Moscow + giving Gorbachev advice on how to achieve world peace because he felt West Germany was a pawn under risk of nuclear annihilation between two superpowers**

- **Penetrates Soviet airspace single-handedly by flying Helsinki to Moscow in Cessna 172, lands on bridge near Red Square, taxis to Red Square + signs autographs**

- **Although spotted multiple times by Soviets, fog of war let him through**

- **Arrested by Soviets, charged, jailed, released**

- **Result was Gorbachev fired Soviet defense minister + Soviet air defense chief who had been opposing him…thus enabling him to consolidate power**

- **Punctured myth of Soviet military superiority**

- **One year later Gorbachev forges arms control agreement with President Reagan**

- **Rust never flew again, is now a banker**

- Tom LeCompte, The Notorious Flight of Mathias Rust, Air & Space Magazine, July 2005
- Chloe Hadjimatheou, Mathias Rust: German Teenager Who Flew to Red Square, BBC News, Dec. 6, 2012

Computing Case Study Summary - Human-Nets Mailing List circa early 1980's

- **Goal**
  - **Promote peace, love, understanding amongst nations and make the world a better place to live**
- **Center of Gravity (Strategy)**
  - **Design world wide computer network to facilitate this utopian vision = World Net**
- **Technology / Equipment**
  - **ARPANET ~ Mailing list**
- **Training / Leadership / Morale**
  - **The brightest luminaries in computer science + engineering on the ARPANET in early 1980's participated**

Computing Case Study Summary - Human-Nets Mailing List circa early 1980's

- **Tactics**
    - **Base design on ARPANET, a network based on trust, where everyone knows everyone else**
    - **Discussed technical, economic, social issues behind such a network and proposed implementations such as Telesophy + Xanadu**
- **Intangibles / Mistakes / Outcome**
    - **Discussions influenced + inspired many Internet pioneers**
    - **Predicted the bright side of Internet exactly**
    - **Missed the dark side of the Internet completely - anonymity, spam, cybercrime, use in terrorism, use in cyber warfare**
        - **All of these due to fact Internet's design based on ARPANET which was built on trust**
    - **Lesson learned: when designing utopia, expect the best, plan for the worst**

Liberal Democracy as Conqueror of Rival Ideologies

"The end point of mankind's ideological evolution and the universalization of Western liberal democracy as the final form of human government."

- Francis Fukuyama, The End of History, The National Interest, Summer 1989

- **Is the democratic wave breaking?**

- **How does democracy work?**
  - Adam Przeworski, political scientist
    - In country where average income is below $1,000 / year, democracy unlikely to last a decade
    - Once average income exceeds $6,000 / year, democracy practically indestructible
  - Slowly political elites must learn it is in their own interest to exclude violence from politics, take turns at governing, submit to rule of law

"The worst form of Government - except all those other forms that have been tried from time to time."

- Winston Churchill on democracy

- Niall Ferguson, Slow But Sure, Financial Times, Jan 26, 2008

Giving Peace a Chance - 1

- **Since end of Cold War, wars are less frequent + less deadly**
- **Since 1992, every form of political violence has declined, except terrorism**
  - **Number of armed conflicts fallen by 40%**
  - **Number of deadly conflicts fallen by 80%**
  - **Most armed conflicts now take place in poorest countries, but as incomes rise the risk of war declines**
  - **Period since end of WWII is longest interval without wars between major powers in hundreds of years**
  - **Most of the world's conflicts today are in Africa**
  - **Biggest death tolls don't come from actual fighting but from war-exacerbated disease + malnutrition**
    - **Can account for 90% war-related death toll**

- BBC News, Wars 'Less Frequent, Less Deadly, Oct 17, 2005
- Human Security Centre at University of British Columbia, Human Security Report

Giving Peace a Chance - 1

- **Why is this?**
  - **End of colonialism = no more colonial wars**
  - **End of Cold War = no more proxy wars**
  - **UN spearheading conflict prevention, peace-making, peace-keeping, sanctions**
  - **(in the long run, equitable economic development + spread of inclusive democracy plays vital role in reducing political violence)**
- **Average number of people killed / conflict fallen from 38,000 in 1950 to 600 in 2002 due to**
  - **Change from large-scale war with huge armies with heavy weapons to low-intensity conflicts that pit weak governments against ill trained rebels**
  - **Increase in number of refugees and Internally Displaced Persons**
  - **Decrease in number of authoritarian regimes that repress their people**
- **Caveat - excludes current wars in Iraq + Darfur**

- BBC News, Wars 'Less Frequent, Less Deadly, Oct 17, 2005
- Human Security Centre at University of British Columbia, Human Security Report

Giving Peace a Chance - 2

- **Global warfare has decreased by over 60% since peaking in mid-1980's when end of Cold War unleashed New World Disorder**

- **Two most striking features of war in our time**
  - **Decline of traditional inter-state warfare**
  - **Rise + fall of civil war**

- **Why does world seem to be getting more peaceful?**
  - **World is getting more democratic - two democracies less likely to go to war with each other or to descend into civil war**
  - **American empire doing a good job of spreading democracy…as is UN, World Bank, etc.**
  - **Locals are tired of fighting each other**

- Niall Ferguson, Peace is Spreading: the Troubling Thing Is, We Don't Really Know Why, Daily Telegraph, Sept 18, 2005

- University of Maryland's Center for International Development and Conflict Management, Peace and Conflict 2005

Civil Wars

- **Ending civil war is hard**
  - **Hatreds within countries run deeper than between them**
  - **Fighting rarely sticks to battlefield**
  - **Civilians rarely spared**
  - **There are no borders to fall back to + no where safe to go to**
- **Rate at which they start is in 1-2% of countries / year…but they are ending sooner lasting average of 3.7 years now…only 13% end in victory for one side**
- **Have decreased due to end of Cold War drying up funding**
- **Today there is more incentive for countries outside conflict to resolve them as it is realized they wreak preventable havoc to surrounding countries**

  - How To Stop the Fighting Sometimes, The Economist, Nov. 9th, 2013

Why Study History

"Catton made us hear the sounds of battle and made us cherish peace."

- President Ford to historian Bruce Catton on awarding him the Presidential Medal of Freedom

Personal Case Study - William TCY

- **Role**
  - **Enlisted soldier in Republic of China's (ROC) Army**
- **Story**
  - **In unit of soldier's with disabilities**
  - **Sent on exercise to island off of People's Republic of China (PRC) to demonstrate love of ROC and hatred of PRC**
  - **His unit accidentally laid waste to the island and was ordered off**
  - **…hatred of PRC still there 20 year's later when a physics post doc who was a PRC national murdered ½ of the University of Iowa Physics Department**
    - **"He learned to shoot in the PRC Army - they are all killers!"**

Personal Case Study - Andre F.

- **Role - Dual Brazilian and Swiss citizenship**
- **Story**
  - **Returned to Switzerland at age 18 for military training**
  - **Youngest sniper in Swiss Army**
  - **Fascinated with military affairs to this day**

Personal Case Study - Israeli Reservists

- **Eyal S.**
  - **Role - Israeli Army desert navigator, unit helped regular army units navigate through Sinai Desert**
  - **Story - Fought in Yom Kippur War in 1973**

    "War is interesting, yes…But war is also terrible…"
  - **Now is a Department Director in the Israeli Nature and Natural Parks Protection Authority**
- **Zvi L.**
  - **Role - Israeli Army artillery officer while being a medical student in US**

    Story - "If they call me up, I jump on an airplane and I go, that is my job"
  - **Now is a urologist**

Personal Case Study - Captain Eric V.

- **Role - US Army soldier in Cold War**
- **Story**
  - **Soldier in Fulda Gap**
  - **Conscientious objector**
  - **Becomes Army nurse**
  - **Serves in First Gulf War alongside British**
  - **Ends service as only US Army soldier not sent to Iraq**

Personal Case Study - The Changing Arab Street

- **1988 - What do you think of Saddam?**

  "Saddam Hussein is crazy, he is worse than Hitler. That is why my family left Iraq."

  "Beware of zealots…"- Wassim N., M.D. (Iraqi Chaldean immigrant to US)

- **1990 - Telling stories of what Saturday night is like in a Saudi city**

  - **Explosions of home-made alcohol stills all night long**

  "The Saudis are all hypocrites" - Rifat A., M.D. (Palestinian émigré to Saudi Arabia)

- **January 1991 - We are with you!**

  - **First night of Operation Desert Storm**
  - **Watching live coverage of first air strikes on Baghdad and Iraqi retaliatory SCUD strikes on Saudi Arabia in Interventional Radiology**
    - **Rifat A., M.D. (Palestinian émigré to Saudi Arabia)**
      - **Calls home to see if his father is all right ~ Fear in his eyes**

Personal Case Study - The Changing Arab Street

- **February 1991 - Are they with us?**
  - **Arab residents spending lunch by themselves watching TV coverage of the war, talking quietly amongst themselves**
- **1992-3 - They are against us**
  - **Cruise missile attacks on Iraq due to noncompliance**
    - **Watching bomb damage assessment on CNN on Sunday on call**
    - **"What's happening?" - "It's great, we've bombed Saddam again."**
    - **"It's not great, it's a disaster." - Rami S., M.D. (Jordanian Army medical officer)**
- **2007 - The Arab Long View of history**
  - **During conversation about Iran - Iraq War which I refer to as the first of the three recent wars in the Gulf, I am told "Why do you call it the first? Are they not all a continuation of the same war?" - Ameera I., M.D. (Egyptian physician)**

Class Simulation

- **Peace aspects**

Poem

What if they gave a war and nobody came?
Why, then, the war would come to you!
He who stays home when the fight begins
And lets another fight for his cause
Should take care:
He who does not take part
In the battle will share in the defeat.
Even avoiding battle will not avoid battle,
Since not to fight for your own cause
Really means
Fighting on behalf of your enemy's cause.
    - Bertold Brecht, Untitled

Questions for Further Discussion

- **Compare and contrast engagement vs. isolationism as a foreign policy - what are the pros and cons of each?**

- **How would Sun Tzu regard the US containment strategy in the Cold War?**
  - **Was it more Sun Tzu, less Clausewitz - or not?**

- **Give examples of competitions that can serve as alternatives to war**

- **How would Sun Tzu regard the Swiss way of war?**

- **Is the world becoming more or less peaceful?**

Reading Assignments

- **TED Talks for this Topic**
  - **http://www.warstudiesprimer.org/ToLearnMore.html**

Recommended Reading to Learn More

- **Non-fiction**
  - **Tom Wolfe - The Right Stuff**
  - **Andrew Chaikin - Man on the Moon**
- **Fiction**
  - **James Michener - Space**
- **Movies**
  - **From the Earth to the Moon**
- **Simulations**

Conclusion

"I stared at the yellow drift (of poison gas), hypnotized. I can see it at this moment as clearly as I could that day, for it remains with me as the most pregnant memory of the war. It was, in fact, the symbol of our enlightened twentieth century: science, in the pursuit of knowledge, being exploited by a world without standards or scruples, spiritually bankrupt.

Today all treaties, conventions, leagues, all words of honor, contracts, obligations, are evidently worth nothing once the lust for power has infected a nation. Within twenty years of these days of which I write, every country, under a veneer of self-righteous nationalism, is preparing, with increased ingenuity and deadlier weapons, a great Armageddon - all the while protesting their love of peace. People who cannot learn from their mistakes are dammed - "the state of them who love death more than life." What have we learned from ours? We are, collectively, the most evil and destructive of human creatures. We back up our greeds and jealousies with religion and patriotism. Our Christian priests bless the launching of battleships, our youth is urged to die gloriously "for King and Country." We even write on the tomb of our Unknown Warrior that he died "for God"! What a piece of impudent and blasphemous nonsense to write in the House of Him whose greatest saying was: "This is my commandment, that ye love one another.""

- Cecil Lewis, highly decorated World War I RAF pilot in Sagittarius Rising in 1936

Conclusion

"Violence never brings permanent peace. It solves no social problem: It merely creates new and more complicated ones."

- Martin Luther King, when he received the Peace Prize

Conclusion

"Speak softly and carry a big stick"

- Theodore Roosevelt

Conclusion

"More than an end to war, we want an end to the beginnings of all wars."

- Franklin Delano Roosevelt

Topic 27

The Arts in War

Song

We are the Folk Song Army.
Everyone of us cares.
We all hate poverty, war, and injustice,
Unlike the rest of you squares.

If you feel dissatisfaction,
Strum your frustrations away.
Some people may prefer action,
But give me a folk song any old day.

…

So join in the Folk Song Army,
Guitars are the weapons we bring
To the fight against poverty, war, and injustice.
Ready! Aim! Sing!
        - Tom Lehrer

Song

Ev'rybody's talkin' 'bout
Bagism, Shagism, Dragism, Madism, Ragism, Tagism
This-ism, that-ism, ism ism ism
All we are saying is give peace a chance
All we are saying is give peace a chance

(C'mon)
Ev'rybody's talkin' 'bout
Minister, Sinister, Banisters and Canisters,
Bishops, Fishops, Rabbis, and Pop Eyes, Bye bye, Bye byes
All we are saying is give peace a chance
All we are saying is give peace a chance

(Let me tell you now)
Ev'rybody's talkin' 'bout
Revolution, Evolution, Masturbation, Flagellation, Regulation,
Integrations, mediations, United Nations, congratulations
All we are saying is give peace a chance
All we are saying is give peace a chance

- John Lennon, Give Peace a Chance

Song

Imagine there's no heaven
It's easy if you try
No hell below us
Above us only sky
Imagine all the people
Living for today...

Imagine there's no countries
It isn't hard to do
Nothing to kill or die for
And no religion too
Imagine all the people
Living life in peace...

You may say I'm a dreamer
But I'm not the only one
I hope someday you'll join us
And the world will be as one

- John Lennon, Imagine

Why Study Art?

"War makes headlines and history books. It has shaped the international system, prompted social change and inspired literature, art, and music. It engenders some of the most intense as well as the most brutal human experiences and it raises the fundamental questions of human ethics."

- Sir Lawrence Freedman

Thematic Quote

"We have created that"
   - Pablo Picasso

The Painting

Chinook helicopter flies over some of the many power lines in the northern Kuwaiti desert

- Matthew Cook

(The Times)

The Question

What is the role of the artist in war?

Focused Case Study - Artists and Camouflage

"The artist, with his understanding of the subtleties of color, tone, and texture and his ability to draw on visual memory, has probably contributed the most to military camouflage in all its forms."

- Guy Hartcup, Camouflage: A History of Concealment and Deception in War

Focused Case Study - Artists and Camouflage

"Leonardo da Vinci, a great artist and scientist, pointed out Nature's use of protective coloring before [Abbott H.] Thayer was born. Artists before and since have been fully aware of the principles of "countershading," "coincident pattern," "disruption," and "deflection," only they have been called in art schools since the time of Rembrandt such other names as "counterchange," "discordant harmony," "atmospheric and solid perspective." Indeed, it is impossible to paint a picture with using these principles."

- C.H. Rowe, Camouflage in War-time

Focused Case Study - Artists and Camouflage

- **Camouflage Timeline**
  - **1896 - Abbott H. Thayer publishes "The Law Which Underlies Protective Coloration"**
  - **1907 - Pablo Picasso completes *Les Demoiselles d'Avignon*, first major Cubist painting**
  - **1909 - Gerarld H. Thayer publishes Concealing Coloration in the Animal Kingdom**
  - **1915 - French Army establishes first *section de camouflage*…practitioners are called camoufleurs**
  - **1917 - American Camouflage Corps is organized, commanded by Homer Saint-Gaudens…includes Grant Wood**
  - **1917 - British painter Norman Wilkinson initiates "dazzle painting" for naval camouflage**
  - **1918 - US begins dazzle painting of merchant ships directed by artist Everett L. Warner**
  - **1940 - Hugh B Cott publishes Adaptive Coloration in Animals**
  - **- Roy Behrens, False Colors: Art, Design and Modern Camouflage**

Focused Case Study -
Artists and Camouflage

- **Principles of camouflage**
  - **Countershading = Thayer's Law**
    - **Darken the top and lighten the bottom of the object to cancel out the effect of the sun**
  - **Disruptive coloration**
    - **Destroys the continuity of the surface**

Focused Case Study - Artists and Camouflage

On an evening in early 1915, Gertrude Stein, Alice B. Toklas, Pablo Picasso and his mistress Eva Gouel were strolling and taking in Paris on the Boulevard Raspail:

"All of a sudden down the street came some big cannon, the first any of us had seen painted, that is camouflaged. Pablo stopped, he was spell-bound. *C'est nous qui avons fait ca*, he said, it is we that have created that. And he was right, he had. From Cezanne through him they had come to that."

- Gertrude Stein, The Autobiography of Alice B. Toklas

Focused Case Study - Artists and Camouflage

- **Types of World War I Camouflage**
  - **Applied to land objects to make them difficult to see from the air**
    - **French**
      - **Cubism**
      - **Pointillism / Impressionism**
    - **German**
      - **Pointillism / Impressionism**
    - **British**
      - **Umbrella camouflage nets**
  - **Applied to ships to make it difficult for gunners to determine what direction they are traveling in**
    - **British and US**
      - **Dazzle painting = cubism**

- Roy Behrens, False Colors: Art, Design and Modern Camouflage

Artist as Illustrator

- **Winslow Homer**
  - **Civil War - Harper's Weekly**
- **Frederick Remington**
  - **American West**
- **John Singer Sargent**
  - **World War I - Gassed**
- **Keith Ferris**
  - **Cold War - US Air Force Art Program**
- **Major Robin Watt**
  - **First Gulf War - "A Soldier's Sketchbook"**
- **Matthew Cook**
  - **Second Gulf War - The Times**
- **Staff Sergeant Michael Fay**
  - **Second Gulf War - USMC**

Focused Case Study - Matthew Cook

- **War artist, Times of London ~ Iraq March 2003**
  - **Just passed driving test**
  - **Drove into Iraq alone with map torn from Times**
  - **Functioned like a reporter, filing a watercolor sketch every day via satellite phone**
  - **Made front page of the Times**
- **Returned to Iraq in 2004 as member of Territorial Army who was called up for protection + escort duty**
  - **Subjected to improvised explosive devices**
- **In 2006 accompanied British Army unit as artist in Afghanistan**
- **War fascinates him: "There might be a boyish curiosity. Like everyone in the TA crowd, I read my Victor comics when I was a kid and you always wonder what it's like. It's not very glamorous and it's quite unpleasant. I'm much wiser now."**

- Penny Wark, Drawing on Hidden Reserves, The Times, Oct 25, 2005

Focused Case Study - Warrant Officer Michael Fay, USMCR

- ## Combat artist is an artist who goes into combat
  - ### Is only combat artist in USMC
- ## Comes from family of Marines
  - ### Served as mortar man + avionics repairman ~ Got art degree in between
  - ### Self-described liberal
- ## Goal
  - ### Convey the experiences - frightening + mundane - of the common person in war
  - ### Put a human face on war in Afghanistan + Iraq
- ## Why do it?

  ### "…to be in the company of adults. Young men and women who've made the transition to authentic adulthood in a culture that seems perpetually stuck in the affectations of hyped-up adolescence. I am surrounded here by the culture of the responsible, and not the society of the entitled."

- Michael M. Phillips, Marine Combat Artist Keeps Tradition Alive, Wall Street Journal, Feb 21, 2006
- Peter Atkinson, The Art of War, Seapower, July 2007
- Michael Fay, Fire and Ice, mdfay1.blogspot.com

Posters for Propaganda

- **Pro War**
  - **Appeal to patriotic side**
    - **Recruitment**
    - **Inspire your troops to fight**
    - **Motivate civilian industrial workers**
    - **Motivate civilians to conserve**
    - **War bonds drives for funds**
  - **Unify your side**
    - **Define what are you fighting for**
    - **We are all in this together**
  - **Attack the enemy**
    - **Vilify them**
    - **Dehumanize them**
- **Anti War**
  - **Vilify your side and it's cause**
  - **Humanize the enemy**

The Importance of Understanding Geography in War

"History is geography set in motion"

- Herder

"War is God's way of teaching Americans geography"

- Ambrose Bierce

- **Look at the World: The Fortune Atlas for World Strategy by Richard Edes Harrison, 1944**
- **Confrontation: The Strategic Geography of NATO and the Warsaw Pact by Hugh Faringdon, 1986**
- **Strategic Geography and the Changing Middle East by Geoffrey Kemp and Robert E. Harkavy, 1997**

Return of the Geographer

"If you want to know what Russia, China or Iran will do next, don't read their newspapers or ask what our spies have dug up-consult a map. Geography can reveal as much about a government's aims as its secret councils. More than ideology or domestic politics, what fundamentally defines a state is its place on the globe. Maps capture the key facts of history, culture and natural resources. With upheaval in the Middle East and a tumultuous political transition in China, look to geography to make sense of it all.

As a way of explaining world politics, geography has supposedly been eclipsed by economics, globalization and electronic communications. It has a decidedly musty aura, like a one-room schoolhouse. Indeed, those who think of foreign policy as an opportunity to transform the world for the better tend to equate any consideration of geography with fatalism, a failure of imagination.

But this is nonsense. Elite molders of public opinion may be able to dash across oceans and continents in hours, allowing them to talk glibly of the "flat" world below. But while cyberspace and financial markets know no boundaries, the Carpathian Mountains still separate Central Europe from the Balkans, helping to create two vastly different patterns of development, and the Himalayas still stand between India and China, a towering reminder of two vastly different civilizations.

- Robert D. Kaplan, Geography Strikes Back, Wall Street Journal, Sept. 7, 2012

Return of the Geographer

Technology has collapsed distance, but it has hardly negated geography. Rather, it has increased the preciousness of disputed territory. As the Yale scholar Paul Bracken observes, the "finite size of the earth" is now itself a force for instability: The Eurasian land mass has become a string of overlapping missile ranges, with crowds in megacities inflamed by mass media about patches of ground in Palestine and Kashmir. Counterintuitive though it may seem, the way to grasp what is happening in this world of instantaneous news is to rediscover something basic: the spatial representation of humanity's divisions, possibilities and-most important-constraints. The map leads us to the right sorts of questions.

…

In this very brief survey of the world as seen from the standpoint of geography, I don't wish to be misunderstood: Geography is common sense, but it is not fate. Individual choice operates within a certain geographical and historical context, which affects decisions but leaves many possibilities open. The French philosopher Raymond Aron captured this spirit with his notion of "probabilistic determinism," which leaves ample room for human agency.

But before geography can be overcome, it must be respected. Our own foreign-policy elites are too enamored of beautiful ideas and too dismissive of physical facts-on-the-ground and the cultural differences that emanate from them. Successfully navigating today's world demands that we focus first on constraints, and that means paying attention to maps. Only then can noble solutions follow. The art of statesmanship is about working just at the edge of what is possible, without ever stepping over the brink."

- Robert D. Kaplan, Geography Strikes Back, Wall Street Journal, Sept. 7, 2012

Focused Case Study - Cartographer as Illustrator - Richard Edes Harrison

- **Trained as architect - freed him to use non-traditional approach to his work**
- **Cartographer for Time Inc. (including Life + <u>Fortune</u>)**
- **Felt cartography was inherently argumentative + that all maps are suggestive**
- **Demonstrated power of visualization through maps**
  - **Prepared Americans for war in time of isolation**
    - **Three Approaches to the US in Atlas For the US Citizen - Fortune Sept. 1940**
      - **Brings the war to America, tells them they can't be isolated**
    - **One World One War - Fortune Aug 1941**
      - **Entire conflict pivots around the US**
  - **Taught Americans how close they were to rest of world + provided guidance for Pax Americana in air age**
    - **Look At The World: The Fortune Atlas for World Strategy in 1944**
  - **Emphasized geographical basis of world strategy**
- **Amazing amount of intelligence assumed on behalf of reader - where did that go?**

- Susan Schulten, Richard Edes Harrison and the Challenge to American Cartography, Imago Mundi Vol. 50 (1998) pp. 174-188.

Photographer as Illustrator

- **Robert Capa**
  - **Vue magazine photographer in Spanish Civil War**
    - **"Death of a Loyalist Soldier"**
  - **Life magazine photographer in World War II**
    - **D-Day Landings - "Soldier crawling towards beach"**
      - **Shot 106 images while under intense fire on Omaha Beach, when developed 98 of them were overheated + destroyed**
      - **8 surviving shots define the appearance of Omaha Beach - blurriness + graininess of the images captures intensity of the event**
  - **- Time Magazine, D-Day 24 Hours That Saved The World, p. 124-125**
  - **- Marie Brenner, Robert Capa's Longest Day, Vanity Fair, June 2014**

"If your pictures aren't good enough, you're not close enough."

- Robert Capa

Photographer as Illustrator

- **Joseph Rosenthal**
  - **Associated Press photographer in the Pacific in World War II**
    - **"Flag Raising at Iwo Jima"**
      - **Received Pulitzer Prize**

Photographer as Chronicler - Captain Edward Steichen

- **Trained as painter, became portrait photographer**
- **In World War I is head of photography for US Army**
  - **Worked with General Billy Mitchell to develop aerial photography**
- **In 1920's + 30's became photo editor at Conde Nast (Vogue + Vanity Fair) for photos + fashion and a commercial photographer for J. Walter Thompson**
- **Ended career as Director of Photography at Museum of Modern Art**
  - **Final show was "Family of Man" - using photography for "explaining man to man across the world"**

- Steichen, Edward and Maloney, Tom. US Navy War Photographs: Pearl Harbor to Tokyo Bay, 1980

- Phillips, Christopher. Steichen at War, 1981

Photographer as Chronicler - Captain Edward Steichen

- **In World War II at age 63 became head of Naval Aviation Photographic Unit for US Navy**
  - **Small team of less than 10 photographers, focused on naval aviation**
  - **Why he wanted to do this: "I had gradually come to believe that, if a real image of war could be photographed and presented to the world, it might make a contribution toward ending the specter of war."**
  - **Believed that photography could serve as way of conveying human drama of to the public**
  - **Instruction to photographers: "No one knows just what will happen in war. Photograph everything that happens, and you may find that you have made some historic photographs. But above all, concentrate on the men. The ships and planes will become obsolete, but the men will always be there."**

- Steichen, Edward and Maloney, Tom. US Navy War Photographs: Pearl Harbor to Tokyo Bay, 1980

- Phillips, Christopher. Steichen at War, 1981

"…the camera in the hands of competent and understanding photographers can get under the surface appearance of things, can comment upon, emphasize and interpret actuality and that it can visually record moments of combat, of fear, of anxiety, or of pride with a breathtaking sense of reality.

Although a man's memory (somewhat fortunately) will dim with time, a good photograph will not lose its impact."

- Edward Steichen, Power in the Pacific, 1945

Photographer as Conscience

"On a higher plane, the press is a service industry and the service it provides is awareness. Every story does not have to sell something. There is also a time to give. That was a tradition I wanted to follow.

Seeing that war created such incredibly high stakes for everyone involved and that visual journalism could actually become a factor in conflict resolution I wanted to be a photographer in order to be a war photographer. But I was driven by an inherent sense that a picture that revealed the true face of war would almost by definition be an anti-war photograph."

- James Nachtwey, documentary photographer - talk at TED Conference 2007

Film in War

- **Movies as propaganda**
  - **Triumph of the Will - Leni Riefenstahl**
    - **Makes the case for the Aryan master race led by Hitler**
  - **Why We Fight (7 films) - Frank Capra**
    - **Response to Triumph of the Will ~ Designed for US troops**
    - **Each ends with quote from General Marshall - "…the victory of the democracies can only be complete with the <u>utter defeat</u> of the war machines of Germany and Japan"**
  - **Mrs. Minniver - William Wyler**
    - **Roosevelt said it helped Americans understand plight of England ~ Churchill claimed it was "more powerful to the war effort than the combined work of six military divisions"**
  - **Casablanca - Michael Curtiz**
    - **Romantic wartime propaganda**

Film in War

- **Movies as learning tools**
  - **Victory Through Airpower - Alexander de Seversky + Walt Disney**
    - **Advocates strategic use of airpower**
    - **Churchill teaching Roosevelt with it**
  - **Memphis Belle - William Wyler**
- **Movies as documentaries**
  - **Battle of San Pietro - John Huston**
    - **So realistic General Marshall ordered it used as training film**
  - **Band of Brothers - Steven Spielberg**

Film in War

- **Movies help us think about war and what it does to people**
  - **Deer Hunter - Michael Cimino**
  - **Saving Private Ryan - Steven Spielberg**
- **Movies help us to heal from war**
  - **Best Years of Our Lives**

Focused Case Study - Peter Watkins - Culloden - 1964

- **Jacobite uprising 1746 was last attempt to overthrow British monarchy by Scots**
  - **Irregular Scottish army of Highlanders, led by Catholic pretender to the throne Bonnie Prince Charlie, are massacred by regular British Army + Lowlanders**
  - **British Army went on to pacify Highlanders by destroying their clan culture + deporting them**
- **Documentary film shot as drama - "you are there"**
  - **Used non-professional actors who improvise**
  - **Was anti-war film**
- **Led to commission for "The War Game"**

- Nicholas J Cull, Peter Watkins' Culloden and the alternative form in historical filmmaking, Film International #1 Jan 2003

Focused Case Study - Peter Watkins - The War Game - 1965

- **Documentary on effect of nuclear strike on Britain shot as a drama "you are there"**
  - **Wanted to break media's silence on nuclear arms race**
  - **Wanted to discuss Mutually Assured Destruction**
    - **This was considered treason**
  - **Used non-professional actors who improvised**
- **Was rebuke to government policy - an anti-war film**
  - **Shows impracticality of government plans by quoting their civil defense manuals**
  - **Shows descent of Britain into civil war**
  - **Graphically horrific**

- Patrick Murphy, The War Game - The Controversy, Film International #3, May 2003

- James Chapman, The BBC and the Censorship of The War Game, Journal of Contemporary History, Vol. 41(1), 75-94

Focused Case Study - Peter Watkins - The War Game - 1965

- **Banned from broadcast by BBC**
  - **Although BBC is independent of government, BBC showed film to government figures, afterwards decided it was "too horrifying for the medium of broadcast"**
  - **The film contradicted official line that nuclear war was survivable and that social order could be preserved - hence its danger**
- **Outcome**
  - **Won Academy Award for documentary feature**
  - **Film maker was marginalized**
  - **Finally aired on BBC in 1985**

- Patrick Murphy, The War Game - The Controversy, Film International #3, May 2003

- James Chapman, The BBC and the Censorship of The War Game, Journal of Contemporary History, Vol. 41(1), 75-94

Focused Case Study - Stuart Cooper - Overlord - 1975

- **Made in cooperation with Imperial War Museum on 30th anniversary of D-Day**
  - **Story of one soldier's training for, and experience on June 6, 1944 - a small person's role in a large machine**
  - **Designed around documentary footage shot by British Army combat cameramen - men who were trained as soldiers but carried a camera instead of a rifle**
    - **Museum's film archive controlled what could be written in the screenplay - instead of vice versa**
    - **Extensive use of museum's archive of soldier's diaries + letters to help write the screenplay**
  - **Shot in black and white with period lens to seamlessly fuse it with documentary footage**

- Stuart Cooper, A Camera Instead of a Rifle, The Guardian, Jan 18, 2008

Case Study Summary - Victory Through Airpower

- **Goal**
  - **Advocate strategic use of airpower**
- **Center of Gravity (Strategy)**
  - **Influence US population**
- **Equipment**
  - **Book first in 1942, animated movie next in 1943**
- **Training ~ Leadership ~ Morale**
  - **Alexander P. de Seversky + Walt Disney**
- **Tactics**
  - **Make visually appealing presentation of what they advocate**
- **Intangibles ~ Mistakes**
  - **Got small details wrong (bomber bases in Alaska)**
  - **Got big picture right**
- **Outcome**
  - **Churchill uses it to convince Roosevelt at Quebec conference**

Case Study Summary - Chinmoku no Kantai (Silent Service)

- **Goal**
  - Address important political issues in background of Japanese politics that are rarely discussed - future of Security Treaty with U.S., real meaning of Japan's U.S.-authored constitution, future of Japan's military, future of Japan

- **Center of Gravity (Strategy)**
  - Appeal to latent nationalism of Japanese
  - Use most widely-read + viewed forms of media

- **Equipment**
  - Published as weekly manga in Weekly Morning from 1988 - 1996, adapted as anime

- **Training ~ Leadership ~ Morale**
  - Authored by Kaiji Kawaguchi

- **Tactics**
  - 7,000 pages of manga, 3 hours of video
  - Tells story of the Yamato - Japan's first nuclear-powered + nuclear-armed submarine built with U.S., whose commander mutinies with it and declares his own nation state in an attempt to create world nuclear disarmament + world peace

- **Intangibles ~ Mistakes**
  - Ran for too long

- **Outcome**
  - Tankobon compilations sold 22 million copies
  - Award winning, featured in all media in Japan, even mentioned in US news
  - Bible of young rightists - "This is a dangerous manga. It is a coup d'etat in the manga world, and a manga that invites a coup d'etat." - Yoshio Suzuki
  - Articulated many of rarely vocalized aspirations of Japanese public
  - At it again in 2015 with "Kubo Ibuki" manga about Chinese - Japanese conflict in Senkaku Islands

                    - Frederick Schodt, Dreamland Japan: Japanese Comics for Otaku, 1996

"I want to convey a message to China that the Self Defense Forces will not take it lying down if it attacks Japan or infringes on Japan's sovereignty in the East China Sea"

- Kaiji Kawaguchi, author of Kubo Ibiki

- Chieko Tsuneoka and Alastair Gale, A Comic Raises a Serious Question: Is Japan Ready to Use Military Force? Wall Street Journal, Aug. 14, 2018

Music

- **Please refer to the Song at the beginning of every Topic**

Poetry

- **Please refer to the Poem at the end of every lecture**

Epic Poetry in War

	Odyssey / Iliad	Tales of the Genji
Author	Homer (bard) / 3rd person	Lady S (princess) / 1st person
Type	Epic poem recorded from oral history ~ events happen in 13th century BC and transcribed in 8th century BC	World's first novel written in 1020
Primacy of	Individual	Group
Focus on	War + survival	Politics + sex
Personal interactions	Informal	Formal
Arts admired	War	Poetry, calligraphy, tea, music, dance
Emotions	Expressed	Hidden
Behavior	Free spirited	Rigidly prescribed
Religion	Gods influence everything	Buddhism
Dictates	Western way of life for next 2500 years - Primacy of free thinker	Eastern way of life for next 1000 years - Primacy of group
Conclusion	The individual (Odysseus) exalted	The Individual (Genji) crushed

Novelist as Illustrator

- **Stephen Crane**
    - **No military experience ~ interviewed Civil War veterans**
    - **Civil War - Red Badge of Courage**
- **Eric Remarque**
    - **Served in German army in World War I**
    - **World War I - All Quiet on the Western Front**
- **James Webb**
    - **Highly decorated Marine officer in Vietnam**
    - **Vietnam - Fields of Fire**

Writer as Teacher

- **John Hersey**
  - **Child of missionaries in China, born into a world view**
  - **Novels - A Bell for Adano, The War Lover**
  - **Non-fiction - Hiroshima**
    - **Helped prevent a nuclear war for several generations by visualizing its horror - everyone read the New Yorker article in 1946**

Focused Case Study - William Howard Russell

- **The first modern war correspondent**
- **Covered Crimean War for The Times**
  - **"A thin red streak topped with a line of steel" - 93rd Highlanders standing firm in face of Russian cavalry charge at Balaclava**
- **Filed reports via telegraph**
- **Electrified British populace with reality of war**
- **Felt British Army was beset by administrative incompetence**
  - **Helped bring down a government + lead to reforms of the British Army**

- Richard Beeston, The Original War Reporter in the Crimea, The Times, Nov. 10, 2007

George Steer in The Times

THE TRAGEDY OF GUERNICA

TOWN DESTROYED IN AIR ATTACK

EYE-WITNESS'S ACCOUNT

From Our Special Correspondent

BILBAO, APRIL 27

Guernica, the most ancient town of the Basques and the centre of their cultural tradition, was completely destroyed yesterday afternoon by insurgent air raiders. The bombardment of this open town far behind the lines occupied precisely three hours and a quarter, during which a powerful fleet of aeroplanes consisting of three German types, Junkers and Heinkel bombers and Heinkel fighters, did not cease unloading on the town bombs weighing from 1,000lb. downwards and, it is calculated, more than 3,000 two-pounder aluminium incendiary projectiles. The fighters, meanwhile, plunged low from above the centre of the town to machine-gun those of the civilian population who had taken refuge in the fields.

The whole of Guernica was soon in flames except the historic Casa de Juntas with its rich archives of the Basque race, where the ancient Basque Parliament used to sit. The famous oak of Guernica, the dried old stump of 600 years and the young new shoots of this century, was also untouched. Here the kings of Spain used to take the oath to respect the democratic rights (*fueros*) of Vizcaya and in return received a promise of allegiance as suzerains with the democratic title of *Señor*, not *Rey Vizcaya*. The noble parish church of Santa Maria was undamaged except for the beautiful chapter house, which was struck by an incendiary bomb.

At 2 a.m. to-day when I visited the town the whole of it was a horrible sight, flaming from end to end. The reflection of the flames could be seen in the clouds of smoke above the mountains from 10 miles away. Throughout the night houses were falling until the streets became long heaps of red impenetrable débris. Many of the civilian survivors took the long trek from Guernica to Bilbao in antique solid-wheeled Basque farmcarts drawn by oxen. Carts piled high with such household possessions as could be saved from the conflagration clogged the roads all night. Other survivors were evacuated in Government lorries, but many were forced to remain round the burning town lying on mattresses or looking for lost relatives and children, while units of the fire brigades and the Basque motorized police under the personal direction of the Minister of the Interior, Señor Monzon, and his wife continued rescue work till dawn.

CHURCH BELL ALARM

In the form of its execution and the scale of the destruction it wrought, no less than in the selection of its objective, the raid on Guernica is unparalleled in military history. Guernica was not a military objective. A factory producing war material lay outside the town and was untouched. So were two barracks some distance from the town. The town lay far behind the lines. The object of the bombardment was seemingly the demoralization of the civil population and the destruction of the cradle of the Basque race. Every fact bears out this appreciation, beginning with the day when the deed was done.

Monday was the customary market day in Guernica for the country round. At 4.30 p.m., when the market was full and peasants were still coming in, the church bell rang the alarm for approaching aeroplanes, and the population sought refuge in cellars and in the dugouts prepared following the bombing of the civilian population of Durango on March 31, which opened General Mola's offensive in the north. The people are said to have shown a good spirit. A Catholic priest took charge and perfect order was maintained.

Five minutes later a single German bomber appeared, circled over the town at a low altitude, and then dropped six heavy bombs, apparently aiming for the station. The bombs with a shower of grenades fell on a former institute and on houses and streets surrounding it. The aeroplane then went away. In another five minutes came a second bomber, which threw the same number of bombs into the middle of the town. About a quarter of an hour later three Junkers arrived to continue the work of demolition, and thenceforward the bombing grew in intensity and was continuous, ceasing only with the approach of dusk at 7.45. The whole town of 7,000 inhabitants, plus 3,000 refugees, was slowly and systematically pounded to pieces. Over a radius of five miles round a detail of the raiders' technique was to bomb separate *caserios*, or farmhouses. In the night these burned like little candles in the hills. All the villages around were bombed with the same intensity as the town itself, and at Mugica, a little group of houses at the head of the Guernica inlet, the population was machine-gunned for 15 minutes.

RHYTHM OF DEATH

It is impossible to state yet the number of victims. In the Bilbao Press this morning they were reported as "fortunately small," but it is feared that this was an understatement in order not to alarm the large refugee population of Bilbao. In the hospital of Josefinas, which was one of the first places bombed, all the 42 wounded militiamen it sheltered were killed outright. In a street leading downhill from the Casa de Juntas I saw a place where 50 people, nearly all women and children, are said to have been trapped in an air raid refuge under a mass of burning wreckage. Many were killed in the fields, and altogether the deaths may run into hundreds. An elderly priest named Aronategui was killed by a bomb while rescuing children from a burning house.

The tactics of the bombers, which may be of interest to students of the new military science, were as follows:—First, small parties of aeroplanes threw heavy bombs and hand grenades all over the town, choosing area after area in orderly fashion. Next came fighting machines which swooped low to machine-gun those who ran in panic from dugouts, some of which had already been penetrated by 1,000lb. bombs, which make a hole 25ft. deep. Many of these people were killed as they ran. A large herd of sheep being brought in to the market was also wiped out. The object of this move was apparently to drive the population underground again, for next as many as 12 bombers appeared at a time dropping heavy and incendiary bombs upon the ruins. The rhythm of this bombing of an open town was, therefore, a logical one: first, hand grenades and heavy bombs to stampede the population, then machine-gunning to drive them below, next heavy and incendiary bombs to wreck the houses and burn them on top of their victims.

The only counter-measures the Basques could employ, for they do not possess sufficient aeroplanes to face the insurgent fleet, were those provided by the heroism of the Basque clergy. These blessed and prayed for the kneeling crowds—Socialists, Anarchists, and Communists, as well as the declared faithful—in the crumbling dugouts.

When I entered Guernica after midnight houses were crashing on either side, and it was utterly impossible even for firemen to enter the centre of the town. The hospitals of Josefinas and Convento de Santa Clara were glowing heaps of embers, all the churches except that of Santa Maria were destroyed, and the few houses which still stood were doomed. When I revisited Guernica this afternoon most of the town was still burning and new fires had broken out. About 30 dead were laid out in a ruined hospital.

A CALL TO BASQUES

The effect here of the bombardment of Guernica, the Basques' holy city, has been profound and has led President Aguirre to issue the following statement in this morning's Basque Press:—

"The German airmen in the service of the Spanish rebels have bombarded Guernica, burning the historic town which is held in such veneration by all Basques. They have sought to wound us in the most sensitive of our patriotic sentiments, once more making it entirely clear what Euzkadis may expect of those who do not hesitate to destroy us down to the very sanctuary which records the centuries of our liberty and our democracy.

"Before this outrage all we Basques must react with violence, swearing from the bottom of our hearts to defend the principles of our people with unheard of stubbornness and heroism if the case requires it. We cannot hide the gravity of the moment; but victory can never be won by the invader if, raising our spirits to heights of strength and determination, we steel ourselves to his defeat.

"The enemy has advanced in many parts elsewhere to be driven out of them afterwards. I do not hesitate to affirm that here the same thing will happen. May to-day's outrage be one spur more to do it with all speed."

Journalist as Illustrator - Ernie Pyle

- **Served in US Navy in World War I**
- **Correspondent for Scripps Howard newspapers**
- **Folksy style, like writing to a friend**
  - **Won Pulitzer Prize for columns**
- **Wrote from perspective of common soldier**
  - **Books: Ernie Pyle in England, Here is Your War, Brave Men, Last Chapter**
- **The original embedded journalist, for 3 years, from North Africa to Italy to England to France to the Pacific**
  - **Fell into depression from horrors he chronicled**
  - **"The Death of Captain Waskow"**
- **Killed by sniper on Okinawa in 1945**

"No man in this war has so well told the story of the American fighting man as the American fighting man wanted it told." - Harry S. Truman

Journalist as Illustrator - Edward R. Murrow

- **Gold standard of American journalism**
  - **Full of integrity, never compromised his values**
- **His secret for success was simple**
  - **Tell the big story by using the little stories - the people - who make up the big story**
    - **Documentaries should inform and elucidate and be objective. They should not be prejudicial or subjective. Let the people tell the story, be subtle, don't use a sledgehammer**

Murrow's Touch

One former staff member recalled the instruction Mr. Murrow gave to his newsmen.

The reporter must never sound excited even if bombs are falling outside, Mr. Murrow said.

Rather, the reporter should imagine that he has just returned to his hometown and that the local editor has asked him to dinner with, for example, a banker and a professor.

"After dinner," Mr. Murrow counseled, "your host asks you 'Well, what was it like?' As you talk, the maid is passing the coffee and her boyfriend, a truck driver, is waiting for her in the kitchen and listening. You are supposed to describe things in terms that make sense to the truck driver without insulting the intelligence of the professor."

- Edward R. Murrow, Broadcaster And Ex-Chief of U.S.I.A., Dies, New York Times, April 28, 1965

Murrow's Boys

- **What Murrow wanted was fast, knowledgeable experienced reporting based on first hand observation**

- **Murrow's instructions to Mary Marvin Breckenridge: "Give the human side of the war. Be honest. Be neutral and talk like yourself."**

- **They created compelling, storytelling radio news which was infused with illumination, explanation, and context**

- **Broadcast journalists went from drawing "pictures in the air" on radio to "writing captions for pictures" on TV**

    - Stanley Cloud and Lynne Olson, The Murrow Boys: Pioneers on the Front Line of Broadcast Journalism

Murrow in World War II

- **Personal friend of Churchill + Roosevelt**
  - **Affair with Churchill's daughter in law, spent evening of December 7, 1941 with Roosevelts**
- **1940 - Battle of Britain**
  - **"This is London" - brought war home to Americans, changed them from isolationists to supporters of British cause**
- **1943 - Bombing Berlin**
  - **"Orchestrated Hell"**
- **1945 - Liberation of Buchenwald**

  "I pray you to believe what I have said about Buchenwald. I reported what I saw and heard, but only part of it. For most of it, I have no words."

Eric Sevareid's Rules For His Commentaries

"Mine has been here an unelected, unlicensed, uncodified office and function.

The rules are self-imposed, these were few:

- Not to underestimate the intelligence of the audience and not to overestimate its information,

- To elucidate when one can, more than to advocate,

- To retain the courage of one's doubts as well as one's convictions, in this world of dangerously passionate certainties,

- To comfort oneself in times of error with the knowledge that the saving grace of the press, print or broadcast is its self-correcting nature."

- Eric Sevareid, farewell essay

Flashman's Tips for Foreign Correspondents

- **First instinct is for self-preservation**
- **Hang back from the shooting and you often get a better view**
- **When faced with superior firepower in unsteady hands, smile, make yourself pleasant to your captors, and buy time**
- **Have a nose for danger and intense desire to avoid it**
- **Have a genius for getting out of danger**
- **Immerse yourself in the local culture**
- **Speak multiple languages**
- **Network with powerful people to understand the motives behind important policies**
- **Being a scoundrel makes you a better reporter**
- **Make up for a lack of funds with resourcefulness**

- The Cad as Correspondent, The Economist, Dec. 24, 2016

Journalist as Novelist - Cornelius Ryan

- **On 15th anniversary of D-Day decided to write a history of it**
- **Searched for participants through personal ads, sent questionnaires to them, interviewed some of them**
  - **Identified thousands of participants, received back 1,150 questionnaires, interviewed 172 people**
- **Created a database of people and their experiences that lives on**
- **Created a history that lives like a novel - The Longest Day**
- **Repeated the technique in The Last Battle and A Bridge Too Far**
- **Laid groundwork for "The New Journalism" of Tom Wolfe, Gay Talese, Joan Didion, Hunter S. Thompson in the 1960s**
- **Was in Normandy twice on D-Day but never mentioned it**
  - **In a bomber over the beaches, in a patrol boat off shore**

- Michael Shapiro, The Reporter Who Time Forgot: How Cornelius Ryan's The Longest Day Changed Journalism, Columbia Journalism Review, Spring 2017

The Newest Journalism - Blogging

- **Reasons Milbloggers do it**
  - **Keep in touch with family**
  - **Provide alternative to main stream media**
  - **Uniquely qualified, deep, longitudinal view of situation as opposed to journalists parachuting in for brief periods**
- **Reasons not to do it**
  - **Can lead to breakdown in chain of command**
  - **Can compromise operational security**
- **US military has issued strict guidelines on blogging**
  - **Army Regulation 530-1 "Operations Security"**

- Mike Spector, Cry Bias and Let Slip the Blogs of War, Wall Street Journal, July 26, 2006

Computing Case Study Summary - Naval Open Source Intelligence (NOSI)

- **Goal**
  - **Initially coast watching / Subsequently operational naval news / Ultimately war studies curriculum**
- **Center of Gravity (Strategy)**
  - **US population**
- **Technology / Equipment**
  - **Blog software (Wordpress) + intelligent agents (Google News)**
- **Training ~ Leadership ~ Morale**
  - **Principal is digital librarian + informatician + military historian**
- **Tactics**
  - **Daily surf + intelligent agents, curation, post news stories, archive**
- **Intangibles ~ Mistakes**
  - **Authoritative open source news sources used ~ English only**
- **Outcome**
  - **Over time unstructured war studies curriculum unfolds in practice**
  - **Well regarded ~ Has high impact factor in Google**

Personal Case Study - NOSI as Milblog

- **Role**
  - **I am curator of NOSI, one of first milblogs in 2000**
- **Story**
  - **Initially desired to reproduce fleet observing efforts of WW II coast watchers through open source intelligence**
  - **Subsequently presented operational naval news**
  - **Ultimately after 9/11 serves as means of exploring field of war studies**
    - **Thousands of posts over decade evolve into war studies curriculum that unfolds in practice + becomes this War Studies Primer**
  - **Done by amateur, regularly used by professionals (~ 300 / day)**

Computing Case Study Summary - P-8 Poseidon God of the Sea

- **Goal**
  - Create a community of practice around the P-8 maritime patrol aircraft to learn about the aircraft, its crews and its mission
- **Center of Gravity (Strategy)**
  - Past + present P-3 Orion air crew + ground crew
  - Use open source intelligence
- **Technology / Equipment**
  - Facebook page because "All my P-3 friends are already on Facebook"
  - As Facebook stopped displaying 90% of page posts to page followers it changed to a WordPress blog
- **Training / Leadership / Morale**
  - Past + present P-3 air crew + ground crew proud of their service + eager to share

Computing Case Study Summary - P-8 Poseidon God of the Sea

- **Tactics**
  - **Publicize new P-8 page to existing P-3+naval aviation+737 groups and pages - "Fan the future"**
  - **Daily wall posts of maritime patrol aircraft news with special emphasis on P-8**
  - **Discussion questions, photo sharing**
- **Intangibles / Mistakes**
  - **Need to be wary of operational security**
  - **NCIS mistaken investigation**
- **Outcome**
  - **Vibrant community of practice with over 3000 members including past + current P-3 crew (and future P-8 crew), Boeing P-8 engineers + interested civilians**
  - **Top 10 in Google for "P-8 Poseidon" - amongst most authoritative sites on the Web**
  - **Micro-niche of NOSI with as much content + more interaction**

Videogames - The Newest Art Form

- **Videogame industry is now larger, revenue wise, than the film industry**

- **For today's teens and young adults (especially males), videogames may be the art form they have the most exposure to**

- **Videogame as learning tool**
  - **Full Spectrum Warrior - Uses distributed authentic professionalism**

- **Videogame as a propaganda tool**
  - **America's Army - recruiting tool**

- **Videogame as a "documentary"**
  - **Call of Duty, Medal of Honor**

Class Simulation

- Art aspects

Poem

"Have you news of my boy Jack?"

Not this tide."When d'you think that he'll come back?"Not with this wind blowing, and this tide.

"Has any one else had word of him?"Not this tide.For what is sunk will hardly swim,Not with this wind blowing, and this tide.

"Oh, dear, what comfort can I find?"None this tide,Nor any tide,Except he did not shame his kind -Not even with that wind blowing, and that tide.

Then hold your head up all the more,This tide,And every tide;Because he was the son you bore,And gave to that wind blowing and that tide.

- Rudyard Kipling, My Boy Jack

Questions for Further Discussion

- **How detached should the artist be from their subject in war?**

- **How have wars affected artists of the period?**

- **How has art served as a propaganda tool to help spread war?**

Reading Assignments

- **TED Talks for this Topic**
  - **http://www.warstudiesprimer.org/ToLearnMore.html**

Recommended Reading to Learn More

- **Non-fiction**
  - **Stanley Cloud + Lynne Olson - The Murrow Boys**
- **Fiction**
- **Movies**
  - **Casablanca**
  - **Triumph of Will**
- **Simulations**

Conclusion

"This instrument can teach, it can illuminate, and yes it can even inspire. But it can do so only to the extent that humans are determined to use it to those ends. Otherwise it's nothing but wires and lights in a box."

- Edward R. Murrow

Topic 28

Conclusion

Song

This is the end
Beautiful friend
This is the end
My only friend, the end

Of our elaborate plans, the end
Of everything that stands, the end
No safety or surprise, the end
I'll never look into your eyes...again
 - Jim Morrison, The End

Thematic Quote

"We have met the enemy, and he is us"

- Pogo

Thematic Quote

"War is always a matter of doing evil in the hope that good may come of it."

- B.H. Liddell-Hart

"We are all in the gutter, but some of us are looking at the stars."

- Oscar Wilde

The Painting

A Cosmic View

- Robert McCall

(Smithsonian National Air and Space Museum)

The Question

Are there basic principles which should shape the conduct of war if it is to be successfully prosecuted?

How has the character of warfare changed over time?

What is war good for?

What good things come out of war?

The Question

What is the universal appeal of Star Trek?

Its optimistic view of the future:

Mankind survives by getting along on Earth

Model is generalizable to the universe

Mr. Roddenberry's belief (was) that "When human beings get over the silly little problems of racism and war, then we can tackle the big problems of exploring the universe."

- David Gerrold

Personal Case Study - Family Members Who Have Served

- **King Phillip's War (1675)**
  - Robert Treat - Major and Commander-in-Chief Connecticut forces
- **American Revolution**
  - Private Robert Cross - Captain James McClaghry's Company
  - Samuel Sly - Malcolm's Regiment
  - William Sly - Livingston's Regiment
- **Lewis and Clark**
  - Toussaint Charbonneau (husband of Sacajawea)
- **War of 1812**
  - Major Charles Hamilton Sly
- **Civil War**
  - Corporal Rufus Robinson - 16th Infantry Regiment New York - Battles of Bull Run(1st), Antietam, Fredericksburg, Chancellorsville
- **Red River (1869-70) + Northwest Rebellions (1875) Canada**
  - Louis Riel - leader of Metis people

Personal Case Study - Family Members Who Have Served

- **World War I**
  - **Vincent Ferrelli, Italian Army - Giuseppe Garibaldi Brigade**
- **World War II**
  - **Roger Mastrorocco, US Army - France, KIA**
  - **Anthony Berarducci, US Army - 28th Infantry Division, Battle of the Bulge**
- **Korean War**
  - **Frank J. Marciniak II, US Army - Company Clerk**
- **Cold War**
  - **Private Kenneth Santer, US Army - Medic + Army track team / Special Services**
  - **Lt. Colonel A.D., USAFR - Citizen soldier-flight surgeon**
  - **Private C.D., USMC - TOW gunner**
  - **Staff Sergeant P.D., Oklahoma Air National Guard**
- **Long War**
  - **Captain D.D., USAFR - Citizen soldier-flight surgeon**
  - **Private A.D., Oklahoma National Guard - artillery**

How A Grateful Nation Can Give Thanks

THE SECRETARY OF THE NAVY
WASHINGTON

December 29, 1945

My dear Mr. Corrigan:

I have addressed this letter to reach you after all the formalities of your separation from active service are completed. I have done so because, without formality but as clearly as I know how to say it, I want the Navy's pride in you, which it is my privilege to express, to reach into your civil life and to remain with you always.

You have served in the greatest Navy in the world.

It crushed two enemy fleets at once, receiving their surrenders only four months apart.

It brought our land-based airpower within bombing range of the enemy, and set our ground armies on the beachheads of final victory.

It performed the multitude of tasks necessary to support these military operations.

No other Navy at any time has done so much. For your part in these achievements you deserve to be proud as long as you live. The Nation which you served at a time of crisis will remember you with gratitude.

The best wishes of the Navy go with you into civilian life. Good luck!

Sincerely yours,

James Forrestal

Mr. John Joseph Corrigan
1116 Roosevelt Drive
Llanerch Hills, Pennsylvania

Global Climate Change as a National Security Threat

- **Projected climate change is threat multiplier in already fragile regions, exacerbating conditions that lead to failed states which are breeding grounds for terrorism + extremism**
  - **Conflicts will occur over water resources**
  - **Rising sea levels from climate change will create many refugees who live near coasts**
- **Projected climate change is serious threat to US national security**
- **Climate change, national security, energy dependence are a related set of global challenges**
  - **US should commit to stabilize climate change at levels that will avoid significant disruption to global security + stability**
- **CNA Corporation, National Security and the Threat of Climate Change, 2007**

Drilling Up vs. Drilling Down for Energy Security

- 1968 - Peter Glaser
  - Proposes to collect solar energy on satellites + beam it to earth
  - Cleanest + safest option for generating Earth's electricity
- 1970 - 80's - Gerald O'Neill
  - Keeps flame alive ~ But collecting + beaming back energy too inefficient ~ launching too costly
- 2007 - US Department of Defense
  - Wants to be catalyst to make this happen
  - Collecting + beaming back energy becoming more efficient ~ launching becoming cheaper
  - Advantages
    - Tactically - Forward deployed troops get electricity from sky rather than gasoline powered generators
    - Strategically - Eases developed nations addiction to oil (and conflict over it), decreases greenhouse gases + climate change
  - "…there is enormous potential for energy security, economic development, improved environmental stewardship, advancement of general space faring, and overall national security for those nations who construct and possess a space based solar power capability"

- National Security Space Office, Space-Based Solar Power As An Opportunity for Strategic Security, 2007
- Gerald K. O'Neill, The World's Energy Future (Still) Belongs in Space, 1992

"The possibility of cooperation among nations, in an enterprise which can yield new wealth for all rather than a conflict over the remaining resources of the Earth, *may be* far more important in the long run than the immediate return of energy to the Earth. So, too, may be the sense of hope and of new options and opportunities which space colonization can bring to a world which has lost its frontiers."

- NASA/Ames-Stanford ASEE 1975 Summer Study of Space Colonization

Case Study Summary - Solar Power Satellites

- **Goal**
  - **Energy independence for US through clean energy from space**
- **Center of Gravity (Strategy)**
  - **Space-based solar power satellites**
- **Equipment**
  - **Develop low-cost access to space**
  - **Mine moon / asteroids for raw materials, send them to earth orbit via mass driver / catapult**
  - **Build solar power satellites in orbit**
  - **Build space colonies to house workers**
  - **Beam solar energy to Earth via microwaves**
- **Training**
  - **Emphasis on STEM**
- **Leadership**
  - **Required at the national level**

Case Study Summary - Solar Power Satellites

- **Morale ~ Tactics**
  - **Can help make Americans feel great again**
- **Intangibles**
  - **How can you decrease launch costs?**
  - **Can you legally mine moon / asteroids for raw materials?**
- **Mistakes**
  - **Not dreaming large enough**
- **Outcome**
  - **Make US energy independent**
  - **Open a new frontier for Americans**
  - **Establish US lead in space manufacturing industry**
  - **Stop providing petrodollars to those who despise us - drain the swamp monetarily**
  - **Decouple US foreign policy from US energy needs**
  - **Space colonies provide back up of human race**

Is The Moon Made of Green Resources?

"The moon has no biosphere, there's no life there, it's already a big open strip mine in the sky, so it's actually a wonderful opportunity for us to be able to obtain the resources that humanity needs without devastating the environment of Earth. So the moon actually is a territory that belongs to all of the peoples of the Earth and it's the entrepreneurs who will be going there who will bring back the value and that is an opportunity for the first time in the history of humanity to conquer a frontier without conquering each other."

- Bob Richards, Moon Express, wants to mine the Moon by 2013

Cost Of Doing Business

"During World War II, supporting one soldier on the battlefield took 1 gallon of fuel per day - today [it is more than] 22 gallons per day. These energy needs require a vast yet vulnerable supply chain that our enemies target."

- Chairman of the Joint Chiefs General Martin Dempsey, 2011

Solar Power Satellites

- **Can eliminate many of civilization's problems**
  - **Pollution from fossil fuel burned for electricity**
  - **Environmental damage caused by extracting fossil fuels - oil spills, strip mining, mountain-top removal, fracking**
  - **Use of military force to gain control of fossil fuel resources unevenly distributed around planet**

- Frank Morring, Sun Power, Aviation Week and Space Technology, Jun. 9, 2014

No Boundaries

"You don't think of it as Texas or the US, you really think of it as Earth."

- Anonymous Apollo astronaut

"(It) makes you realize just what you have. The Earth there is a grand oasis in the big vastness of space."

- Jim Lovell, Apollo 8 and 13

The Home Planet by Kevin W. Kelley

"The first day or so we all pointed to our countries. The third or fourth day we were pointing to our continents. By the fifth day we were aware of only one Earth"

- Sultan Bin Salman al-Saud, Saudi Arabia

"We went to the moon as technicians; we returned as humanitarians"

- Edgar Mitchell, America

" . . . I understood that we are all sailing in the same boat"

- Vladimir Kovalyonok, Russia

Summary - Earthrise from Apollo 8

"We choose to go to the moon in this decade and do the other things, not because they are easy, but because they are hard, because that goal will serve to organize and measure the best of our energies and skills, because that challenge is one that we are willing to accept, one we are unwilling to postpone, and one which we intend to win."

- John F. Kennedy

Summary - Facing Future

"It (exploration) is about the expansion of human activity out beyond Earth…this point was very recently noted and endorsed by no less than Stephen Hawking…Hawking joins those…who have long pointed out this basic truth: The history of life on Earth is the history of extinction events, and human expansion into the Solar System is, in the end, fundamentally about the survival of the species."

- Michael Griffin, NASA Administrator in NASA is Not Short Changing Science, AWST, Sept 25, 2006 p. 66

"If man is to survive, for most of human history, the word 'ship' will mean space ship."

- Arthur C. Clarke

"Is the surface of Earth really the best place for an expanding technological civilization?

A Space Roadmap: Mine the sky, Defend the Earth, Settle the universe"

- Lee Valentine, Space Studies Institute (www.ssi.org), 2002

The Sky *Is* Falling

- **Space strikes on Earth are not rare events**
  - **70% strike ocean + do not leave visible crater**
  - **Others explode above ground + do not leave crater**
- **Recent strikes**
  - **1908 - Tunguska - 30 meter object air burst = several hundred times the explosive force of Hiroshima**
  - **536 AD - Gulf of Carpentaria north of Australia - 300 meter object caused global cooling according to Byzantines**
  - **2800 BC - 3000 meter object in Indian Ocean near Madagascar - caused 600 foot high tsunami - ?Genesis**
  - **12,000 years ago - air burst over Canada lead to global cooling and large mammal + Clovis civilization extinction**
- **Near-Earth asteroids + comets are more numerous + in more unstable orbits than previously believed**
  - **Risk dangerous object will strike the Earth? 10% chance per century**

  "The odds of a space-object strike during your lifetime may be no more than the odds you will die in a plane crash - but with space rocks, it's like the entire human race is riding on the plane." - Nathan Myhrvold

- Gregg Easterbrook, The Sky Is Falling, The Atlantic, June 2008

Summary - Why We Explore

"I submit that one of the most important roles of government is to inspire and motivate its citizens, and particularly its young citizens - to love, to learn, to strive to participate in and contribute to societal progress. By that measure, NASA will without doubt rank in the top tier of government enterprises."

The goal is far more than just going faster and higher and further. Our goal - indeed our responsibility - is to develop new options for future generations: options in expanding human knowledge, exploration, human settlements and resource development, outside in the universe around us.

Our highest and most important hope is that the human race will improve its intelligence, its character, and its wisdom, so that we'll be able to properly evaluate and choose among those options, and the many others we will encounter in the years ahead."

- Neil Armstrong

Summary - Why We Explore

"We shall not cease from exploration
And the end of all our exploring
Will be to arrive where we started.
And know the place for the first time."
- T.S. Eliot, "Little Gidding"

Conclusion - Drake Equation

$$N = R^* \times f_p \times n_e \times f_l \times f_i \times f_c \times L$$

- N = The number of communicative civilizations
- R* = The rate of formation of suitable stars (stars such as our Sun)
- fp = The fraction of those stars with planets. (Current evidence indicates that planetary systems may be common for stars like the Sun.)
- ne = The number of Earth-like worlds per planetary system
- fl = The fraction of those Earth-like planets where life actually develops
- fi = The fraction of life sites where intelligence develops
- fc = The fraction of communicative planets (those on which electromagnetic communications technology develops)
- L = The "lifetime" of communicating civilizations

Conclusion - Perspective

"Space is big. Really big. You just won't believe how vastly hugely mind-bogglingly big it is. I mean, you may think it's a long way down the road to the chemist, but that's just peanuts to space."

- The Hitchhiker's Guide to the Galaxy

Conclusion - Perspective -
Pale Blue Dot

"We succeeded in taking that picture [from deep space], and, if you look at it, you see a dot. That's here. That's home. That's us. On it, everyone you ever heard of, every human being who ever lived, lived out their lives. The aggregate of all our joys and sufferings, thousands of confident religions, ideologies and economic doctrines, every hunter and forager, every hero and coward, every creator and destroyer of civilizations, every king and peasant, every young couple in love, every hopeful child, every mother and father, every inventor and explorer, every teacher of morals, every corrupt politician, every superstar, every supreme leader, every saint and sinner in the history of our species, lived there on a mote of dust, suspended in a sunbeam."

- Carl Sagan

Conclusion - Pale Blue Dot

"The earth is a very small stage in a vast cosmic arena. Think of the rivers of blood spilled by all those generals and emperors so that in glory and in triumph they could become the momentary masters of a fraction of a dot. Think of the endless cruelties visited by the inhabitants of one corner of the dot on scarcely distinguishable inhabitants of some other corner of the dot. How frequent their misunderstandings, how eager they are to kill one another, how fervent their hatreds. Our posturings, our imagined self-importance, the delusion that we have some privileged position in the universe, are challenged by this point of pale light."

- Carl Sagan
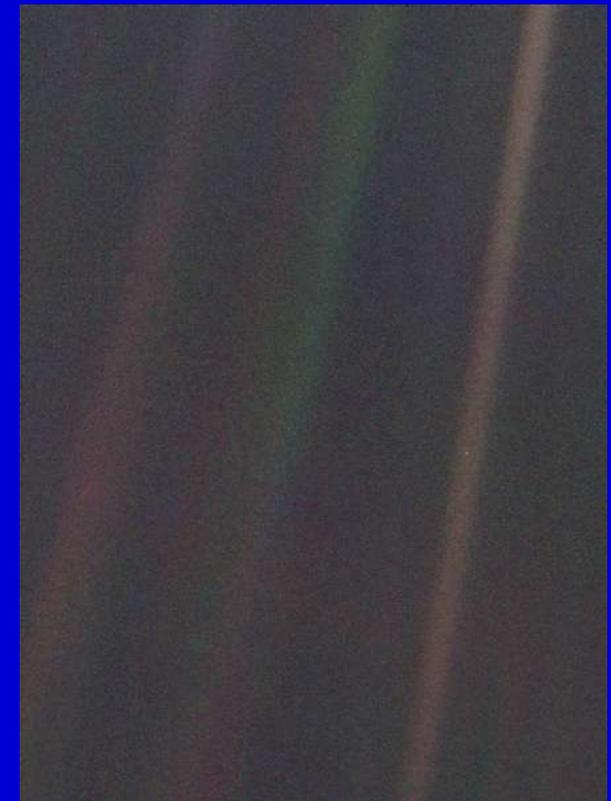
Conclusion - Pale Blue Dot

Our planet is a lonely speck in the great enveloping cosmic dark. In our obscurity -- in all this vastness -- there is no hint that help will come from elsewhere to save us from ourselves. It is up to us. It's been said that astronomy is a humbling, and I might add, a character-building experience. To my mind, there is perhaps no better demonstration of the folly of human conceits than this distant image of our tiny world. To me, it underscores our responsibility to deal more kindly and compassionately with one another and to preserve and cherish that pale blue dot, the only home we've ever known."

- Carl Sagan
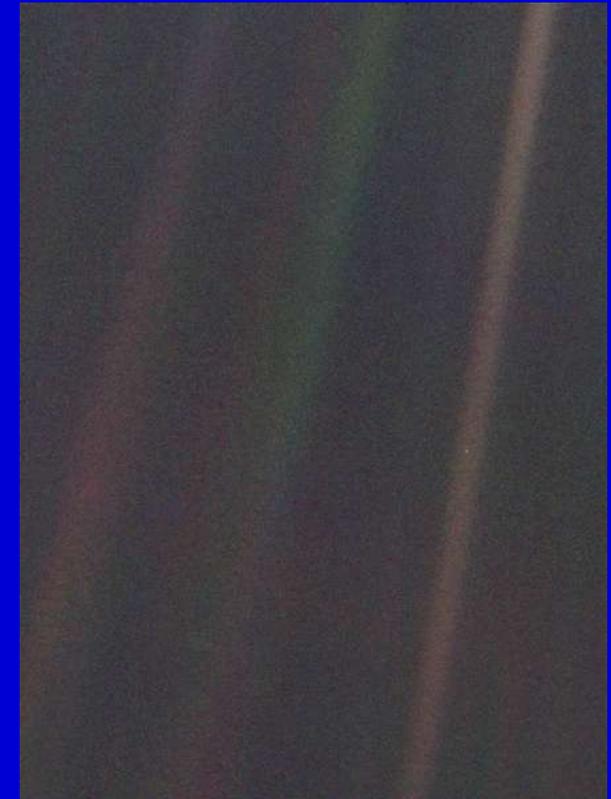
Conclusion

"We protect what we love"

- Jacques Cousteau

Conclusion - Perspective

"I think it's healthy for people to understand their wider environment. The world's a lot less troubling when you understand the systems that it's part of, in the huge scope of space and time in which human life exists. People used to ask -- and maybe they still do -- "Doesn't this make you feel insignificant, that everything out there is so big?" But I really think the reverse is true, that one feels much better about the human condition when one understands it in its natural context. That context extends out through the stars and the wider universe. It's all nature, and it's always good for the mind and heart to understand nature and our place in nature."

- Timothy Ferris

What Is War Good For?

- **Accurate mapping (Medieval)**
- **Canned food (Napoleonic Wars)**
- **Jet engines (World War II)**
- **Nuclear energy (World War II)**
- **Radar (World War II)**
- **Rocketry (World War II)**

                    - James Burke in Connections

- **Advances in medicine**
- **Computing**

                    - Michael P. D'Alessandro, M.D.

Always Look on the Bright Side of Life

"Except for Ending Slavery, Fascism, Nazism & Communism, War Has Never Solved Anything"

- Joel Surnow's (Co-creator of "24") favorite bumper sticker

"All the great national sins of the last 200 years have been ended by war alone or by the threat to use military force - American chattel slavery, German Nazism, Italian fascism, Japanese militarism, and Soviet Communism"

- Victor Davis Hanson

"After we had charged the beach [at Juno] and I knew what war was, I couldn't help going behind a wall and crying"

- Sergeant Major Charles Martin, Queens Own Rifles of Canada

Food For Thought

"The "Long War" is a term for the conflict that began in 1914 with the First World War and concluded in 1990 with the end of the Cold War. The Long War embraces the First World War, the Bolshevik Revolution, the Spanish Civil War, the Second World War, the Korean War, the War in Vietnam, and the Cold War."

- Philip Bobbit

"The United States is a nation engaged in what will be a long war. Since the attacks of September 11, 2001, our Nation has fought a global war against violent extremists who use terrorism as their weapon of choice, and who seek to destroy our free way of life."

- 2006 Quadrennial Defense Review

"There is no instance of a nation benefiting from prolonged warfare."

- Sun Tzu

Warm War

- **We are in a new Warm War**
  - **Warm because relations between countries are closer than ever, witnessed by unprecedented flow of capital, goods, services, people between countries**
  - **Warm because its all about energy**
  - **War because make no mistake, we are engaged in a geopolitical struggle for the hearts and minds of the world between**
    - **Theocracy and democracy**
      - **Like ETO in WWII, theocracy / democracy struggle gets most of the attention + resources because it is perceived - rightly so - as greatest near-term threat**
    - **Totalitarianism and democracy**
      - **Like PTO in WWII, totalitarian / democracy theater is neglected theater, to be dealt with eventually - Ironic in WW II + today the neglected theater was the Pacific.**
- **Like WW II, both theaters are linked, in WW II by alliances, in Warm War by energy flows**
- **Path to ultimate victory**
  - **Even greater connectivity with world**
  - **Persuade world of superiority of democracy over totalitarianism + theocracy by exemplary behavior of living the Four Freedoms**
  - **Energy independence so as to stop financing our enemies**

Themes

What we are going to discuss / What we have discussed
Everything is deeply intertwingled

- **Study of war is important**
  - **"Those who cannot remember the past are condemned to repeat it"**
- **Reasons why we fight**
  - **Multifactorial ~ Unfortunately war seems to be a natural state for man**
- **Philosophers of War**
  - **Clausewitz's fog of war and friction**
  - **Sun Tzu's "The best battle is the battle that is never fought" and the Chinese Way of War**
  - **Boyd's OODA Loop**
- **Simulation**
  - **Key role in teaching decision making ~ Now also important in training**
- **Primacy of leadership**
  - **"To be somebody or to do something. In life there is often a roll call" - John Body**
- **Importance of training**
  - **"Train like you fight and fight like you train"**
- **Land warfare**
  - **"Poor bloody infantry" ~ Chaos of combat ~ Randomness of death ~ Impossibility of understanding it without being there**

Themes
What we are going to discuss / What we have discussed
Everything is deeply intertwingled

- **Centrality of planning and logistics**
  - "No plan survives first contact with the enemy" ~ "Amateurs talk tactics, generals talk logistics"
- **Intelligence**
  - "Intelligence does not win wars. In reality, intelligence is muddled, partial, contradictory, often proving not very secret at all and always confusing."
- **Naval warfare**
  - Those who fail seapower test fail longevity test ~ Good navy is guarantor of peace
- **Aerial warfare**
  - Slowly but steadily fulfilled its promise ~ Key importance to victory today ~ The future of UAVs
- **Space warfare**
  - Can make one all knowing but dependence on it is an Achilles heel
- **Information warfare**
  - Media is very influential and should be paid attention to as a battlespace ~ Cyberspace is new battlespace we are very vulnerable in
- **Weapons of mass destruction**
  - Where nuclear weapons appear interstate warfare is abolished

Themes
What we are going to discuss / What we have discussed
Everything is deeply intertwingled

- **Graceful degradation**
  - **True nature of war is chaos ~ Successful commanders manage uncertainty best**
- **How to Win a War**
  - **A grand strategy to focus our nation's actions - political, economic, and military - so as to:**
  - **1) Increase our solidarity, our internal cohesion**
  - **2) Weaken our opponents' resolve and internal cohesion (break their political will)**
  - **3) Strengthen our allies' relationships to us**
  - **4) Attract uncommitted States to our cause**
  - **5) End conflicts on favorable terms, without sowing the seeds for future conflicts**
- **How do Wars End**
  - **Rarely neatly, usually quite messily ~ Winning the peace is as important as winning the war**
- **Wars That Never End - Guerilla Wars**
  - **Win them by outgoverning the guerillas, which is time consuming, expensive, hard to do**
- **Way to win Long War, which is a global guerilla war**
  - **To convincingly articulate a vision for a democratic Muslim world that gives them a future ~ Then need to resource it and execute on it**

Themes
What we are going to discuss / What we have discussed
Everything is deeply intertwingled

- **Home front**
  - **Mobilizing the home front to positively influence political will is the key to victory**
- **Civilians and war**
  - **Since the Trojan War civilians have borne the brunt of the tragedy of war**
- **Heroism in War**
  - **Hero is one who unconsciously commits a selfless act ~ Most never recognized**
- **Rise and Fall of Empires**
  - **Empires have a common life cycle with their rise based on trade and fall based on bureaucracy, corruption, debt**
- **Future Wars and Geopolitics**
  - **Can we continue to articulate and implement a future worth creating while fighting off non-state actors who threaten globalization and managing state actors who oppose democracy?**
- **Future War Technology**
  - **There will always be a latest + greatest technology but people are your greatest asset**
  - **"People, Ideas, and Hardware. In that order!" - John Boyd**

Themes
What we are going to discuss / What we have discussed
Everything is deeply intertwingled

- **Lawfare**
  - **At a time when our enemies are increasingly following no rules of war, the rules of war governing our behaviors on the battlefield are becoming stricter**
  - **If the rules of war are enforced too tightly, can you win with one or both arms tied behind your back**
  - **You can steal more with a lawyer than you can with an army**
  - **Courtroom is battlefield of the future**
- **Corpsman Up!**
  - **Preventive medicine is a force multiplier**
- **How to Keep the Peace**
  - **Proxy wars and alternative diversions play a key role in keeping the peace in state on state conflict**
- **Role of the arts**
  - **Bringing war in some way to those who don't participate in it directly ~ Role in propaganda**
- **Conclusion**
  - **Our Grand Strategy should revolve around energy independence and it should be obtained from space**

Conclusion

"No great dependence is to be placed in the eagerness of young soldiers for action. For fighting has something agreeable in the idea to those who are strangers to it."

- Vegetius

Conclusion

"There is many a boy here today who looks on war as all glory, but boys, it is all hell. You can bear this warning voice to generations yet to come."

- William Tecumseh Sherman

Conclusion

"For war was not just a military campaign but also a parable. There were lessons of camaraderie and duty and inscrutable fate. There were lessons of honor and courage, of compassion and sacrifice. And then there was the saddest lesson, to be learned again and again, that war is corrupting, that it corrodes the soul and tarnishes the spirit, that even the excellent and the superior can be defiled, and that no heart would remain unstained."

- Rick Atkinson, The Day of Battle

Conclusion

"...though wars can still bring adventures which can stir the heart, their true nature is of innumerable personal tragedies, of grief, waste and sacrifice, wholly evil and not redeemed by glory."

- LCDR David Howarth, RNVR in The Shetland Bus

Conclusion

"War is the statesman's game, the priest's delight, The lawyer's jest, the hired assassin's trade"

- Percy Bysshe Shelley, poet

"As long as war is regarded as wicked, it will always have its fascination. When it is looked upon as vulgar, it will cease to be popular."

- Oscar Wilde, author

Conclusion

"I hate war as only a soldier who has lived it can, only as one who has seen its brutality, its futility, its stupidity."

- Dwight David Eisenhower

Conclusion

"Walter, this D-Day has a very special meaning for me…On D-Day my own son graduated from West Point. After his training, he came over with the 71st Division, some time after the landings. On the very day he was graduating, these men came here, British and our other allies, and Americans for one purpose only, not to gain anything for ourselves, not to fulfill any ambitions that America had for conquest, but to preserve freedom - systems of self-government in the world. Many thousands of men have died for ideals such as these, and here again, in the twentieth century for the second time, Americans along with the rest of the free world came across the oceans to defend these ideals…"

- Dwight David Eisenhower, at the American cemetery at Omaha Beach, on CBS Reports D-Day Plus 20 Years

Conclusion

"Now my own son has been very fortunate. He has had a very full life since then. He is the father of four lovely children that are very precious to my wife and me. But these young boys, so many of them, were cut off in their prime. They had families that grieved for them, but they never knew the great experiences of going through life that my son can enjoy."

- Dwight David Eisenhower, at the American cemetery at Omaha Beach, on CBS Reports D-Day Plus 20 Years

Conclusion

"I devoutly hope that we will never again have to see such scenes as these. I think and hope, pray that humanity will learn more than we…learned up to that time. But these people gave us a chance, and they bought time for us, so that we can do better than we have done before. So every time I come back to these beaches, or any day when I think about that day, twenty years ago now, I say once more we must find some way to work…to gain an eternal peace for this world."

- Dwight David Eisenhower, at the American cemetery at Omaha Beach, on CBS Reports D-Day Plus 20 Years

Conclusion

To those who haven't been there,
war is the most glorious thing imaginable

To those who have been there,
war is the most horrific thing imaginable

So,
Do not take the decision to go to war lightly,
do not conduct war lightly

As war is an extremely unpredictable and dangerous
instrument which should be approached
cautiously and strategically

Words To Live By,
For East and West

As a child, learn good manners

as a young man, learn to control your passions

in middle age, be just

in old age, give good advice

then die, without regret

- Delphic precepts from Ai-Khanoum (possibly the historical Alexandria on the Oxus)

Final Thought

"War does not determine who is right - only who is left"

- Bertrand Russell

Final Thought

"Only the dead have seen the end of war."

- Plato

Final Thought

"If we don't end war, war will end us"

- H.G. Wells, author

Let's End On An Optimistic Note…

"Mankind's future lies in exploring the abundance of space rather than fighting over the limited resources of Earth."

- Michael P. D'Alessandro, M.D.

This is The End…

- **If we have raised more questions than we have answered, we have succeeded. For in regards to the study of war, this course is…**

"Now this is not the end. It is not even the beginning of the end. But it is, perhaps, the end of the beginning."

- Winston Churchill

Poem - The Regenerative Landscape

Pile the bodies high at Austerlitz and Waterloo,

Shovel them under and let me work -

I am the grass; I cover all.

And pile them high at Gettysburg

And pile them high at Ypres and Verdun.

Shovel them under and let me work.

Two years, ten years, and passengers ask the conductor:

What place is this?

Where are we now?

I am the grass.

Let me work.

- Carl Sandburg, Grass

Song

I see trees of green, red roses too
I see them bloom for me and you
And I think to myself, what a wonderful world

I see skies of blue and clouds of white
The bright blessed day, the dark sacred night
And I think to myself, what a wonderful world

The colors of the rainbow, so pretty in the sky
Are also on the faces of people going by
I see friends shakin' hands, sayin' "How do you do?"
They're really saying "I love you"

I hear babies cryin', I watch them grow
They'll learn much more than I'll ever know
And I think to myself, what a wonderful world
Yes, I think to myself, what a wonderful world
- George Weiss / Bob Thiele, What a Wonderful World

Questions for Further Discussion

- **Time for Reflection:**

  - **Take an hour and reflect back upon the Learning Objectives / War Frequently Asked Questions for this course found in Topic 1**

Reading Assignments

- **TED Talks for this Topic**
  - **http://www.warstudiesprimer.org/ToLearnMore.html**

Recommended Reading to Learn More

- **Non-fiction**
- **Fiction**
- **Movies**
  - **For All Mankind**
- **Simulations**

Appendix

How I Teach This Course

How To Use This Course -
Learning and Teaching Suggestions for War Studies Primer

- **If you are a student you may simply read the slides of those topics that interest you**

- **If you are a teacher you may use the slides to teach either a**

  - **1. Lecture-based course if you have a large amount of time**

    - **Teacher uses slides to cover the entire syllabus by giving 1 topic / class session, without or with student preparation / review of the slides before lecture**

  - **2. Seminar-based course if you have a small amount of time**

    - **At first class meeting, students decide which topics they want to cover and design their own syllabus - or - teacher may assign a topic to each student based upon their major**

    - **For each class session, the teacher assigns beforehand the questions from the beginning and end of the topic ("The Question" + "Questions for Further Discussion") to be discussed by the students**

    - **The students must read the topic before class, and come prepared to answer the questions using information from the topic's case studies to illustrate their answers**

    - **The teacher will lead and guide the student's discussions and offer their own insight and expertise**

Philosophically…

- **I see a course as a way of organizing a discussion, using readings and viewings to provide a common ground for discussion of the topics and questions in the course**

Preparation For This Course -
If You Are Taking The Whole Course

- **Before the first class meeting, students should prepare for this course in the following manner**
  - **Review all the slides in all of the topics**
  - **Select 3 areas of interest from amongst the topics**
    - **These areas of interest are what you will focus on in your readings, field trips, and essays**

Expectations For Students

- **I have high expectations for you as students in this course. By the end of this course I expect you to accomplish the Goal of This Course. To do so I expect you to do the following:**

  - **Attend every class**

  - **Come to class prepared to discuss the day's topic by reading the assigned topic in the War Studies Primer before class**

  - **Participate in class in a challenging yet respectful manner**

  - **Participate online in discussions + simulation in a challenging yet respectful manner**

  - **Turn in assignments on time**

What I Hope To Avoid

"College is a place where a professor's lecture notes go straight to the student's lecture notes, without passing through the brains of either."

- Mark Twain, author

What I Hope To Do

"The mind is not a vessel that needs filling, but wood that needs igniting."

- Plutarch, Greek historian

Personal Case Study - About Me

- **Who am I?**
  - **A physician**
  - **A professor**
  - **An amateur military historian (amateur = love)**
  - **A geek**
    - **Initially majored in military technology and minored in military history**
    - **Started Naval Open Source Intelligence (NOSI) - www.nosi.org - in 2000 to focus on the technology**
    - **...as time has gone by and we have been at war, my interest has shifted to military history, and then more broadly to war studies. War Studies Primer grew directly out of NOSI**

Personal Case Study - About Me

- ## Who am I?
  - ### Never been in the military, but have done research with the military and been a military contractor
  - ### My politics are that of a reactionary liberal or a radical conservative
    - #### I'm like Thomas Friedman - I think the US is not as bad as they say we are, but we're not as good as we ought to be

Personal Case Study - About Me - What I Do Professionally

- **I am in MI - medical intelligence**
  - **I work in a 24 x 7 x 365 environment**
- **I have a number of sensor platforms that gather data for me - Usually done by technicians, sometimes done by me**
- **I gather + analyze data, synthesize it to information, make recommendations based on it to operators (physicians)**
  - **Occasionally I am also an operator**
- **I deliver recommendations in real-time + prospectively**
  - **My recommendations are not always listened to**
- **I do my best work when working closely with operators, in an environment of total information awareness**
- **I give briefs and written reports**
- **I am always learning about the threat**
- **Does this sound like MI - military intelligence?**

The Intelligence Cycle

- **Planning and Direction**
- **Collection**
- **Processing**
- **Analysis and Production**
- **Dissemination**

  - Central Intelligence Agency

- **This is what a radiologist does…**

Personal Case Study - About Me

- ## Why am I here?
  - ### I feel the topic of War Studies is crucial to our society
    - There is a rich history of war and a database of lessons learned that we ignore at our peril
    - Unfortunately it is not being taught
    - …even though there is an increasing interest in history (books, magazines, television, reenactment)
      - John Lukacs, The Study of History
  - ### And - with the end of conscription - most know nothing about the military!
    - Robert Heinlein felt - in Starship Troopers - only those who have served in the military are citizens and should have the right to vote

Personal Case Study - About Me

- ## Why am I here?
  - ### How will you responsibly exercise control over your military through your politicians?
    - By reading, writing, and discussion
    - So this course is a step in that direction
  - ### ...and on a personal level I have two sons
    - If they choose to serve their country, I feel they will have undertaken a noble profession...I just don't want them led by politicians who are donkeys

Personal Case Study - About You
[First Class Meeting Icebreaker - Ask Every Student]

- **Who are you**
  - **Where are you from?**
- **Military experience**
  - **Have you or any family members (siblings, parents, relatives, grandparents) served in the military?**
  - **What did you do in the military?**
  - **Where did you go?**
  - **Did you like the military?**
- **What is your major / what are you interested in studying?**
- **Why are you here?**

First Assignment Before Leaving Class

- **Name you prefer**
- **Telephone number**
- **E-mail address**
- **What is your major?**
- **Why are you here?**
  - **Why did you take this course?**
  - **What are your expectations for the course?**
  - **Are there any specific military topics / eras / battles you are interested in?**
- **Write four specific questions about the subject of this course that you want answered during this semester**
- **Write three comments about why you enrolled in this course. Be honest**

How We Will Do This

- **Readings / Viewings / Lectures / Discussions**
  - **Balance between theory and practice**
  - **Case studies and simulations to tie it all together**
- **Note that although for organizational purposes the topics are presented in a linear order, they are all deeply intertwingled**
- **Our common touchstones will be Operation Iraqi Freedom and Operation Enduring Freedom because they are the two wars we've all lived through together**
- **Curriculum at www.warstudiesprimer.org**

How We Will Do This

- **Each topic has**
  - **Song to start with**
  - **Thematic quote**
  - **Painting**
  - **(Framing) Question**
  - **Case studies to bring the topic into focus**
  - **Relationship to the ongoing simulation**
  - **Poem**
  - **Questions for further discussion**
  - **Recommended readings to learn more**
- **Look at war**
  - **From tactical - operational - strategic levels**
  - **In the context of everything else**

How We Will Do This

- **Review Exam Essay Topics at end of this Appendix so you can work on them throughout the course**

- **I'll do my best to teach to the test**

Assignments

- **Daily Readings**
  - **NOSI - www.nosi.org**
- **Weekly Readings for class**
  - **How to Make War 4th Edition by James F. Dunnigan**
  - **Keegan's books - choose one**
    - **Face of Battle**
    - **Mask of Command**
    - **Price of Admiralty**
    - **Intelligence in War**
    - **History of Warfare**

Supplementary Readings

- **Nonfiction Readings for What War is Like - Choose one:**
  - **Brave Men by Ernie Pyle**
  - **Dispatches by Michael Herr**

Supplementary Readings

- **Fiction Readings for What War is Like - Choose one:**
  - **Red Badge of Courage by Stephen Crane**
  - **All Quiet on the Western Front by Eric Remarque**
  - **Fields of Fire by James Webb**
  - **The Devil's Garden by Ralph Peters**
  - **Once an Eagle by Anton Myrer (Boyd's to be or to do?)**
  - **Starship Troopers by Robert Heinlein (Unit training / forging)**
  - **Ender's Game by Orson Scott Card (Maneuver warfare)**
  - **The Virtues of War by Steven Pressfield (Maneuver warfare)**

Assignments

- **Movie Viewings for What War is Like - Choose one:**
  - **Saving Private Ryan**
  - **Apocalypse Now**
  - **Thin Red Line**
  - **Band of Brothers**

Assignments

- **Participate in a class politico-military simulation that stretches over the course and is followed by a hot wash-up / after action review**
  - **Axis and Allies -- this will be played in lab sessions, once a week for an hour, and be done on a computer based version of A+A - like TripleA - so the game can be projected in class and left setup/saved from week to week. Use multiple players per team, and 6 teams - Chinese, Germans, Japanese, Soviet Union, United Kingdom, United States**

Assignments

- **Supplementary Board Games to Play**
  - **Battle Cry / Memoir 44**
  - **Origins of WWII or Origins of WWI**
- **Supplementary Computer Games to Play**
  - **Balance of Power**
  - **Civilization**

What Are My Favorite Sources

- **People - not weapons - fight and win wars**
- **Listen to those who talk to soldiers on the ground rather than focus on weapons**
  - **Colonels rather than Generals who act as if on ESPN Sports Center**
    - **Colonels and Captains are the intellectuals of the military**
    - **Too smart for their own good, not politically correct, never get promoted**
  - **Military intelligence is not an oxymoron**
    - **These are some of the smartest and well read individuals you will meet**
- **See the Bibliography for a list of my Sources**

Exams

- **Choose from amongst the following topics for your exam essays**

Exam Essay Topics
[Learning Objectives of This Course / War Frequently Asked Questions (FAQs)]

- **How do you provoke a war?**
- **How do you avoid a war? / How do you prevent a war?**
- **How and why do wars start? / What are the causes of war?**
- **How and why do wars end?**
- **Why do people fight?**
- **Can wars be just?**
- **Why do people surrender?**
- **How do you win a war?**
- **How do you lose a war?**
- **Is it always clear who won a war?**
- **What happens after wars?**
- **How were wars fought in the past?**
- **How will wars be fought in the future?**

Exam Essay Topics
[Learning Objectives of This Course / War Frequently Asked Questions (FAQs)]

- **In what ways can war be conducted in a moral manner? / Are there rules to the conduct of war?**
- **How will the new challenge of peacekeeping affect the armed forces?**
- **How will the information revolution affect the use of armed force?**
- **How have developments in modern society affected the military profession?**
- **Can lessons from history facilitate our understanding of contemporary conflicts and assessment of future risks?**
- **How has the character of warfare changed over time?**
- **Are there basic principles which should shape the conduct of war if it is to be successfully prosecuted?**

Exam Essay Topic

- **Militant Islam**
  - **Using everything you have learned**
    - **Devise a grand strategy to identify the centers of gravity of militant Islam, neutralize these centers of gravity, and connect with the moderate Islamic world…all non-kinetically**
    - **[Create a plan for destroying Islamo-fascism non-kinetically]**

Exam Essay Topic

- **Hawaiian 4th Generation Warfare**
  - **You are a member of the Hawaiian sovereignty movement and have decided on a course of violence to attain your goal of restoring Hawaiian independence**
  - **Design a 4th Generation Warfare strategy for freeing the Hawaiian Islands from American occupation**

Exam Essay Topic

- ## Iran Takedown
  - ### Create a strategic plan to overthrow the Iranian government and replace it with a government friendly to the US
    - Begin with a rationale for action
    - Cover training needed
    - Use any or all of the forces we have discussed
      - Land / sea / air / space / information / diplomacy
    - Cover logistics required
    - Cover intelligence needs
    - What is your desired end state / when will you have won?

Exam Essay Topic

- **Managing the Peaceful Rise of a democratic China**
  - **As the United States, using everything you have learned**
    - **Devise a grand strategy to identify the centers of gravity of the Chinese Communist Party, neutralize these centers of gravity, and connect with the democratic Chinese world…all non-kinetically**
    - **[Create a plan for destroying the Chinese Communist Party non-kinetically]**

Exam Essay Topic

- **Ensuring the fall of the United States**
  - **As China, using everything you have learned**
    - **Devise a grand strategy to identify the centers of gravity of the United States, neutralize these centers of gravity, and ensure the United States loses its superpower status…all non-kinetically**
    - **[Create a plan for destroying the United States non-kinetically]**

Exam Essay Topic

- ## Operation Other Than War
  - ### Create an operational plan to perform an operation other than war on a recent humanitarian crisis of your choice, following General Zinni's rules for conducting operations other than war

Exam Essay Topic

- **Use the Star Wars saga (Episodes 1-6) to explore the rise and fall of a civilization and empire**

Exam Essay Topic

- **Attempt to answer the question: Why did the West conquer the rest?**

  - or more specifically -

  - **Why did a tiny group of islands off the northwest coast of Europe manage to rule a quarter of the Earth's population and territory?**

Exam Essay Topic

- **For the class simulation please explain:**
  - **Your role**
  - **Your actions**
  - **What you learned from your individual actions in relation to what you learned from the course**
  - **What you learned from your team's actions overall in relation to what you learned from the course**

  - **One possible way to frame this would be to address some of the Learning Objectives of This Course / War Frequently Asked Questions (in Lecture 1) in relation to the simulation**

Exam Essay Topic

- **Participate in a Staff Ride by yourself or in a group**
  - **Use what you have learned in this course to understand this battle or campaign and afterwards document your**
    - **Emotions**
    - **Impressions**
    - **Lessons learned**
      - **What happened?**
      - **Why it happened?**
      - **With what result?**
      - **Did the commanders make the right decisions?**
      - **What can be learned by studying battle?**
      - **How to fix what was broken?**

Course Evaluation

- **Be Honest!**

- **What did you like about this course?**
- **What did you dislike about this course?**
- **What was missing from this course?**
- **How would you improve this course?**

Final Assignment Before Leaving Class

- **What ONE thing sticks in your mind as the most valuable, significant, or enjoyable thing you learned during this course?**

Bibliography

Notes on Sources

- **To read an original article referenced in this course:**
    - Go to your favorite Internet search engine
    - Type into the search box within quotation marks the article's title, followed by, within separate quotations, the article's author or place of publication

Sources

- **Journals currently read regularly**
  - Air Force, Air and Space Magazine, Atlantic, Aviation Week and Space Technology, Communications of the Association for Computing Machinery, Economist, Janes' Defense Weekly, Janes' International Defense Review, New Yorker, Proceedings of the US Naval Institute, Sea Power, US Naval War College Review
- **Journals formerly read regularly**
  - Against the Odds, Foreign Affairs, Parameters, Strategy and Tactics
- **Journalists read regularly**
  - William Arkin, Thomas P.M. Barnett, James F. Dunnigan, David Ignatius, Greg Jaffe, Robert Kaplan, William Lind, Ralph Peters, Thomas Ricks, John Robb, Bruce Schneier
- **Historians read regularly**
  - Niall Ferguson, Mary Beard
- **Web sites read regularly**
  - Best Defense, Canadian Forces College Spotlight on Military News and International Affairs, Space Review, StrategyPage
- **Radio programs listened to regularly**
  - BBC From Our Own Correspondent, BBC Great Lives, BBC In Our Time, Cybersecurity Podcast, Kings College London Department of War Studies, Pritzker Military Library, StrategyTalk, War College
- **Television programs currently viewed regularly**
  - C-SPAN Q and A, CSPAN2 BookTV, CSPAN3 American HistoryTV, PBS Frontline, TED Talks
- **Television programs formerly viewed regularly**
  - C-SPAN Booknotes

Bibliography
Ancient World

- Aaronovitch, David - The Roman Way (Radio series)
- Aaronovitch, David - The Viking Way (Radio series)
- Ackroyd, Peter - Ancient Rome
- Bennett, Julian - Towns in Roman Britain
- Biesty, Stephen - Egypt in Spectacular Cross Section
- Biesty, Stephen - Greece in Spectacular Cross Section
- Biesty, Stephen - Rome in Spectacular Cross Section
- Black, Jeremy - Great City Maps
- Breeze, David - Roman Forts in Britain
- Breeze, David - Hadrian's Wall
- Brownworth, Lars - Twelve Byzantine Rulers (Radio series)
- Battle Tactics 109 BC - AD 313

Bibliography
Ancient World

- **Campbell, Duncan - Roman Legionary Fortresses 27 BC - AD 378**
- **Cartledge, Paul - Ancient Greece A History in Eleven Cities**
- **Chaillet, Gilles + Martin, J. - Rome**
- **Chaillet, Gilles - Dans La Rome Des Cesars**
- **Collingwood Bruce, John - Handbook to the Roman Wall 4th Edition 1895**
- **Columbia Broadcasting System - You Are There (radio drama)**
- **Corbett, John - Aztec Ruins National Monument New Mexico**
- **Cowan, Ross - Roman Battle Tactics 109 BC - AD 313**
- **Crow, James - Housesteads Roman Fort**

Bibliography
Ancient World

- Davies, Hugh - Roman Roads in Britain
- De la Bedoyere, Guy - Architecture in Roman Britain
- Dersin, Denise - What Life Was Like Amid Splendor and Intrigue: Byzantine Empire AD 330-1453
- De Souza, Phillip - The Peloponnesian War
- Fields, Nic - Hadrian's Wall AD 122-410
- Fields, Nic - The Walls of Rome
- Fields, Nic - Saxon Shore: Coastal Defenses of Roman Britain AD 250-500
- Fields, Nic - Rome's Northern Frontier AD 70-235
- Fields, Nic - Mycenaean Citadels c 1350 - 1200 BC
- Fields, Nic - Troy c 1700 - 1250 BC
- Gellman-Mink, Claudia - Cahokia City of the Sun
- Goldsworthy, Adrian - Hadrian's Wall
- Gombrich, E.H. - A Little History of the World
- Grguric, Nicolas - The Mycenaeans c 1650 - 1100 BC

Bibliography
Ancient World

- **Hawass, Zahi - Tutankhamen and the Golden Age of the Pharaohs**
- **Heckel, Waldemar - The Wars of Alexander the great 336-323 BC**
- **Herodotus - Histories: The Persian War (Books VI - IX) (audio book)**
- **Higgins, Charlotte - Under Another Sky: Journeys in Roman Britain**
- **Hillyer VM and Huey EG - A Child's History of Art**
- **Hillyer VM - A Child's History of the World**
- **Hodgson, Nick - Roman Corbridge: Fort, Town and Museum**
- **Hooper, Finley - Greek Realities: Life and Thought in Ancient Greece**
- **Hooper, Finely - Roman Realities**
- **Kerrigan, Michael - Ancient Greece and the Mediterranean**
- **Kerrigan, Michael - Ancient Rome and the Roman Empire**
- **Konstam, Angus - Forts of Celtic Britain**
- **Lindesay, William - The Great Wall Revisited**

Bibliography
Ancient World

- Macaulay, David - City: A Story of Roman Planning and Construction
- Macaulay, David - Pyramid
- MacGregor, Neil - A History of the World in 100 Objects (Radio series)
- Mason, Antony - Ancient Civilizations of the Americas
- McIntosh, Jane and Twist, Clint - Civilizations: Ten Thousand Years of Ancient History
- McNeese, Tim - The Great Wall of China
- Morkot, Robert - Ancient Egypt and the Middle East
- Nardo, Don - Roman Roads and Aqueducts
- Nelson, Richard - The Battle of Salamis
- Nicholls, Matthew - 30 Second Ancient Rome
- Pope, GD - Ocmulgee National Monument
- Schwartz, Daniel - The Great Wall of China
- Schroeder, Albert - Montezuma Castle National Monument Arizona
- Severin, Tim - The Ulysses Voyage: Sea Search for the Odyssey
- Tezuka, Osamu - Buddha

Bibliography
Ancient World

- Ventura, Piero - Birth of Cities
- Ventura, Piero and Ceserani, Gian Paolo - In Search of Ancient Crete
- Ventura, Piero and Ceserani, Gian Paolo - In Search of Pompei
- Ventura, Piero and Ceserani, Gian Paolo - In Search of Troy
- Ventura, Piero and Ceserani, Gian Paolo - In Search of Tutankhamun
- Wedel Greene, Linda - A Cultural History of Three Traditional Hawaiian Sites on the West Coast of Hawaii Island
- Wood, Michael - In Search of the Trojan War
- Wurman, Richard Saul - Cities
- Young, Kittridge - Bandelier National Monument

Bibliography
Ancient World - Fiction

- **Davis, Lindsey - The Silver Pigs (radio drama)**
- **Davis, Lindsey - Shadows in Bronze (radio drama)**
- **Davis, Lindsey - Venus in Copper (radio drama)**
- **Davis, Lindsey - Iron Hand of Mars (radio drama)**
- **Davis, Lindsey - Poseidon's Gold (radio drama)**
- **Dietrich, William - Hadrian's Wall**
- **Harris, Robert - Pompeii**
- **Homer - Iliad**
- **Homer - Odyssey**
- **Homer - Odyssey (radio drama)**

Bibliography
Ancient World - Fiction

- **Kipling, Rudyard - Puck of Pook's Hill (A Centurion of the Thirteen, On the Great Wall, The Winged Hats)**
- **Lawrence, Caroline - Roman Mysteries**
- **Murasaki, Shikibu - The Tale of the Genji (Manga version by Waki Yamato, Volumes 1-4)**
- **Murasaki, Shikibu - The Tale of the Genji - Scenes From the World's First Novel illustrated by Miyata Masayuki**
- **Pseudo-Callisthenes - The Romance of Alexander the Great**
- **Sutcliff, Rosemary - The Eagle of the Ninth**
- **Sutcliff, Rosemary - The Silver Branch**
- **Sutcliff, Rosemary - The Lantern Bearers**

Bibliography
Medieval World

- Aaronovitch, David - The Norman Way (Radio series)
- Biesty, Stephen - Cross Sections Castle
- Brownworth, Lars - Norman Centuries (Radio series)
- Bryant, Anthony - Samurai 1550-1600
- Columbia Broadcasting System - You Are There (radio drama)
- Curry, Anne - The Hundred Years War
- Dougill, John - Kyoto, A Cultural History
- Editors of Time-Life Books, What Life Was Like Among Samurai and Shoguns: Japan AD 1000-1700
- Gambi, Lucio - The Gallery of Maps in the Vatican
- Hall, Eleanor - Life Amongst the Samurai
- Hildred, Alexander and Foote, Stephen and Keighley, Kester - Mary Rose Exposed
- Konstam, Angus - Tudor Warships (1)

Bibliography
Medieval World

- Macaulay, David - Castle
- Machiavelli, Niccola - The Prince (audio book)
- MacGregor, Neil - Germany Memories of a Nation (Radio series)
- MacGregor, Neil - Shakespeare's Restless World (Radio series)
- Milton, Gilles - Samurai William
- Nicolle, David - The Crusades
- Taddei, Mario and Zanon, Edoardo and Laurenza, Domenico - Leonardo's Machines
- Turnbull, Stephen - Japanese Castles 1540 - 1640
- Turnbull, Stephen - Osaka 1615 The Last Battle of the Samurai
- Turnbull, Stephen - Samurai Armies 1467-1649
- Ventura, Piero - Venice, the Birth of a City
- Worshipful Company of Gold and Wyre Drawers - Treasures of Gold and Silver Wire

Bibliography
17th Century

- Collins Harvey, Jacky - Walking Pepys's London
- Hatch, Charles -Jamestown, Virginia: The Townsite and Its Story
- National Park Service - Forts of Old San Juan
- Pepys, Samuel - The Diary of Samuel Pepys (radio drama)
- Porter, Charles - Fort Raleigh
- Ramzan, David - Maritime Greenwich

Bibliography
17th Century - Fiction

- **Jewers, Jack - The Lost Diary of Samuel Pepys**

Bibliography
18th Century

- Aronson, Marc and Glenn, John - The World Made New

- Bobrick, Benson - Fight for Freedom

- Columbia Broadcasting System - You Are There (radio drama)

- Griffith, Paddy - Vauban Fortifications of France

- Griffith, Paddy - French Napoleonic Infantry Tactics 1792-1815

- Hatch, Charles E - Yorktown and the Siege of 1781

- Hatch, Charles E and Pitkin, Thomas M - Yorktown Climax of the Revolution

- Milton, Giles - Nathaniel's Nutmeg: How One Man's Courage Changed the Course of History

- Morrissey, Brendan - Boston 1775

- Murray , Aaron - American Revolution Battles and Leaders

- Murray, Stewart - Eyewitness American Revolution

- Rivoire, Mario - Life and Times of Napoleon

- Wood, Gordon - The American Revolution

Bibliography
Naval Warfare - 18th Century

- Biesty, Stephen - Cross Sections Man of War
- Fremont-Barnes, Gregory - The Royal Navy 1793-1815
- Keegan, John - The Price of Admiralty
- Kennedy, Paul - The Rise and Fall of British Naval Mastery
- Lavery, Brian - Empire of the Seas
- O'Brian, Patrick - Men-of-War: Life in Nelson's Navy

Bibliography
Selected Fiction - 18th Century

- Forester, CS - Mr. Midshipman Hornblower
- Hugo, Victor - Les Miserables (radio drama)
- Lavery, Brian - Empire of the Seas
- Leys, Simon - The Death of Napoleon
- O'Brian, Patrick - The Golden Ocean
- O'Brian, Patrick - The Unknown Shore
- O'Brian Patrick - Master and Commander
- O'Brian, Patrick - Master and Commander (radio drama)
- O'Brian, Patrick - Post Capitan (radio drama)
- O'Brian, Patrick - HMS Surprise (radio drama)
- O'Brian, Patrick - The Mauritius Command (radio drama)
- O'Brian, Patrick - Desolation Island (radio drama)

Bibliography
19th Century

- **Baker, Kyle - Nat Turner**
- **Barnes, Frank - Fort Sumter National Monument South Carolina**
- **Bayley, Victor - Permanent Way Through the Khyber**
- **Chappell, Mike - British Cavalry Equipment 1800-1941**
- **Chun, Clayton KS - US Army in the Plains Indian Wars 1865-91**
- **Columbia Broadcasting System - You Are There (radio drama)**
- **Dillahunty, Albert - Shiloh National Military Park**
- **Dupuy, Trevor - First Book of Civil War Land Battles**
- **Farwell, Byron - Mr. Kipling's Army**
- **Field, Ron - Buffalo Soldier 1866 - 1891**
- **Griffith, Paddy - Battle in the Civil War: Generalship and Tactics in American 1861-65**
- **Guy, Alan and Boyden, Peter - Soldiers of the Raj: Indian Army 1600 - 1947**
- **Hawke, Ethan and Ruth, Greg - Indeh: A Story of the Apache Wars**
- **Hubbard, Elbert - Message to Garcia**

Bibliography
19th Century

- Katcher, Phillip - The American Indian Wars 1860-1890
- Konstam, Angus - American Civil War Fortifications (1) Coastal Brick and Stone Forts
- Lewis, Emanuel - Sea Coast Fortifications of the U.S.
- Lowry, Bernard - Discovering Fortifications From the Tudors to the Cold War
- Luce, Edward S and Luce, Evelyn S - Custer Battlefield National Monument
- McClure, Stanley - Ford's Theatre and the House Where Lincoln Died
- McPherson, James - Fields of Fury
- McPherson, James - Hallowed Ground, A Walk at Gettysburg
- McPherson, James - Into the West
- McGovern, Terrance and Smith, Bolling - American Coastal Defenses 1885-1950
- Nelligan Murray H - Custis-Lee Mansion The Robert E. Lee Memorial Virginia
- Pegler, Martin - US Cavalryman 1865-1890
- Rafuse, Ethan - Antietam, South Mountain & Harpers Ferry: A Battlefield Guide

Bibliography
19th Century

- Rafuse, Ethan - Manassas: A Battlefield Guide
- Storry, Richard - A History of Modern Japan
- Stringham, Joseph - The Story of the USS Yosemite in 1898
- Sullivan, James R - Chickamauga and Chattanooga Battlefields
- Swinton, Ernest - The Defence of Duffer's Drift
- Tilberg, Frederick - Getttysburg National Military Park Pennsylvania
- Tilberg, Frederick - Antietam National Battlefield Site Maryland

Bibliography
19th Century

- Utley, Robert M - Custer Battlefield National Monument
- Utley, Robert M and Ketterson, Francis - Golden Spike National Historic Site Utah
- Vowell, Sarah - Unfamiliar Fishes
- Wheeler, Tom - Mr. Lincoln's T-Mails, The Untold Story of How Abraham Lincoln Used The Telegraph to Win the Civil War
- Whitestone, Howard - Battle in Africa 1879-1914
- Wilkinson-Latham, Robert - The Sudan Campaign 1881-1898
- Wilshin, Francis - Manassas National Battlefield Park Virginia
- Yang, Gene Luen - Boxers
- Yang, Gene Luen - Saints

Bibliography
Selected Fiction - 19th Century

- **Bellah, James Warner - Big Hunt, By The Beard of Saint Crispin, Command, Massacre, Mission With No Record, War Party**
- **Chesney, George - The Battle of Dorking**
- **Kemal, Yashar - Memed, My Hawk**
- **Kipling, Rudyard - The Head of the District**
- **MacDonald Fraser, George - Flashman, Flashman and the Dragon**

Bibliography
World War I

- **Crawford, Michael - The World Cruise of the Great White Fleet**
- **Fletcher, David - The Rolls-Royce Armoured Car**
- **Fletcher, David - Rolls-Royce Armoured Car Owner's Work Shop Manual**
- **Gilbert, Martin - First World War Atlas**
- **Griffith, Paddy - Fortification of the Western Front 1914-18**
- **Milton, Gilles - Russian Roulette**
- **Nicolle, David - Lawrence and the Arab Revolts**
- **Pope, Stephen and Fletcher, David and Willey, David - Tank Centenery: The Story of the First Tank Crews**

Bibliography
World War I

- Tardi and Verney, Jean-Pierre - Goddam This War
- Thomason, John W - Salt Winds and Gobi Dust
- Times of London - Great Military Lives: A Century in Obituaries
- Willey, David - The Tank Museum Souvenir Guidebook
- Williams, Claud - Light Car Patrols 1916-19: War and Exploration in Egypt and Libya With the Model T Ford
- Winkler, Jonathan - Nexus: Strategic Communication and American Security in World War I
- Wright, Patrick - Tank
- Zaloga, Steven - French Tanks of World War I

Bibliography
Fiction - World War I

- **Johns WE - Biggles Learns to Fly, Biggles in France, Biggles the Camels are Coming, Biggles of the Fighter Squadron**

Bibliography
Air Warfare - World War I

- East, Omega G - Wright Brothers National Memorial North Carolina
- Edgerton, David - England and the Aeroplane
- Hadaway, David + Hadaway, Stuart - The British Airman of the First World War
- Hamilton-Paterson, James - Marked For Death: The First War in the Air
- Heydemarck, Haupt - Double Decker C 666
- Heydemarck, Haupt - Flying Section 17
- Heydemarck, Haupt - War Flying in Macedonia
- Lancaster, Nicholas - Brooklands: Cradle of British Motor Racing and Aviation
- Lewis, Cecil - Sagittarius Rising
- Overy, Richard - RAF: The Birth of the World's First Air Force
- Vansant, Wayne - Red Baron

Bibliography
Naval Warfare - World War I

- **Brooks, Richard - Fred T. Janes: An Eccentric Visionary**
- **Colville, Quintin - The British Sailor of the First World War**

Bibliography
Interwar

- **Bagnold, Ralph - Libyan Sands: Travel in a Dead World**
- **Eisner, Will - The Plot: The Secret Story of the The Protocols of the elders of Zion**
- **Noble, Dennis - The Sailor's Homer**
- **Quinn, Jason - Gandhi: My Life is My Message**

Bibliography
Air Warfare - Interwar

- Copp, Dewitt - A Few Great Captains
- Larsen, Deborah and Nigro, Louis - Selfridge Field
- Lay, Beirne - I Wanted Wings
- Mizrahi, JV - Air Corps

Bibliography
Selected Fiction - Interwar

- **Kerr, Philip - Metropolis**
- **McKenna, Richard - The Left Handed Monkey Wrench**
- **Seethaler, Robert - The Tobacconist**
- **Waugh, Evelyn - Scoop**
- **Waugh, Evelyn - Brideshead Revisited**
- **Waugh, Evelyn - Brideshead Revisited (radio drama)**

Bibliography
Ground Warfare - World War II

- Allard, Dean - Gearing Up For Victory: American Military and Industrial Mobilization in World War II
- Allcorn, William - The Maginot Line 1928 - 45
- Ambrose, Stephen - Band of Brothers
- Ambrose, Stephen - The Good Fight: How World War II Was Won
- Ambrose, Stephen - Pegasus Bridge
- Bagnold, Ralph - Sand, Wind and War - Memoirs of a Desert Explorer
- Beevor, Antony - Ardennes 1944 The Battle of the Bulge
- Bidwell, Shelford - The Mechanics of War: Artillery Tactics 1939-1945
- Bull, Stephen - World War II Infantry Tactics Squad and Platoon
- Bull, Stephen - World War II Infantry Tactics Company and Battalion
- Burton, Hal - The Ski Troops
- Chant, Christopher - The Mechanics of War: Ground Attack
- Churchill, Winston - Wartime Speeches 1939-1945 (audio book)
- Chun, Clayton - The Fall of the Philippines 1941-42
- Collins, Larry and Lapierre, Dominique - Is Paris Burning?
- Crisp, Robert - Brazen Chariots

Bibliography
Ground Warfare - World War II

- **Dank, Milton - The Glider Gang**
- **Deighton, Len - Blitzkrieg**
- **Doherty, Richard - The British Reconnaissance Corps in World War II**
- **Douglas, Keith - Alamein to Zem Zem**
- **Farrar-Hockley, Anthony - The Mechanics of War: Infantry Tactics 1939-1945**
- **Fletcher, David - British Light Tanks 1927-45 Marks I-VI**
- **Fletcher, David - Universal Carrier 1936-48 The 'Bren Gun Carrier' Story**
- **Fletcher, David - The Great Tank Scandal**
- **Fletcher, David - The Universal Tank**
- **Griffith, Paddy - World War II Desert Tactics**

Bibliography
Ground Warfare - World War II

- Halter, Mark and Chin, Brian - History of the Maginot Line
- Harper, Frank - Night Climb: The Story of the Skiing 10th
- Hine, Al - D-Day The Invasion of Europe
- Jenner, Rubin and List, David and Badrocke, Mike - The Long Range Desert Group 1940-1945
- Latimer, Jon - Operation Compass 1940
- Lowry, Bernard - British Home Defenses 1940-45
- Macdonald, Charles - Company Commander
- Macksey, Kenneth - The Mechanics of War: Tank Tactics 1939-1945
- Macksey, Kenneth - Anatomy of a Battle
- Marshall, S.L.A. - Battle at Best
- Mauldin, Bill - Up Front
- McGovern, Terrance and Harris, Edward - Defenses of Bermuda 1612-1995
- Murray, Al - Watching War Films With My Dad

Bibliography
Ground Warfare - World War II

- **Overy, Richard - 1939 Countdown to War**
- **Overy, Richard - Why the Allies Won**
- **Rottman, Gordon - US 10th Mountain Division in World War II**
- **Rottman, Gordon - World War II US Cavalry Groups European Theater**
- **Rottman, Gordon - World War II Combat Reconnaissance Tactics**
- **Rottman, Gordon - US World War II Amphibious Tactics**
- **Rottman, Gordon - World War II Airborne Warfare Tactics**
- **Rottman, Gordon - World War II Infantry Anti Tank Tactics**
- **Ryan, Cornelius - Bridge Too Far**
- **Ryan, Cornelius - Last Battle**
- **Ryan, Cornelius - Longest Day**

Bibliography
Ground Warfare - World War II

- Sandars, John - British Guards Armored Division 1941-1945
- Sears, Stephen - The Battle of the Bulge
- Staff of Strategy & Tactics Magazine - War in the East
- Star, Arigon - Tales of the Mighty Code Talkers
- Thompson, Julian - War Behind Enemy Lines (first 100 pages on LRDG)
- Time Magazine - D-Day: 24 Hours That Saved the World
- Time Magazine - V-J Day: America's World War II Triumph in the Pacific
- Vansant, Wayne - Battle of the Bulge
- Von Mellenthin, Friedrich - Panzer Battles
- Williamson, Gordon and Andrew, Stephen - German Mountain + Ski Troops 1939-1945
- Williamson, Gordon and Volstad, Ron - Afrika Korps 1941-1943
- Williford G and McGovern T - Defenses of Pearl Harbor and Oahu 1907-1950
- Young, Ethan - Nanjing The Burning City
- Zaloga, Steven - Amtracs: US Amphibious Assault Vehicles
- Zaloga, Steven and Bryan, Tony - Armored Trains
- Zaloga, Steven - Early US Armor: Tanks 1916-40
- Zaloga, Steven - Superguns 1854-1991

Bibliography
Naval Warfare - World War II

- **Buchheim, Lothar - U Boat War**
- **Ennis, Garth - The Stringbags**
- **Forczyk, Robert - Fw 200 Condor vs. Atlantic Convoy 1941-43**
- **Glanzman, Sam - A Sailor's Story**
- **Goss, Chris - Fw 200 Condor Units of World War 2**
- **Grossnick, Roy - Kite Balloons to Airships: The Navy's Lighter Than Air Experience**
- **Howarth, David - The Shetland Bus / Across to Norway**
- **Konstam, Angus - The British Sailor of the Second World War**
- **Konstam, Angus - Scapa Flow**
- **Lohse, Alexandra+Middaugh, Jon - Operation Torch: The American Amphibious Assault on French Morocco**

Bibliography
Naval Warfare - World War II

- MacDonald, Scot - Evolution of Aircraft Carriers

- Macintyre, Donald - Aircraft Carrier, The Majestic Weapon

- Mason, John - The Atlantic War Remembered

- Mason, John - The Pacific War Remembered

- Maxtone-Graham, John - Ocean Liners at War: Dazzle & Drab

- Maxtone-Graham, John - The Only Way To Cross

- Stafford, Edward - Big E

- US Government Printing Office - Building the Navy's Bases in World War II - History of the Bureau of Yards and Docks and the Civil Engineer Corps 1940-1946

Bibliography
Air Warfare - World War II

- **Allen, HR - Who Won the Battle of Britain?**
- **Brown, Eric - Wings on My Sleeve**
- **Brown, Eric - Wings of the Luftwaffe: Flying German Aircraft of the Second World War**
- **Brown, Eric - Wings of the Navy: Flying Allied Carrier Aircraft of World War Two**
- **Caidin, Martin - Flying Forts**
- **Dahl, Roald - Flying Solo**
- **Dahl, Roald - Over to You**
- **Deighton, Len - Fighter**
- **Falconer, Jonathan - RAF Bomber Crewman**
- **Ford, Brian - German Secret Weapons**
- **Ford, Brian J - Secret Weapons: Technology, Science and the Race to Win World War II**
- **Griehl, Manfred - Luftwaffe Over America**
- **Gunston, Bill - Plane Speaking**
- **Hadaway, Stuart - The British Airman of the Second World War**

Bibliography
Air Warfare - World War II

- Noppen, Ryan - Malta 1940-42
- Overy, Richard - The Battle
- Price, Alfred - Britain's Air Defenses 1939-45
- Scott, Robert - God is My Co-Pilot
- Sharp, Dan - Luftwaffe: Secret Jets of the Third Reich
- Sharp, Dan - Luftwaffe: Secret Bombers of the Third Reich
- Sharp, Dan - Luftwaffe: Secret Wings of the Third Reich
- Steinbeck, John - Bombs Away: The Story of a Bomber Team
- Stiles, Bert - Serenade to the Big Bird
- Sweeting, CG - Combat Flying Clothing: Army Air Forces Clothing During World War II
- Wellum, Geoffrey - First Light
- Zaloga, Steven - German V-Weapon Sites 1943-45
- Zaloga, Steven - V-1 Flying Bomb 1942-52
- Zaloga, Steven - V-2 Ballistic Missile 1942-1945
- Zaloga, Steven - Operation Crossbow 1944
- Ziegler, Mano - Rocket Fighter

Bibliography
Logistics - World War II

- **Armstrong, John - The Railroad: What It Is, What It Does**
- **Ball, Don and Whitaker, Rogers - Decade of the Trains The 1940s**
- **Collard, Ian - Port of Southampton**
- **Goralski, Robert and Freeburg, Russell - Oil and War**
- **Reed Carter, Worrall - Beans, Bullets and Black Oil**

Bibliography
Selected Fiction - WWII

- Beach, Edward - Dust on the Sea
- Beach, Edward - Run Silent, Run Deep
- Cox, Richard - Sea Lion
- Deighton, Len - Bomber
- Deighton, Len - Bomber (radio drama)
- Deighton, Len - Goodbye, Mickey Mouse
- Deighton, Len - SS-GB
- Delingpole, James - Coward on the Beach
- Delingpole, James - Coward at the Bridge
- Forester, CS - The Good Shepherd
- Forester, CS - Ship
- Forester, CS - Gold From Crete
- Grossman, Vasily - Life and Fate (radio drama)
- Grossman, Vasily - Stalingrad (radio drama)
- Hersey, John - The War Lover
- Hirahara, Naomi - Summer of the Big Bachi
- Holland, James - The Odin Mission

Bibliography
Selected Fiction - WWII

- Johns, W.E. - Biggles (selected novels)
- Lay, Beirne and Bartlett, Sy - Twelve O'Clock High
- Lay, Beirne - I've Had It: The Survival of a Bomb Group Commander
- Leopold, Christopher - Blood and Guts is Going Nuts
- Michener, James - Tales of the South Pacific
- Monsarrat, Nicholas - The Cruel Sea
- Monsarrat, Nicholas - The Cruel Sea (radio drama)
- Pressfield, Steven - Killing Rommel
- Waugh, Evelyn - Brideshead Revisited
- Waugh, Evelyn - Brideshead Revisited (radio drama)
- Waugh, Evelyn - Sword of Honor Trilogy (Men at Arms, Officers and Gentlemen, Unconditional Surrender) (radio drama)
- Webb, James - Emperor's General
- White, Robb - Flight Deck, Torpedo Run, Up Periscope!

Bibliography
Korea

- **Farndale, Nigel - Last Action Hero of the British Empire**

Bibliography
Selected Fiction - Korea

- **Salter, James - The Hunters**

Bibliography
Vietnam

- Caputo, Philip - A Rumor of War
- Eisner, Wil - M-16A1 Rifle Operation + Preventive Maintenance
- Herr, Michael - Dispatches
- Fulton, William - Vietnam Studies: Riverine Operations
- Glasser, Ronald - 365 Days
- Marshall, SLA - Bird
- Page, Tim - Tim Page's Nam
- Sheehan, Neil - Arnheiter Affair
- Starry, Donn - Vietnam Studies: Mounted Combat in Vietnam
- Tolson, John - Vietnam Studies: Airmobility Operations 1961-1971
- Zimmerman, Dwight Jon and Vansant Wayne - The Vietnam War a Graphic History

Bibliography
Air Warfare - Vietnam

- **Bell, TE - B-57 Canberra Units of the Vietnam War**
- **Blesse, Frederick - Check Six**
- **Broughton, Jack - Going Downtown**
- **Broughton, Jack - Thud Ridge**
- **Drendel, Lou - And Kill Migs**
- **Futrell, R. Frank et.al - Aces and Aerial Victories**
- **Hampton, Dan - Hunter Killers**
- **Shepard, Elaine - The Doom Pussy**

Bibliography
Selected Fiction - Vietnam

- **DelVecchio, John - The 13th Valley**
- **O'Brien, Tim - Going After Cacciato**
- **Searls, Hank - The Pentagon**
- **Webb, James - Fields of Fire**
- **Webb, James - Sense of Honor**

Bibliography
Nuclear Warfare

- **Ball, Desmond - Can Nuclear War be Controlled?**
- **Berhow, Mark - US Strategic and Defensive Missile Systems 1950-2004**
- **Bracken, Paul - Command and Control of Nuclear Forces**
- **Fetter-Vorm, Jonathan - Trinity A Graphic History of the First Atomic Bomb**
- **Graff, Garrett - Raven Rock**
- **Hersey, John - Hiroshima**
- **Keeney, L. Douglas - 15 Minutes**
- **Light, Michael - 100 Suns**
- **Pringle, Peter and Arkin, William - SIOP**
- **Sheehan, Neil - A Fiery Peace in a Cold War: Bernard Schriever and the Ultimate Weapon**
- **Thomas, Gordon and Morgan-Witts, Max - Enola Gay**
- **Winkler, David - Searching The Skies: The Legacy of the United States Cold War Defense Radar Program**

Bibliography
Ground Warfare - Cold War

- Crowley, Robert (editor) - The Cold War: A Military History

- Dinter, Elmar and Griffith, Paddy - Not Over By Christmas: NATO's Central Front in World War III

- Fallows, James - National Security

- Geraghty, Tony - BRIXMIS

- Gervasi, Tom - Arsenal of Democracy

- Gibson, Steve - The Last Mission: Behind the Iron Curtain

- Greenberg, Lawrence - United States Army Unilateral and Coalition Operations in the 1965 Dominican Republic Intervention

- Guibert, Emmanuel and Lefevre, Didier and Lemercier, Frederic - The Photographer

Bibliography
Ground Warfare - Cold War

- Holbrook, James - Potsdam Mission
- Kahaner, Larry - AK-47, The Weapon That Changed the Face of War
- McDonough, James - The Defense of Hill 781: An Allegory of Modern Mechanized Combat
- Michener, James - Bridge at Andau
- Ogorkiewicz, Richard - Tanks: 100 Years of Evolution
- Ogorkiewicz, Richard - Observer of Cold War Tank Development
- Sis, Peter - The Wall: Growing Up Behind the Iron Curtain
- Stejskal, James - Special Forces Berlin
- Taylor, Dick - Chieftan Main Battle Tank 1966 to Present Owner's Workshop Manual
- Walker, Jonathan - Churchill's Third World War: British Plans to Attack the Soviet Empire
- Zaloga, Steven - Tank War - Central Front: NATO vs. Warsaw Pact
- Zaloga, Steven - Superguns 1854 - 1991

Bibliography
Soviet Union

- **Cockburn, Andrew - The Threat: Inside the Soviet Military Machine**
- **Tuveri, Igor (Igort) - The Ukrainian and Russian Notebooks: Life and Death Under Soviet Rule**
- **Salisbury, Harrison - The Russians**
- **Suvorov, Victor - Inside the Soviet Army**

Bibliography
Air Warfare - Cold War

- **Blackman, Tony and Wright, Anthony - The Valiant Boys**
- **Brookes, Andrew - TSR2 Britain's Lost Cold War Strike Jet**
- **Brookes, Andrew - RAF V Force 1955-69 Operations Manual**
- **Brookes, Andrew - RAF Canberra Units of the Cold War**
- **Crickmore, Paul - Lockheed A-12: The CIA's Blackbird and Other Variants**
- **Crickmore, Paul - Lockheed SR-71**
- **Davies, Peter - North American XB-70 Valkyrie**
- **Davies, Peter - Northrop Flying Wings**
- **Drendel, Lou - F-5 Freedom Fighter, Tiger II, Talon Illustrated**
- **Drendel, Lou - F-102 Delta Dagger Illustrated**
- **Drendel, Lou - F-106 Delta Dart Illustrated**

Bibliography
Air Warfare - Cold War

- **Ehrhard, Thomas P - Air Force UAVs The Secret History**
- **Gann, Ernest - The Black Watch**
- **Gibson, Chris - Vulcan's Hammer - V-Force Projects + Weapons Since 1945**
- **Ginter, Steve - Lockheed C-121 Constellation**
- **Ginter, Steve - North American AJ Savage**
- **Gordon, Yefim and Gunston, Bill - Soviet X-Planes**
- **Gunston, Bill - Early Supersonic Fighters of the West**
- **Gunston, Bill - Bombers of the West**
- **Gunston, Bill - Attack Aircraft of the West**
- **Gunston, Bill - Stealth Warplanes**
- **Gunston, Bill - Helicopters**
- **Hamilton-Paterson, James - Empire of the Clouds: When Britain's Aircraft Ruled the World**
- **Harvey, Frank - Strike Command**
- **Hoffman, Richard - Martin P5M Patrol Seaplane**

Bibliography
Air Warfare - Cold War

- Jenkins, Dennis R and Landis, Tony and Miller, Jay - American X-Vehicles An Inventory - X-1 to X-50
- Keeshen, Jim - Secret US Proposals of the Cold War
- McCormick, Roger - Patrick Air Force Base
- Motum, John - Putnam Aeronautical Review
- Peters, John and Nichol, John - Team Tornado
- Pitchfork, Graham - Buccaneer Boys
- Provan, John and Davies, REG - Berlin Airlift: The Effort and the Aircraft
- Pryce, Michael - BAe P.1216 Supersonic ASTOVL Aircraft
- Robarge, David - Archangel: CIA's Supersonic A-12 Reconnaissance Aircraft
- Rose, Bill + Buttler, Tony - Secret Projects: Flying Saucer Aircraft
- Shul, Brian - Sled Driver
- Sharp, Dan - RAF Secret Jets of Cold War Britain
- Sweetman, Bill - Aurora: The Pentagon's Secret Hypersonic Spyplane
- Sweetman, Bill - Stealth Aircraft
- Taylor, John WR - Aircraft 1969 -> Aircraft 1984

Bibliography - Naval Warfare - Cold War

- **Beaver, Paul - Encyclopaedia of the Fleet Air Arm Since 1945**
- **Blackman, Tony and Kennedy, Joe - Nimrod Boys**
- **Brittingham, Edward M - Sub Chaser - The Story of a Navy VP NFO**
- **Drendel, Lou - P-3 Orion Illustrated**
- **Dunham, Roger - Spy Sub**
- **Ford, Christopher and Rosenberg, David - The Admiral's Advantage: US Navy Operational Intelligence in world War II and the Cold War**
- **Franks, Richard - Shackleton, Guardian of the Sea Lanes**
- **Friedman, Norman - Network Centric Warfare**
- **Friedman, Norman - Modern Warship Design and Development**
- **Friedman, Norman - Conway's History of the Ship: Navies in the Nuclear Age - Warships Since 1945**

Bibliography - Naval Warfare - Cold War

- **Gibson, Chris - Nimrod's Genesis: RAF Maritime Patrol Projects and Weapons Since 1945**
- **Glynn, Michael - Airborne Antisubmarine Warfare From the First World War to the Present Day**
- **Heatley CJ - The Cutting Edge**
- **Heatley CJ - Forged in Steel US Marine Corps Aviation**
- **Hill, JR - Anti Submarine Warfare**

Bibliography - Naval Warfare - Cold War

- Macaulay, David - Crossing on Time: Steam Engines, Fast Ships and A Journey to the New World
- Marriott, Leo - Royal Navy Aircraft Carriers 1945-1990
- Moore, John - Jane's Naval Review 1984, 1985
- Peeks, Ryan - Aircraft Carrier Requirements and Strategy 1977-2001
- Polmar, Normal and White, Michael - Project Azorian
- Polmar, Norman and Whitman, Edward - Hunters and Killers Volume 2: Anti-Submarine Warfare from 1943
- RF Cross Associates - Sea-Based Airborne Antisubmarine Warfare 1940-1977
- Rodrigues, Larry - US Navy Airship Book
- Sontag, Sherry and Drew, Christopher and Drew Annette Lawrence - Blind Man's Bluff
- Spink, Tom - Pacific Patrol: A History of Patrol Aviation During the Cold War in the Pacific
- Ujifusa, Steven - A Man and His Ship
- Vistica, Gregory - Fall From Glory: The Men Who Sank The US Navy
- White, Rowland - Phoenix Squadron

Bibliography
Selected Fiction - Cold War

- **Allen, Thomas and Polmar, Norman - Ship of Gold**
- **Beach, Edward - Cold is the Sea**
- **Brennan, Gerald - Infinite Blues**
- **Brown, Dale - Flight of the Old Dog**
- **Bryant, Peter - Red Alert**
- **Clancy, Tom - Hunt for Red October**
- **Clancy, Tom - Red Storm Rising**
- **Clancy, Tom - Patriot Games**
- **Clancy, Tom - Clear and Present Danger**
- **Clancy, Tom - Sum of All Fears**
- **Coyle, Harold - Team Yankee**
- **Forrest-Webb, Bob - Chieftains**

Bibliography
Selected Fiction - Cold War

- **Gray, Anthony - The Penetrators**
- **Hackett, John - The Third World War**
- **Harvey, Frank - Air Force**
- **Harvey, Frank - Jet**
- **Harvey, Frank - Hudarsky's Raiders**
- **Hurd, Douglas and Osmond, Andrew - Send Him Victorious**
- **Hurd, Douglas and Osmond, Andrew - The Smile on the Face of the Tiger**
- **Hurd, Douglas and Osmond, Andrew - Scotch on the Rocks**
- **MacKintosh, Ian - Warship, HMS Hero, Holt RN**

Bibliography
Selected Fiction - Cold War

- **Palmer, Michael - War That Never Was**
- **Peters, Ralph - Red Army**
- **Robinson, Derek - Hullo Russia, Goodbye England**
- **Scott, Robert L - Look of the Eagle**
- **Searls, Hank - The Big X**
- **Shute, Nevil - On the Beach**
- **Taylor, Charles - Show of Force**
- **Tezuka, Osamu - MW**
- **Thomas, Craig - Firefox**
- **Thompson, Steven - Recovery**
- **Thompson, Steven - Bismarck Cross**
- **Thompson, Steven - Countdown to China**
- **Thompson, Steven - Top End**

Bibliography
Arab Israeli Wars

- **Folman, Ari and Polonsky, David - Waltz With Bashir: A Lebanon War Story**
- **Marshall, S.L.A - Swift Sword, The Historical Record of Israel's Victory June 1967**

Bibliography
Falklands

- BBC - The Falklands War (audio book)
- Bishop, Patrick - Winter War: Falklands Conflict
- Washington, Linda - Ten Years On: British Army in the Falklands
- West, Nigel - Secret War for the Falklands
- White, Rowland - Vulcan 607
- White, Rowland - Harrier 809
- Woodward, Sandy - One Hundred Days

Bibliography
Gulf War

- **Allen, Charles - Thunder and Lightning in the Gulf**
- **Dunnigan, James - From Shield to Storm**
- **McNab, Andy - Bravo Two Zero (audio book)**
- **Spence, Cameron - Sabre Squadron**
- **Watt, Robin - A Soldier's Sketchbook**

Bibliography
Post Cold War

- **Atkinson, Rick - In the Company of Soldiers**
- **Barnett, Thomas PM - The Pentagon's New Map**
- **Berube, Claude - Sea Shepherd: The Evolution of an Eco-Vigilante to Legitimized Maritime Capacity Builder**
- **Cook, Matthew - Sketches From Afghanistan**
- **Delisle, Guy - Shenzhen: A Travelogue From China**
- **Delisle, Guy - Jerusalem: Chronicles From the Holy City**
- **Delisle, Guy - Burma Chronicles**
- **Delisle, Guy - Pyongyang: A Journey in North Korea**
- **Doyle, Gerry and Herzinger, Blake - Carrier Killer - China's Anti-Ship Ballistic Missiles and Theater of Operations in the Early 21st Century**
- **Dysart, Joshua - Unknown Soldier**
- **Edworthy, Niall - Main Battle Tank: Royal Scot Dragoon Guards in Operation Telic**
- **Ennis, Garth - Unknown Soldier**

Bibliography
Post Cold War

- **Fabey, Michael - Crashback**
- **Filiu, Jean-Pierre + B., David - Best of Enemies: A History of US and Middle East Relations: Part One 1783-1953**
- **Findakly, Brigitte and Trondheim, Lewis - Poppies of Iraq**
- **Galeotti, Mark - The Modern Russian Army 1992 - 2016**
- **Galeotti, Mark - Spetsnz: Russia's Special Forces**
- **Gershaneck, Kerry - Political Warfare: Strategies for Combating China's Plan to "Win Without Fighting"**
- **Gore, Al - An Inconvenient Truth**
- **Gourley, John - P-8A Poseidon**
- **War**

Bibliography
Post Cold War

- Halls, Monty - Commando The Inside Story of Britain's Royal Marines
- Hampton, Dan - Viper Pilot: A Memoir of Air Combat
- Hennessey, Patrick - The Junior Officers Reading Club: Killing Time and Fighting Wars
- Jacobsen, Sid and Colon, Ernie - The 9/11 Report: A Graphic Adaptation
- Lai, Benjamin - The Chinese People's Liberation Army Since 1949 Ground Forces
- Lind, William - FMFM 1-A Fourth Generation War

Bibliography
Post Cold War

- Martin, David and Walcott, John - Best Laid Plans

- Middleton, Nick - An Atlas of Countries That Don't Exist

- Mumford, Steve - Baghdad Journal: An Artist in Occupied Iraq

- Neubeck, Ken - US ECM Aircraft In Action

- Neufeld, Josh - A.D. New Orleans After the Deluge

- Paul, Christopher and Marcellino, William - Dominating Duffer's Domain: Lessons for the USMC Information Operations Practitioner

- Peters, Ralph - Fighting for the Future

- Pocock, Chris - Dragon Lady Today

- Rodgers, Walter - Sleeping With Custer and the 7th Cavalry: An Embedded Reporter in Iraq

Bibliography
Post Cold War

- **Satrapi, Marjane - Persepolis**
- **Satrapi, Marjane - Persepolis 2**
- **Sattouf, Riad - The Arab of the Future: A Childhood in the Middle East, Volumes 1 + 2 + 3 + 4**
- **Stassen, J.P. - Deogratias: A Tale of Rwanda**
- **Tanner, James - The British Army Since 2000**
- **US Marine Corps - Small Wars 21st Century**
- **West, Bing - The March Up**
- **Winchester, Simon - Pacific**
- **Wragg, David - World Sea Power Guide**
- **Zinni, Anthony - Battle Ready**
- **Zucchino, David - Thunder Run**

Bibliography
Selected Fiction - Post Cold War

- Ackerman, Elliot and Stavridis, James - 2034
- Berube, Claude - The Aden Effect
- Berube, Claude - Syren's Song
- Berube, Claude - The Philippine Pact
- Bond, Larry - Shattered Trident
- Bond, Larry + Larkin, Patrick - Red Phoenix
- Brookes, Adam - Night Heron / Spy Games / Spy's Daughter
- Carroll, Ward - Punk's War
- Cole, August - The Atlantic Council Art of Future Warfare Project: War Stories From the Future
- Couch, Dick - Rising Wind
- Gandt, Robert - With Hostile Intent
- Hawksley, Humphrey and Holberton, Simon - Dragon Strike
- Lind, William - Victoria
- Michaels, David - Tom Clancy's EndWar

Bibliography
Selected Fiction - Post Cold War

- **Nagata, Linda - The Red: First Light**
- **Peters, Ralph - Perfect Soldier**
- **Peters, Ralph - The Devil's Garden**
- **Peters, Ralph - Traitor**
- **Peters, Ralph - Twilight of Heroes**
- **Peters, Ralph - War After Armageddon**
- **Poyer, David - China Sea**
- **Poyer, David - The Gulf**
- **Poyer, David - The Med**
- **Poyer, David - Tomahawk**
- **Pressfield, Steven - The Profession**
- **Shirreff, Richard - 2017 War With Russia**
- **Singer, PW + Cole, August - Ghost Fleet**
- **Singer, PW + Cole, August - Burn-In**
- **Tsugihara, Ryuji + Hidaka, Yoshiki - The First President of Japan**
- **Uriarte, Maximillian - The White Donkey: Terminal Lance**
- **White, Robin - The Sword of Orion**

Bibliography
Air Warfare - Air Transport

- **Baldwin, James and Kriendler, Jeff - Pan American World Airways Aviation History Through the Words of its People**
- **Baum, Brian - Boeing 747 SP**
- **Chin, Art - Anything, Anytime, Anywhere: The Legacy of The Flying Tiger Line 1945-1989**
- **Chin, Art - The Seaboard Saga: The History of Seaboard World Airways 1946-1980**
- **Cave, Hugh - Wings Across the World, The Story of Air Transport Command**
- **Cohen, Stan - Wings to the Orient**

Bibliography
Air Warfare - Air Transport

- **Davies REG and Phillip Birtles - DeHavilland Comet**
- **Davies, REG - Fallacies and Fantasies of Air Transport History**
- **Davies, REG - Rebels and Reformers of the Airways**
- **Davies, REG - Lindberg - An Airman, His Aircraft, and His Great Flights**
- **Davies REG - Aeroflot: An Airline and Its Aircraft**
- **Davies REG - British Airways: The Imperial Years**
- **Davies REG - Delta: An Airline and Its Aircraft**
- **Davies REG - Eastern: An Airline and Its Aircraft**
- **Davies REG - Lufthansa: An Airline and Its Aircraft**
- **Davies REG - Pan Am: An Airline and Its Aircraft**
- **Davies REG - Saudia Saudi Arabian Airlines: An Airline and Its Aircraft**
- **Davies REG - TACA: An Airline and Its Aircraft**
- **Davies REG - TransBrasil: An Airline and Its Aircraft**
- **Davies REG - TWA: An Airline and Its Aircraft**

Bibliography
Air Warfare - Air Transport

- El-Hai, Jack - Non Stop A Turbulent History of Northwest Airlines
- Forman, Peter - Wings of Paradise: Hawaii's Incomparable Airlines
- Gandt, Robert - Skygods: The Fall of Pan Am
- Gann, Ernest - Sky Roads
- Gann, Ernest - Fate is the Hunter
- Ginsburg, Malcolm - London City Airport 30 Years Serving the City
- Hogan, Paul - London City Airport
- Jarvis, Paul - Mapping the Airways
- Kent, David - Midway Airport
- Koren, Jay - The Company We Kept
- Krupnick, Jon - Pan American's Pacific Pioneers
- Lester, Valerie -   Fasten Your Seat Belts
- Lodeesen, Marius - Captain Lodi Speaking
- Malkin, Richard - Boxcars in the Sky
- Malkin, Richard - The Way It Was: The Early Days of Air Cargo
- Masland, William - Through the Back Door of the World on a Ship That Had Wings
- Mason, Daniel - Detroit Metro Airport

Bibliography
Air Warfare - Air Transport

- Oates, Carl - Canton Island: Aerial Crossroads of the Pacific
- O'Callaghan, Timothy - Henry Ford's Airport
- Ovenden, Mark and Roberts, Maxwell - Airline Maps: A Century of Art and Design
- Ryan, Cornelius - One Minute to Ditch!
- Sampson, Anthony - Empires of the Skys
- Sterling, Christopher - Airliners: charting Air Transport History With REG Davies
- Tunner, William - Over the Hump
- Veronico, Nicholas - Boeing 377 Stratocruiser
- Wildenberg, Thomas and Davies, REG - Howard Hughes: An Airman, His Aircraft, and His Great Flights
- Wilson, Ned - For Pilots Eyes Only
- Wood, John Walter - Airports
- Young, Gavin - Beyond Lion Rock
- Zukowsky, John - Building for Air Travel

Bibliography
Selected Fiction - Air Warfare - Air Transport

- **Hailey, Arthur and Castle, John - Runway Zero Eight**
- **Searls, Hank - The Crowded Sky**

Bibliography
Military Space

- **Burrows, William - Deep Black**

- **Chun, Clayton - Defending Space: US Anti-Satellite Warfare and Space Weaponry**

- **Homer, Courtney - Spies in Space: Reflections on National Reconnaissance and the Manned Orbiting Laboratory**

- **Karas, Thomas - The New High Ground**

- **Outzan, James - The Dorian Files Revealed: A Compendium of the NRO's Manned Orbiting Laboratory Documents**

Bibliography
Military Medicine

- **Herman, Jan - Battle Stations Sick Bay**
- **Levien, Michael - Naval Surgeon: The Voyages of Dr. Edward H Cree RN**
- **Riley, Terence - Ship's Doctor**

Bibliography
Arts

- **Aulich, James - War Posters: Weapons of Mass Communication**
- **Bachner, Evan - At Ease: Navy Men of World War II**
- **Behrens, Roy - False Colors: Art, Design, and Modern Camouflage**
- **Binyon, Helen - Eric Ravilious: Memoir of an Artist**
- **Cloud, Stanley and Olson, Lynne - The Murrow Boys: Pioneers on the Frontline of Broadcast Journalism**
- **Edwards, Bob - Edward R. Murrow and the Birth of Broadcast Journalism**
- **Farrell, Jennifer - Modern Times: British Prints 1913-1939**
- **Friend, Andy - Ravilious & Co: The Pattern of Friendship**

Bibliography
Arts

- **McLean, Ruari - Edward Bawden: War Artist and His Letters Home 1940-45**

- **Murrow, Edward R - In Search of Light: The Broadcasts of Edward R. Murrow 1936-1961**

- **Phillips, Christopher - Steichen at War**

- **Saunders, Gill and Yorke, Malcolm - Bawden, Ravilious and the Artists of Great Bardfield**

- **Skipworth, Peyton and Webb, Brian - Eric Ravilious Scrapbooks**

- **Steichen, Edward - The Blue Ghost**

- **Steichen, Edward - Power in the Pacific**

- **Steichen, Edward + Sandburg, Carl - Road to Victory: A Procession of Photographs of the Nation at War**

- **Steichen, Edward - US Navy War Photographs: Pearl Harbor To Tokyo Bay**

Bibliography
Arts

- **Weaver, Nigel + O'Neill, Robin + Bawden, Edward - Edward Bawden in the Middle East**
- **Winfield, Betty Houchin and DeFleur Louis B - The Edward R. Murrow Heritage: Challenge for the Future**

- **Documentary - Eric Ravilious: Drawn to War**

Bibliography Cartography

- **Bryars, Time + Harper, Tom - A History of the 20th Century in 100 Maps**
- **Clarke, Victoria - Map: Exploring the World**
- **Deverson HJ and Lampitt, Ronald - The Map That Came to Life**
- **Harrison, Richard Edes - Look At The World: The Fortune Atlas For World Strategy**
- **Harrison, Richard Edes - Maps and How to Understand Them**
- **Wilford, John Noble - The Mapmakers**

Bibliography
Wargaming

- **Allen, Thomas - War Games**
- **Antal, John - Combat Team The Captain's War: An Interactive Exercise in Company Level Command in Battle**
- **Curry, John - Innovations in Wargaming Volume 1**
- **Curry, John - Paddy Griffith's Wargaming Operation Sealion**
- **Dunnigan, James - The Complete Wargames Handbook**
- **Griffith, Paddy - Sprawling Wargames: Multiplayer Wargaming**
- **Griffith, Paddy and Curry, John - Paddy Griffith's Game of War: Reflections on a Lifetime of Wargaming**
- **Griffith, Paddy - Napoleonic Wargaming for Fun**

Bibliography Wargaming

- Hunter, John - World Peace and Other 4th Grade Achievements
- Palmer, Nicholas - The Comprehensive Guide to Board Wargaming
- Perla, Peter - The Art of Wargaming
- Person, Harry - Achtung Schweinehund! A Boys Own Story of Imaginary Combat
- Rommel, Erwin - Problems For Platoon and Company
- Szerlip, B.. Alexandra - The Man Who Designed the Future
- Vlahos, Michael - The Blue Sword: The Naval War College and the American Mission 1919-1941
- Von Cochenhausen - Wargames Primer
- Wells, HG - Floor Games
- Wells, HG - Little Wars
- Williams, Frank - What Now Lieutenant?
- Wilson, Andrew - The Bomb and the Computer

Bibliography
Soldiering

- **Beevor, Antony - Inside the British Army**
- **Brickhill, Paul - The Great Escape**
- **Dunnigan, James - Digital Soldiers**
- **Hackett, John - Profession of Arms**
- **Homer - Iliad**
- **Home - Odyssey**
- **McPhee, John - La Place de la Concorde Suisse**
- **Ricks, Thomas - Making the Corps**

Bibliography
Intelligence

- **Aldrich, Richard - GCHQ - The Uncensored Story of Britain's Most Secretive Intelligence Agency**
- **Folsom, Robert - The Life and Mysterious Death of Ian Mackintosh**
- **Kinzer, Stephen - Operation Ajax**
- **Lockhart, Robin Bruce - Reilly Ace of Spies**
- **Lockhart, Robin Bruce - Reilly: The First Man**
- **Macintyre, Ben - The Spy and the Traitor : the Greatest Espionage Story of the Cold War**
- **Maclean, Fitzroy - Escape to Adventure**
- **Smith, Michael - Bletchley Park: The Code Breakers of Station X**
- **Turing, Dermont - Bletchley Park: Demystifying the Bombe**
- **West, Nigel - Games of Intelligence**
- **Wilford, John Noble - The Mapmakers**

Bibliography
Selected Fiction - Intelligence

- Childers, Erskine - Riddle of the Sands (radio drama)
- Dryden, Alex - Red to Black
- Fleming, Ian - James Bond novels (all)
- Herron, Mick - Slow Horses, Dead Lions
- Horowitz, Anthony - Trigger Mortis
- Judd, Alan - A Breed of Heroes
- LeCarre, John - The Spy Who Came in From the Cold
- LeCarre, John - Tinker, Tailor, Soldier, Spy
- Le Carre, John - Tinker, Tailor, Soldier, Spy (radio drama)
- LeCarre, John - The Honourable Schoolboy
- LeCarre, John - The Honourable Schoolboy (radio drama)
- LeCarre, John - A Perfect Spy (radio drama)
- LeCarre, John - Smiley's People
- LeCarre, John - Smiley's People (radio drama)
- LeCarre, John - The Russia House (radio drama)

Bibliography
Selected Fiction - Intelligence

- LeCarre, John - The Constant Gardener
- LeCarre, John - A Most Wanted Man
- LeCarre, John - Our Kind of Traitor
- LeCarre, John - A Delicate Truth
- LeCarre, John - A Legacy of Spies
- LeCarre, John - A Small Town in Germany (radio drama)
- LeCarre, John - Agent Running in the Field
- LeCarre, John - Absolute Friends
- LeCarre, John - Silverview
- MacKintosh, Ian - The Sandbaggers
- Price, Anthony - Labyrinth Makers, Alamut Ambush, Our Man in Camelot, War Game, The '44 Vintage, Tomorrow's Ghost, Soldier No More
- Rucka, Greg - Queen & Country - A Gentleman's Game
- Rucka, Greg - Queen & Country - Private Wars
- Rucka, Greg - Queen & Country - The Last Run

Bibliography
Comics / Pulps

- **Bergese, Francis - Buck Danny**
- **Caniff, Milton - Steve Canyon**
- **Caniff, Milton - Terry and the Pirates**
- **Conner, Jeff and Waltz - The Rocketeer Jet Pack Adventures**
- **Crane, Roy - Buz Sawyer**
- **Eaton, George - Bill Barnes Air Adventurer (Bill Barnes Takes a Holiday, Blood Red Road to Petra, Charger Goes to Sydney, Earmarked Gold, Flaming Circle, Lancer Strikes, Magnificent Gesture, Moon God, Purple Fez, Ring of Death, Saver of Souls, Silent Fleet, Wings of the West, Wings Over Trujillo)**
- **Gould, Chester - Dick Tracy**
- **Herge - The Adventures of TinTin - In the Land of the Soviets, King Ottokar's Sceptre, The Blue Lotus, The Broken Ear, The Calculus Affair, TinTin In the Congo**

Bibliography
Comics / Pulps

- Martinek, Frank Victor - Don Winslow of the Navy

- Nylund, Eric and Lee, Michael and Berman, Nancy and Trautmann, Eric - Crimson Skies

- Stackpole, Michael and Vardeman Robert and Coleman Loren - Crimson Skies Spicy Air Tales

- Stevens, Dave - The Rocketeer

- Uslan, Michael and Hildebrandt, Greg and Hildebrandt Tim - New Adventures of Terry and the Pirates

- Whitehouse, Arch - Griffon Mysteries: Brood Sea Hangar Snare, Griffon's Gamble, Guile of the Griffon, Guns of the Griffon, Hawks of Hate, Legion of the Flame, Lockheed Loot, Red Heads of Death, Scourge of the Sky

Bibliography
Manga

- Hirokane, Kenshi - Division Chief Kosaku Shima (Volumes 1-3), President Kosaku Shima (Volumes 1-2)
- Kawaguchi, Kaiji - Kubo Ibuki
- Kiyama, Yoshitaka - The Four Immigrants Manga
- Miyazaki, Hayo - Tigers in the Mud
- Mizuki, Shigeru - Onward Towards Our Noble Deaths
- Mizuki, Shigeru - Showa A History of Japan 1926-1939
- Mizuki, Shigeru - Showa A History of Japan 1939-1944
- Mizuki, Shigeru - Showa A History of Japan 1944-1953
- Mizuki, Shigeru - Showa A History of Japan 1953-1989
- Nakazawa, Keiji - Barefoot Gen
- Tezuka, Osama - Buddha

Plays

- **A Walk in the Woods**
- **Best of Enemies**
- **Black Watch**
- **Cherry Orchard**
- **Chess**
- **Feel Good**
- **Hamlet**
- **Henry V**
- **Lehman Brothers Trilogy**
- **Les Miserables**
- **Merry Wives of Windsor**
- **Nicholas Nickleby**
- **Operation Epsilon**
- **Othello**

Plays

- Richard III
- Rock and Roll
- Romeo and Juliet
- Single Spies
- Tempest
- Tempo Yukyoroku (Kabuki play)
- Tomfoolery
- Trojan Women
- War Horse

Plays - Radio Dramas

- **Anna's War**
- **Antony and Cleopatra**
- **Big Sky**
- **Catherine The Great: Husbands, Lovers and Sons**
- **Churchill Barriers**
- **Desecration**
- **Electra**
- **Farran at Bay**
- **Golden Years Freidrichstrasse**
- **Headhunters**
- **Hide the Moon**

Plays - Radio Dramas

- Inquest
- Keeping the Wolf Out: Mad Dog
- Leni Goes to Hollywood
- Lines in the Sand
- Mosley Must Fall
- My Dear Bessie
- Oresteia - Agamemnon, The Libation Bearers, The Furies
- Private Peaceful
- The Adventures: Scenes From the East India Company
- The Medici: Bankers, Gangsters, Popes
- The Price of Oil, The Weapon
- Tommies
- Tommies 30 June 1916
- Tsar: Ivan the Terrible
- Turning Point: The Fall
- A World Elsewhere

Movies
Ancient World

- 300 Spartans
- A Funny Thing Happened on the Way to the Forum
- Alexander the Great
- Fall of the Roman Empire
- Eagle
- Greatest Story Ever Told
- Helen of Troy
- I Claudius (Television series)
- In Search of the Trojan War (Television series)
- In Search of Myths and Heroes (Television series)
- In the Footsteps of Alexander the Great (Television series)
- Jason and the Argonauts

Movies
Ancient World

- **Odyssey**
- **Rome (Television series)**
- **Roman Mysteries (Television series)**
- **Spartacus**
- **Story of India (Television series)**
- **The Robe**
- **Ulysses (Odysseus)**

Movies
Medieval World

- **Borgias (Television series)**
- **Chimes at Midnight**
- **Conquistadors (Television series)**
- **Cromwell**
- **Crusades**
- **Don Quixote**
- **Dreaming of the Meridian Arc**
- **Elizabeth**
- **Elizabeth - the Golden Age**
- **Hidden Fortress**
- **Kagemusha**

Movies
Medieval World

- Man of La Mancha
- Private Life of Samuel Pepys
- Ran
- Robin Hood
- Sanjuro
- Samurai Champloo (Television series)
- Seven Samurai
- Shogun (Television series)
- Tale of Osaka Castle
- Tales of the Genji

Movies
18th Century

- 1776
- Abel Gance's Napoleon
- Aguirre, the Wrath of God
- A Light in the Forest
- Captain Blood
- Captain Horatio Hornblower
- Culloden
- Emperor's New Clothes
- Horatio Hornblower (Television series)
- Madness of King George
- Marie Antoinette
- Master and Commander
- Napoleon
- Northwest Passage
- Treasure Island

Movies
19th Century

- **Birth of a Nation**
- **Breaker Morant**
- **Charge of the Light Brigade**
- **Colonel Redl**
- **Dances With Wolves**
- **Fifty Five Days at Peking**
- **Fort Apache**
- **Four Feathers**
- **General**
- **Gettysburg**
- **Glory**
- **Gods and Generals**
- **Gone With The Wind**
- **Great Locomotive Chase**
- **Gunga Din**

Movies
19th Century

- **Horse Soldiers**
- **Khartoum**
- **Kim**
- **Last Samurai**
- **Les Miserables (1935)**
- **Lives of a Bengal Lancer**
- **Man Who Would Be King**
- **Red Badge of Courage**
- **Rio Grande**

Movies
19th Century

- Searchers
- Sharpe's Waterloo
- She Wore a Yellow Ribbon
- Stagecoach
- They Died With Their Boots On
- Union Pacific
- Wind and the Lion
- Yojimbo
- Young Winston
- Zulu

Movies
World War I

- All Quiet on the Western Front
- All The Kings Men
- Battleship Potemkin
- Blue Max
- Dawn Patrol
- Dr. Zhivago
- Flyboys
- Gallipoli
- Hell's Angels

Movies
World War I

- Lawrence of Arabia
- Lighthorsemen
- Lost Prince
- My Boy Jack
- Nicholas + Alexandra
- October: Ten Days That Shook the World
- Paths of Glory
- Red Baron
- Reilly Ace of Spies (Television series)
- They Shall Not Grow Old
- Thirty Nine Steps
- Wings
- Zeppelin

Movies
Interwar

- **Aviator**
- **Brideshead Revisited**
- **Brideshead Revisited (Television series)**
- **Cabaret**
- **Castles in the Sky**
- **Conformist (Il Conformista)**
- **Downton Abbey (Television series)**
- **Duck Soup**
- **Flying Fleet**
- **For Whom The Bell Tolls**
- **Gandhi**
- **Gathering Storm**
- **Glorious 39**

Movies
Interwar

- **Glorious 39**
- **Jewel in the Crown**
- **Passage to India**
- **Sand Pebbles**
- **Task Force**
- **Test Pilot**
- **The Wind Rises**
- **Triumph of the Will**
- **Wind That Shakes the Barley**

Movies
World War II

- 1941
- 36 Hours
- 633 Squadron
- Above Us the Waves
- Americanization of Emily
- Angels One Five
- Band of Brothers (Television series)
- Battle of Britain
- Battle of San Pietro
- Battle of the Bulge
- Bell for Adano
- Big Red One
- Biloxi Blues
- Bridge on the River Kwai
- Bridge Too Far

Movies
World War II

- Caine Mutiny
- Casablanca
- Catch-22
- Churchill
- Cockleshell Heroes
- Colditz (Television series)
- Command Decision
- Cross of Iron
- Cruel Sea

Movies
World War II

- Dad's Army
- Dad's Army (Television series)
- Dambusters
- Darby's Rangers
- Darkest Hour
- Das Boot
- Decoration Day
- Desert Fox
- Dirty Dozen
- Dive Bomber
- Eagle Has Landed
- Empire of the Sun
- English Patient
- Eternal Zero

Movies
World War II

- **First of the Few**
- **From Here to Eternity**
- **God is My Co-Pilot**
- **Grave of the Fireflies**
- **Great Escape**
- **Guns of Navaronne**
- **Hitler The Last 10 Days**
- **Hope and Glory**
- **Ice Cold in Alex**
- **Iceland**
- **In Harms's Way**
- **In This Corner of the World**
- **Into the Storm**
- **Is Paris Burning?**

Movies
World War II

- Japan's Longest Day
- Kelly's Heroes
- King's Choice
- Last Days of Mussolini
- Last Emperor
- Let There Be Light
- Longest Day
- Lost Horizon
- MacArthur
- Malena
- Malta Story

Movies
World War II

- **Mein Kreig**
- **Midway**
- **Mr. Roberts**
- **Momotaro's Sea Eagle**
- **Monuments Men**
- **Night Train to Munich**
- **Objective Burma**
- **On the Town**
- **Oppenheimer**
- **Otokotachi no Yamato**
- **Overlord**
- **Patton**
- **Pearl Harbor**
- **Pursuit of the Graf Spee**

Movies
World War II

- Rainey Day Women
- Rape of Europa
- Red Tails
- Rome Open City
- Royal Night Out
- Run Silent Run Deep
- Sahara
- Saving Private Ryan
- Sea of Sand
- Sea Wolves

Movies
World War II

- **Secret of Santa Vittoria**
- **Secret War of Harry Frigg**
- **Shetland Bus (Suicide Mission)**
- **Sink the Bismarck**
- **Six Minutes to Midnight**
- **Soldier's Story**
- **South Pacific**
- **SS-GB (Television series)**
- **Stalag 17**
- **Stalingrad**
- **Theirs is the Glory**
- **The Story of GI Joe**
- **Their Finest**
- **They Were Expendable**
- **Thin Red Line**

Movies
World War II

- **Thirty Seconds Over Tokyo**
- **Tora Tora Tora**
- **The Train**
- **Twelve O'Clock High**
- **Up Periscope**
- **Valkyrie**
- **Victory Through Airpower**
- **Von Ryan's Express**
- **Went the Day Well**
- **When Trumpets Fade**
- **Where Eagles Dare**
- **Windtalkers**
- **Young Lions**

Movies
Korean War

- Bridges at Toko-Ri
- Give 'Em Hell Harry!
- House of Bamboo
- Hunters
- MASH
- McConnell Story
- Sayonara

Movies
Vietnam War

- **Apocalypse Now**
- **Bat-21**
- **Flight of the Intruder**
- **Full Metal Jacket**
- **Good Morning Vietnam**
- **Green Berets**
- **Indochine**
- **Killing Fields**
- **Platoon**
- **Ugly American**

Movies
Nuclear Warfare

- Atomic Cafe
- Bombers B-52
- By Dawn's Early Light
- Count Down to Looking Glass
- Crisis Game
- Day After
- Dr. Strangelove
- Edge of Darkness
- Failsafe
- Missiles of October
- On the Beach
- Seven Days in May
- Strategic Air Command
- War Game
- Wargames
- World War 3 The Movie

Movies
Cold War

- An Ungentlemanly Act
- Bananas
- Big Jim McClain
- Big Lift
- Buffalo Soldiers
- Charlie Wilson's War
- Clear and Present Danger
- Day of the Dolphin
- Death of Stalin
- Deutschland 83, 86, 89 (Television series)

Movies
Cold War

- **Falklands Play**
- **Firefox**
- **Flight From Ashiya**
- **Good Night and Good Luck**
- **Gorky Park**
- **Honor Bound**
- **House of Cards**
- **Hunt for Red October**
- **In Einem Land, Das es Nicht Mehr Gibt**
- **Keep the Cold War Cold**
- **Lives of Others**

Movies
Cold War

- **Miracle**
- **Missiles of October**
- **Mouse That Roared**
- **Mouse on the Moon**
- **Patriot Games**
- **Pentagon Wars**
- **The Plane Makers (Television series)**
- **The Russians Are Coming, The Russians Are Coming**
- **Sailor (Television series)**
- **Shoes of the Fisherman**
- **Sound Barrier**
- **Third Man**
- **Thirteen Days**
- **Threads**
- **Top Gun**
- **Toward the Unknown**
- **Very British Coup**
- **Warship (Television series)**

Movies
Post Cold War

- **Above and Beyond (IAF)**
- **Area 88**
- **Argo**
- **Battle of Algiers**
- **Belfast**
- **Black Hawk Down**
- **Black Watch**
- **Bloody Sunday**
- **Bluestone 42 (Television series)**
- **Bravo Two Zero**
- **Captain Phillips**
- **Citizen K**
- **Constant Gardener**
- **Control Room**
- **Escape From Iran: The Canadian Caper**
- **French Minister**

Movies
Post Cold War

- **Ghostwriter**
- **Gunner Palace**
- **Harry's Game / Belfast Assassin**
- **Hidden Agenda**
- **Hunter Killer**
- **Jack Ryan Shadow Recruit**
- **Jack Ryan (TV series)**
- **Kubo Ibuki**
- **Live Free or Die Hard**
- **Long Good Friday**
- **Occupied**
- **Odd Man Out**
- **Rescue Wings**
- **Restrepo**
- **Rising Sun**

Movies
Post Cold War

- Secret State
- Silent Service
- Speed and Angels
- Sum of All Fears
- Syriana
- Three Kings
- Top Gun Maverick
- Traffic
- Traffik
- Warriors
- War Tapes
- Wild Geese
- Zero Dark Thirty
- Zero Days

Movies
Intelligence

- A Most Wanted Man
- Billion Dollar Brain
- Breaking the Code
- Bridge of Spies
- Callan
- Casino Royale
- Conversation
- Defense of the Realm
- The Diplomat (Television series)
- Eiger Sanction
- Fair Game
- Fourth Protocol
- Funeral in Berlin

Movies
Intelligence

- **The Game**
- **The Gatekeepers**
- **Ice Station Zebra**
- **The Imitation Game**
- **Ipcress File**
- **James Bond**
- **Johnny Worricker Trilogy - Page Eight, Turks & Caicos, Salting the Battlefield**
- **La Femme Nikita**
- **Little Drummer Girl**
- **Little Drummer Girl (Television series)**
- **Looking Glass War**

Movies
Intelligence

- Mr. Palfrey of Westminster (Television series)
- A Murder of Quality
- The Night Manager (Television series)
- North by Northwest
- Our Kind of Traitor
- Our Man in Havana
- Perfect Spy (Television series)
- Russia House

Movies
Intelligence

- Sandbaggers (Television series)
- Slow Horses (Television series)
- Smiley's People (Television series)
- Soft Targets
- Spy Among Friends
- Spy Who Came in From the Cold
- Tailor of Panama
- Three Days of the Condor
- Tinker Tailor Soldier Spy
- Tinker, Tailor, Soldier, Spy (Television series)
- Whistle Blower

Movies
Air Transport

- **Airport**
- **China Clipper**
- **Crowded Sky**
- **Fate is the Hunter**
- **High and the Mighty**
- **Sully**

Board Wargames Played Pre-World War II

- **Battlecry - Milton Bradley**
- **Broadside - Milton Bradley**
- **Conquest of the Empire - Eagle**
- **Constantinople - States of Siege**
- **Dogfight - Milton Bradley**
- **Napoleon at Waterloo - SPI**
- **Skirmish - Milton Bradley**
- **We the People - AH**

Board Wargames Played World War II

- Arnhem - SPI
- Axis and Allies - MB
- Axis and Allies 1942 - AH
- Battle for Moscow - GDW
- Carrier Strike - Milton Bradley
- Chain Home - Warpspawn
- Crete - SPI
- Eben Emael - SPI
- Hit the Beach - Milton Bradley
- 1939-1945 - Speltjanst

Board Wargames Played World War II

- **Malta Convoy - Warp Spawn**
- **Memoir 44 - Days of Wonder**
- **Naval Battles - Phalanx**
- **Quartermaster General - Griggling**
- **Red Devils - SPI**
- **Tank Battle - Milton Bradley**
- **Victory in the Pacific - AH**
- **War at Sea - AH**
- **World In War: Combined Arms 1939-1945 - Speltjanst**

Board Wargames Played Post World War II

- Air War - SPI
- Battle for Hue - SDC
- Battle for the Falklands - Mayfair
- Berlin 85 - SPI
- Bundeswehr - SPI
- Hunt for Red October - TSR
- NORAD - SDC
- Oil War - SPI
- Operation Pegasus - Task Force

Board Wargames Played Post World War II

- Red Dragon Rising - SPI
- Red Storm Rising - TSR
- Revolt in the East - SPI
- Rolling Thunder - Warp Spawn
- SAC - High Flying Dice
- Strike Force One - SPI
- Wurzburg - SPI
- Yugoslavia - SPI

Matrix Games Played

- **Flattening the Curve**

Tactical Decision Games Played

- **Schmidt, JF - Mastering Tactics: A Tactical Decision Games Workbook**

Miniature Wargames Played

- **Seapower - Alnavco**
- **SeaTac - Q Games**
- **Sword and the Flame - Yaquinto**
- **Wargames Rules Infantry Action Platoon Level Combat 1925-1975 - WRG**
- **Wargames Rules Armour + Infantry 1925-1950 - WRG**
- **Wargames Rules Armour + Infantry 1950-1975 - WRG**
- **Wargames Rules for Armoured Warfare at Company + Battalion Battle Group Level 1950-1985 - WRG**
- **Wargames Rules for All Arms Land Warfare From Platoon to Battalion Level 1925-1950 - WRG**
- **Wargames Rules for All Arms Land Warfare From Platoon to Battalion Level 1950-2000 - WRG**

Computer Wargames Played

- **GECOS Basic**
  - **GE Gunner**
- **HP2000 Basic**
  - **Oregon Trail**
- **Apple II**
  - **A2-FS1 Flight Simulator**
  - **Castle Wolfenstein**
  - **Hammurabi**
  - **Santa Paravia en Fiumaccio**
  - **Sargon**
  - **Seven Cities of Gold**
  - **Zork**

Computer Wargames Played

- **Atari 800**
  - **Blue Max**
  - **Eastern Front**
  - **Missile Command**
- **SNES**
  - **SimCity**
- **Turbo-Grafix 16**
  - **Falcon**

Computer Wargames Played

- **Macintosh**
  - **Age of Empires**
  - **Age of Empires II - Age of Kings**
  - **Age of Mythology**
  - **Caesar II**
  - **Legion Arena**
  - **Medieval Empires**
  - **Oregon Trail II**
  - **SimCity 2000**

Computer Wargames Played

- **Xbox**
  - **Full Spectrum Warrior**
- **Nintendo GBA**
  - **F/A-18F Super Hornet**
  - **Wings**
- **Nintendo DS**
  - **Air Traffic Chaos / I Am An Air Traffic Controller!**
  - **Civilization Revolution**
- **iOS**
  - **Fleet Battle School**

Computer Wargames Played

- **Web**
  - **Flight Simulator (Google Earth)**
  - **Le Morte D'Arthur by Chris Crawford**
  - **Office of Naval Research Energy MMOWGLI (Massive Multiplayer Online Wargame Leveraging the Internet)**
- **Interactive Fiction (Twine)**
  - **Battle Drill 1944**
  - **Hill 70**
  - **On His Most Catholic Majesty's Service**
- **Other**
  - **LazerTag**

MOOCs Attended

- **Introduction Ancient Greek History from Donald Kagan via OpenYale**
- **Archeology of Portus from University of Southampton via FutureLearn**
- **Causes of War from Kings College London via FutureLearn**
- **Hadrian's Wall: Life on the Roman Frontier from Newcastle University via FutureLearn**
- **World War I Aviation Comes of Age from University of Birmingham via FutureLearn**
- **From World War to White Heat from Royal Holloway University of London via FutureLearn**
- **Railway Engineering: An Integral Approach via edX**
- **Rome: A Virtual Tour of the Ancient City from University of Reading via FutureLearn**

General Military Museums Visited

- **Alonzo Scaggs Field, site of the first self-sustaining nuclear chain reaction**
- **University of Chicago**
- **Bletchley Park**
- **Cabinet War Rooms / Churchill Museum**
- **Canadian War Museum**
- **Freedom Trail Boston**
- **Hiroshima Peace Museum**
- **Holocaust Memorial Center, Bloomfield Hills, Michigan**

General Military Museums Visited

- Imperial War Museum Duxford
- Imperial War Museum London
- Minidoka Internment National Historic Site
- Musee National d'Historie Militaire (Luxembourg)
- National Cryptologic Museum
- National Holocaust Museum, Washington DC
- National Museum of Computing, Bletchley
- National War Museum of Scotland
- Osaka Castle Museum, Osaka
- Pritzger Military Library
- Victoria and Albert Museum for Trajan's Column, London
- Yushukan War Museum, Tokyo

Aviation Museums Visited

- American Air Museum, Duxford
- Armstrong Air and Space Museum
- Brooklands Museum
- Crissy Field
- Deutsches Museum
- Dinner Key Pan Am seaplane terminal
- EAA Air Adventure Museum / EAA Airventure
- Henry Ford Museum and Greenfield Village - Heroes of the Sky
- Hill Air Force Base Museum
- Huffman Prairie Flying Field
- Imperial War Museum Duxford
- Miniatur Wonderland
- Moffett Field Hanger 1
- Moffett Field Historical Society Museum
- Museum of Flight, Seattle
- Museum of Naval Aviation
- National Air and Space Museum
- National Air and Space Museum Paul E. Garber Preservation, Restoration and Storage Facility

Aviation Museums Visited

- **National Air and Space Museum Steven F. Udvar-Hazy Center**
- **National Airline History Museum**
- **National Electronics Museum**
- **National Museum of the United States Air Force**
- **Pima Air and Space Museum**
- **Royal Air Force Museum Hendon**
- **Royal Air Force Museum Midlands / RAF Cosford**
- **RAF Westhampnett / Goodwood Aerodrome / Freddie March Spirit of Aviation Concours D'Elegance**
- **San Diego Aerospace Museum**
- **Science Museum London Flight Gallery**
- **Strategic Air and Space Museum**
- **Strategic Air Command Museum**
- **Treasure Island Pan Am seaplane terminal**
- **TWA Museum**
- **Welterkriegsbunker in der Fuggerei**
- **Wright Brothers National Memorial**
- **Yankee Air Force Museum**

Ground Museums Visited

- Ancient and Honorable Artillery Company of Massachusetts
- Airborne Assault Museum, Duxford
- Airborne at the Bridge at Arnhem
- Airborne Museum Hartenstein
- Armory of the First Corps of Cadets, Boston, MA
- Army Museum of the Pacific at Fort DeRussy
- British Army Regimental Museums
    - Guards Museum (London)
    - Museum of the Royal Regiment of Fusiliers' (Tower of London)
    - Prince of Wales Own Regiment of Yorkshire (York)
    - Queen's and Princess of Wales Royal Regiment [Buffs] (Dover Castle)
    - Royal Anglican Museum (Duxford)
    - Royal Dragoon Guards (York)
    - Royal Scots (Edinburgh Castle)
    - Royal Scots Dragoon Guards (Edinburgh Castle)
- Cantigny First Infantry Museum Tank Park

Ground Museums Visited

- **Forbes Magazine Galleries**
- **Frontier Army Museum, Fort Leavenworth**
- **John M. Browning Firearms Museum**
- **Military-Historical Museum of Artillery, Engineering and Communications Forces, Saint Petersburg**
- **Military Technology Vehicle Foundation, Portola Valley, California**
- **Musee de L'Armee**
- **Musee des Plans-Reliefs**

Ground Museums Visited

- **National Army Museum (London)**
- **National D-Day Museum**
- **National Museum of the Pacific War**
- **National World War I Museum**
- **Rainer Regiment Museum, Salzburg**
- **Rijksmuseum, Amsterdam**
- **Rock Island Arsenal Museum**
- **Royal Armouries / White Tower / Tower of London**
- **Royal Danish Arsenal Museum**
- **Royal Engineers Museum**
- **Swedish Arme Museum**
- **US Army Ordnance Museum Aberdeen Proving Ground**
- **Wallace Collection (London)**
- **Walter P. Chrysler Museum**
- **Waterloo Memorial**

Battlefields Visited

- **Alamo**
- **Antietam (mini staff ride)**
- **Balls Bluff**
- **Battle of Bulge - including Battle of Lanzerath, route of Kampfgruppe Peiper, Bastogne, Bois Jacques (mini staff ride)**
- **Battle of Nu'uanu / Ka-lele-a-ke-anae, Oahu - Kamehameha Unification of Hawaii in 1795 (mini staff ride)**
- **Bunker Hill, Charlestown, Massachusetts - American Revolution**
- **Constantinople, Siege of (mini staff ride)**
- **Flight 93 National Memorial**
- **Footprints Trail, Volcanoes National Park, Hawaii - Chief Keoua at Kilauea summit pyroclastic eruption in November 1790**
- **Fort Eban Emael (mini staff ride)**
- **Fox Indian Massacre, Grosse Pointe Park, Michigan - French + their Ottawa + Huron Indian allies vs. Fox Indians in Fox Wars in 1712**
- **Gallipoli (sailed by)**
- **Gettysburg National Military Park (mini staff ride)**

Battlefields Visited

- **Harper's Ferry**
- **Kall Trail / Hurtgen Forest (mini staff ride)**
- **Lepanto battlefield / Nakpaktos (drove by) (mini staff ride)**
- **Lexington Green - Concord Old North Bridge - Battle Road, Massachusetts - American Revolution (mini staff ride)**
- **Little Bighorn Battlefield National Monument (mini Staff Ride)**
- **London - During the Blitz and the V1/V2 attacks**
- **First Manassas (mini staff ride)**
- **Second Manassas (mini staff ride)**
- **Mahaulepu Beach on Kauai - battle in 1300's + 1790's (defeat of Kamehameha I)**
- **Marathon battlefield + route of ancient marathon from Marathon to Athens (mini staff ride)**
- **Normandy - including Pegasus Bridge, Sword / Juno / Gold Beaches, Arromanches, Batterie de Longues sur Mer, Port-en-Bessin, Tilly-sur-Seulles War Cemetery, Ste Mere Eglise, Brecourt Manor Assault, Utah Beach, Carentan, Pointe du Hoc, Omaha Beach, Normandy American Cemetery (mini Staff Ride)**

Battlefields Visited

- **Operation Market Garden (mini staff ride)**
- **Osaka Castle (mini staff Ride)**
- **Parent's Creek / Bloody Run, Detroit, Michigan - Seven Year's War (Ottawa Chief Pontiac vs. British 60th Foot)**
- **Pearl Harbor, Hawaii - World War II (mini staff ride)**
- **Rotterdam (mini staff ride)**
- **Salamis (sailed by) (mini staff ride)**
- **Thermopylae (mini staff ride)**
- **The Troubles, Belfast, Northern Ireland**
- **Troy? (sailed by)**
- **V-2 Launch Location Gouvy, Belgium**
- **Waterloo (mini staff ride)**
- **Yorktown National Battlefield (mini staff ride)**

Forts Visited

- **Athenian Long Walls in Kerameikos Cemetery (Greek)**
- **Augsburg City Walls (German)**
- **Aurelian Walls in Rome (Roman)**
- **Carrawburgh (Brocolitia) Fort on Hadrian's Wall (Roman)**
- **Castillo de San Marcos, St. Augustine, Florida (Spanish)**
- **Castle Clinton, Battery Park, New York City, New York**
- **Chain Home Radar Station (Swingate Transmitting Station) near Dover Castle**
- **Constantinople's Theodosian Walls (Byzantine)**
- **Corbridge Roman Town (Coria) near Hadrian's Wall (Roman)**
- **Detroit Defense Area Nike Ajax Site D-23 (Detroit City Airport)**

Forts Visited

- **Eboracum Fort in York (Roman)**
- **Fan Bay Sound Mirrors near Dover Castle**
- **Fort Amsterdam, St. Maarten (Dutch)**
- **Fort Balcarres, Falmouth, Jamaica (English)**
- **Fort Barrancas, Pensacola, Florida (Part Spanish)**
- **Fort Cronkhite - Nike Missile Site SF-88 and Battery Townsley, San Francisco, California**
- **Fort Custer SAGE Direction Center-6 (DC-6) of the Detroit Air Defense Sector, Battle Creek, Michigan**
- **Fort Dearborn, Chicago, Illinois**
- **Fort DeRussy - Battery Randolph, Oahu, Hawaii**

Forts Visited

- **Fort Eban Emael (Belgium)**
- **Fort Elizabeth, Waimea, Kauai, Hawaii (Russian)**
- **Fort Fredericksted, St. Croix (Danish)**
- **Fort George, Cayman Islands (British)**
- **Fort Grosse Pointe Farms / Brownell Middle School (US anti aircraft gun site)**
- **Fort Independence, Boston, Massachusetts**
- **Fort Mackinac, Mackinac Island, Michigan (British)**
- **Fort Mason - San Francisco Port of Embarkation, San Francisco, California**

Forts Visited

- **Fort McHenry**
- **Fort Point - Battery East, San Francisco, California**
- **Fort Raleigh National Historic Site (British)**
- **Fort Ruger - Fire Control Station Diamond Head, Oahu, Hawaii**
- **Fort San Sebastian, Cadiz, Spain (Spanish)**
- **Fort San Juan (Castillo San Felipe del Morro), San Juan (Spanish)**
- **Fort Warren, Boston Harbor Islands, Massachusetts**
- **Fort Wayne, Detroit, Michigan**
- **Fort Winfield Scott - Battery Chamberlin, San Francisco, California**
- **Fort Yellowstone**
- **Fort Zachary Taylor, Key West, Florida**
- **Forteleza San Felipe, Puerta Plata, Domincan Republic (Spanish)**
- **Galava Roman Fort in Waterhead / Ambleside (Roman)**

Forts Visited

- **Great Chesters (Aesica) Fort on Hadrian's Wall (Roman)**
- **Hadrian's Wall (Roman)**
- **Housesteads Roman Fort (Vercovicium) on Hadrian's Wall (Roman)**
- **Kastellet Fort in Copenhagen (Danish)**
- **Korcula, Croatia (Venetian walled city) (Venetian)**
- **Koules Venetian fort in Heraklion (Venetian)**
- **Londinium / Roman London including London Wall (Roman)**
- **Mycennae (Greek)**
- **Nothe Fort (British)**
- **Odaiba Battery of Tokyo Harbor defense of Tokagawa Shogunate**
- **Old Town Tallinn (walled city) (Estonian)**
- **Ouvrage Fermont / Maginot Line (France)**

Forts Visited

- **Peter and Paul Fortress**
- **Port-en-Bessin - Vauban Tower (French)**
- **Presidio, San Francisco, California**
- **Rhodes Old Town (walled city of Knights of St. John of Jerusalem) (Knights)**
- **Ringstrasse / Walls of Vienna - Vienna, Austria (Austrian)**
- **Saint-Malo Vauban fortifications (French)**
- **Sanibel Island Submarine Spotting Tower**
- **Solent Forts**
- **Switzerland - The entire country (Swiss)**
- **Thirwall Castle ruins (Gilsland, England)**
- **U Boat Pen Bruno (Bergen, Norway)**
- **Vindolanda Roman Fort + Museum (Roman)**
- **York medieval walls + York Castle / Clifford's Tower Fort (Roman + Norman)**

War Memorials

- **A Bomb Dome, Hiroshima**
- **Achilleion / Tumulus of Achilles**
- **Arc de Triomphe / Tomb of the Unknown Soldier**
- **Arlington National Cemetery**
- **Bronze Soldier Memorial, Tallinn, Estonia**
- **Buffalo Soldier Memorial**
- **Cenotaph**
- **Custer National Cemetery**
- **Desert Storm Welcome Home Celebration on the Mall, 1991**
- **Elmwood Cemetery**
- **Greek Tomb of the Unknown Soldier / Evizones Changing of the Guard**
- **Grosse Pointe War Memorial**
- **Hippodrome (including Egyptian Obelisk, Serpent's Column, Constantine's Obelisk)**
- **Hiroshima Peace Park**
- **Kerameikos Cemetery in Athens**
- **Korean War Veterans Memorial**

War Memorials

- **Mardasson Memorial Bastogne**
- **Monument to the Heroic Defenders of Leningrad**
- **National Memorial Cemetery of the Pacific (Punchbowl)**
- **Nelson's Column**
- **Scottish National War Memorial**
- **St. Clement Danes**
- **Trajan's Column**
- **US Marine Corps War Memorial / Iwo Jima Memorial**
- **USS Arizona Memorial**
- **Vietnam Veterans Memorial**
- **Yasukuni-Jinja War Shrine, Tokyo**

Naval Museums Visited

- Admiral Nimitz Museum
- Central Naval Museum of Russia
- Dossin Great Lakes Museum
- International Maritime Museum Hamburg
- Mariner's Museum
- MIT Museum Hart Nautical Gallery
- National Maritime Museum, Greenwich
- National Museum of the US Navy
- National PT Boat Museum

Naval Museums Visited

- Painted Hall, Royal Hospital Greenwich
- Pearl Harbor / USS Arizona Memorial
- Rijksmuseum, Amsterdam
- Royal Naval Museum, Portsmouth
- South Street Seaport Museum
- US Naval Academy Museum
- US Naval War College Museum
- Vasa Museum
- Wisconsin Maritime Museum

Naval Museum Ships Visited

- **B-39 Foxtrot-class submarine**
- **Cruiser Aurora**
- **Cutty Sark**
- **HMS Surprise (replica)**
- **HMS Victory**
- **Lightship Huron**
- **Lightship Nantucket**
- **Mary Rose**
- **Rudolph Eglehofer / Hiddensee Tarantul-class corvette**

Naval Museum Ships Visited

- **Sequoia Presidential Yacht**
- **SS John W. Brown**
- **U-505**
- **USCGC Mohawk (WPG-78)**
- **USS Alabama (BB-60) / USS Drum (SS-228)**
- **USS Albacore (AGSS-569)**
- **USS Cobia (SS-245)**
- **USS Constitution / USS Cassin Young (DD-793)**
- **USS Hornet (CV-12)**
- **USS Massachusetts / USS Joseph P. Kennedy Jr (DD-850) / USS Lionfish (SS-298)**
- **USS Midway (CV-41)**
- **USS North Carolina (BB-55)**

Naval Ships Visited

- **FS Jeanne d'Arc**
- **FS Tourville D610**
- **HMCS Annapolis - DDH 265**
- **HMCS Halifax - FFH 330**
- **HMS Chiddingfold - M37**
- **IJN Mikasa**
- **ITS San Giorgio**
- **US Army Corp of Engineers Lyman**
- **USCG Katmai Bay**
- **USCG Mackinaw**
- **USCG Northwind**
- **USS Fairfax County - LST 1193**
- **USS Groton - SSN 694**
- **USS Hawes - FFG 53**
- **USS Oliver Hazard Perry - FFG 7**
- **USS Robert A. Owens - DD 827**

Naval Ships Sailed On

- RMS Queen Elizabeth II
- SS United States

Bases Visited

- **Air Force**
  - **Airbus A320 / A330 / A350 factory in Hamburg**
  - **Bellows Field**
  - **Boeing 747 / 767 / 787 factory in Everett**
  - **Boeing Alteon Seattle Training Center - 737 NG flight simulator**
  - **Davis Monthan Air Force Base / Aerospace Maintenance and Regeneration Center**
  - **KI Sawyer Air Force Base**
  - **Lake District, England (Low level flying - F-111's + Tornadoes)**
  - **Offutt Air Force Base**
  - **Selfridge Air National Guard Base**
  - **Stanford Dish Radio Antenna Facility, Palo Alto (ELINT)**

Bases Visited

- **Army**
  - **Detroit Light Guard Armory**
  - **Green Park (Queen's Birthday Salute from Royal Horse Artillery)**
  - **Horse Guards Parade (Firepower + Music)**
  - **Horse Guards Parade (Trooping the Colour / The Queen's Birthday Parade, The Major General's Review)**
  - **Royal Arsenal Woolwich**
  - **Royal Artillery Barracks, Woolwich**
  - **US Army Tank and Automotive Command / Detroit Tank Arsenal**

Bases Visited

- **Navy**
  - **Bath Iron Works**
  - **Bureau of Medicine and Surgery**
  - **Charlestown Navy Yard**
  - **Kiel naval base and shipyards**
  - **Krondstadt naval base**
  - **National Naval Medical Center**
  - **Naval Base San Diego - Surface Warfare Institute of Medicine**
  - **Naval School of Health Sciences Portsmouth**
  - **Naval School of Health Sciences San Diego**
  - **Newport News Shipyard**
  - **Norfolk Naval Base**

Bases Visited

- Navy
  - **Royal Dockyard Chatham, England**
  - **Royal Dockyard Deptford, England**
  - **Royal Dockyard Portsmouth, England**
  - **Royal Dockyard Woolwich, England**
  - **Venetian Arsenale in Venice**
  - **Venetian Arsenale in Heraklion**
  - **Washington Navy Yard**

Ancient Cities Visited

- **England**
  - **Coria (Corbridge)**
  - **Durnovaria (Dorchester)**
    - **Mambury Rings amphitheater**
    - **Roman villa**
    - **Roman aqueduct at Poundbury hill fort**
  - **Londinium / Roman London**
    - **London Wall**
- **France**
  - **Lutetia / Roman Paris**
    - **Themes de Cluny**
    - **Arenes de Lutece (Roman)**

Ancient Cities Visited

- ## Greece
  - ### Athens
    - Panathenaic Way
    - Agora - Stoa of Attalos, Socrates' prison, Temple of Hesphaestus
    - Areopagus
    - Athenian Acropolis - Propylaea, Temple of Athena Nike, Erechthion, Parthenon, Odeon of Herodes Atticus
    - Panathenaic Stadium
    - Kerameikos Cemetery / Dipylon Gate
    - Long Walls of Athens
    - Pireaus

Ancient Cities Visited

- **Greece**
  - **Delphi**
    - **Roman Forum**
    - **Treasuries**
    - **Temple of Apollo**
    - **Theater + Stadium for Pythian Games**
    - **Gymnasium**
  - **Knossus**
    - **Minoan Palace**

Ancient Cities Visited

- **Greece**
  - **Mycennae**
  - **Rhodes**
    - **Colossus**
    - **Acropolis**
    - **Theater**
    - **Stadium**
    - **Temple of Apollo**
  - **Volos**

Ancient Cities Visited

- **Italy**
  - **Ostia Antica**
    - **Via Ostiensis**
  - **Rome**
    - **Aurelian Walls**
    - **Flavian Amphitheater / Colosseum**
    - **Aqueduct of Claudius**
    - **Circus Maximus**
    - **Forum - Temple of Vesta**
    - **Trajan's Column**
    - **Pantheon**
    - **Stadium of Domitian / Piazza Navona**
    - **Hadrian's Tomb / Castel Sant'Angelo**

Ancient Cities Visited

- **Mexico**
  - **Chacchoben**
- **Spain**
  - **Cadiz**
    - **Roman theater**
- **Turkey**
  - **Ephesus**
    - **Terrace Houses**
    - **Library of Celsus**
    - **Theater**
    - **Marble Road**

Ancient Cities Visited

- **Turkey**
  - **Constantinople**
    - **Aya Sophia**
    - **Blue Mosque**
    - **Basilica Cistern / Yerebatan Sarayi**
    - **Milion**
    - **Hippodrome (including Egyptian Obelisk, Serpent's Column, Constantine's Obelisk)**
    - **Cemberlitas / Constantine's Column**
    - **Aqueduct of Valens**
    - **Chora Church**
    - **Theodosian Walls**
    - **Topkapi Palace**

Castles / Palaces Visited

- **Austria**
  - **Festung HohenSalzburg, Salzburg**
  - **Schloss Belvedere, Vienna**
  - **Schloss Schonbrunn, Vienna**

Castles / Palaces Visited

- **England**
  - **Beaulieu**
  - **Blenheim Palace**
  - **Buckingham Palace**
  - **Buckingham Palace Royal Mews**
  - **Castle Howard**
  - **Clifford's Tower Fort in York (Norman Motte and Bailey)**
  - **Dover Castle (and Roman lighthouse)**
  - **Kensington Palace**
  - **Kew Palace**

Castles / Palaces Visited

- **England**
  - **Maiden Hill Castle**
  - **Oxford Castle (Norman Motte and Bailey)**
  - **Royal Palace of Westminster**
  - **Queen's House Greenwich**
  - **Sandsfoot Castle**
  - **Scarborough Castle**
  - **Tower of London**
  - **Windsor Castle**

Castles / Palaces Visited

- **France**
  - **Caen Castle**
  - **Mont Saint Michel**
  - **Versailles**
- **Germany**
  - **Herrenhausen, Hannover**
  - **Kaiserburg / Imperial Castle, Nuremberg**
  - **Residenz Wurzburg**
  - **Schloss Heidelberg**
  - **Schloss Linderhof, Bavaria**
  - **Schloss Neuschwanstein, Bavaria**
- **Greece**
  - **Knossos Minoan Palace**
  - **Mycennae**

Castles / Palaces Visited

- **Japan**
  - **Edo Castle, Tokyo**
  - **Home of William Adams, Tokyo**
  - **Imperial Palace, Kyoto**
  - **Imperial Palace, Tokyo**
  - **Nijo Castle, Kyoto**
  - **Osaka Castle, Osaka**

Castles / Palaces Visited

- **Mexico**
  - **Chacchoben Mayan City**
- **Russia**
  - **Catherine's Palace + Gardens**
  - **Hermitage / Winter Palace**
- **Scotland**
  - **Edinburgh Castle**
  - **Palace of Holyroodhouse**
  - **St. Andrews Castle**
- **Turkey**
  - **Topkapi Palace**
- **United States**
  - **Breakers, Newport**
  - **Iolani Palace**
  - **White House**

Religious Temples

- **Austria**
  - **St. Stephens, Vienna**
- **England**
  - **Canterbury Cathedral**
  - **Christ Church Cathedral, Oxford**
  - **Kings College Chapel, Cambridge**
  - **Salisbury Cathedral**
  - **Stonehenge**
  - **St. George's Chapel, Windsor**
  - **St. Paul's Cathedral**
  - **Westminster Abbey**
- **France**
  - **Notre Dame**
  - **Sainte Chapelle**
  - **Sainte Sulpice**

Religious Temples

- **Greece**
  - **Athenian Agora - Temple of Hesphaestus**
  - **Athenian Acropolis - Erechthion, Parthenon, Temple of Athena Nike**
  - **Delphi - Temple of Apollo**
  - **Meteora monasteries**
  - **Rhodes - Temple of Apollo**

Religious Temples

- **Italy**
  - **Florence**
    - **Baptistery**
    - **Duomo**
    - **Orsanmichele Church**
  - **Rome**
    - **Forum - Temple of Vesta**
    - **Pantheon**
    - **Sistine Chapel**
    - **St. Peter's Basilica**
  - **Venice**
    - **St. Marks Cathedral**

Religious Temples

- **Japan**
  - **Inari Shrine, Kyoto**
  - **Rokuon-ji Temple (Golden Pavilion), Kyoto**
  - **Ryoan-ji Temple, Kyoto**
  - **Sanjusangen-do Temple, Kyoto**
  - **Shunkoin Temple, Kyoto**
  - **Toshogu (Shrine of Tokugawa Ieyasu), Tokyo**
- **Russia**
  - **Church on the Spilled Blood**
  - **Peter and Paul Cathedral**

Religious Temples

- **Turkey**
  - **Aya Sophia**
  - **Blue Mosque**
  - **Chora Church**
- **US**
  - **Pu'ukohola Heiau National Historic Site**
  - **Pu'uhonua O Honaunau National Historic Park**

Civilization Museums Visited

- Abraham Lincoln Presidential Library and Museum
- Agora Museum
- Arthur M. Sackler Gallery
- Art Institute of Chicago Deering Family Galleries of Medieval and Renaissance Art, Arms and Armor
- Bayeux Tapestry
- Bradford Brinton Memorial
- British Library
- British Museum
- Buffalo Bill Historical Center (Cody Firearms Museum, Buffalo Bill Museum, Plains Indian Museum, Whitney Gallery of Western Art)
- Cahokia Mounds State Park
- Colonial Williamsburg
- Colter Bay Indian Arts Museum - David T. Vernon Collection
- Deutsches Museum
- Effigy Mounds National Monument
- Ellis Island

Civilization Museums Visited

- **FBI Headquarters, Washington DC**
- **Federal Reserve Bank of Chicago Money Museum**
- **Field Museum**
- **Franklin Delano Roosevelt Memorial**
- **Freer Gallery of Art**
- **Fugger and Welser Musuem**
- **Fuggerei**
- **Gerald R. Ford Presidential Library**
- **Gilcrease Museum**
- **Harry S. Truman Presidential Library**
- **Harry S. Truman Home**
- **Herbert Hoover Presidential Library**
- **Hermitage**
- **House of Heinreich Schliemann**

Civilization Museums Visited

- Jefferson National Expansion Memorial / Museum of Western Expansion
- John F. Kennedy Presidential Library
- Toys Wonderland Hakone / Kitahara Museum
- Kon Tiki Museum, Oslo
- Lahina Whaling Museum
- Lincoln Home National Historical Site, Springfield, IL
- Lincoln's Tomb, Springfield, IL
- Lyndon B. Johnson Ranch National Historical Park
- Martin Luther King Jr. Memorial
- Mesa Verde National Park

Civilization Museums Visited

- Metropolitan Museum of Art - Arms + Armor and Greek + Roman Galleries
- Mount Vernon
- Musee National du Moyen Age
- Museum of London
- Museum of the Imperial Collection, Tokyo
- National Archeological Museum of Greece
- National Archives
- National Gallery London
- National Portrait Gallery London
- National Gallery of Art
- National Geographic Society Museum
- National Museum of American History
- National Museum of the American Indian
- National Postal Museum
- Nelson Atkins Museum of Art

Civilization Museums Visited

- Parliament - House of Commons and House of Lords
- Pitt Rivers Museum of Anthropology and World Archeology
- Rathaus Augsburg Golden Room
- Rijksmuseum, Amsterdam
- Roman / Royal Baths, Bath
- Roman Museum, Augsburg
- Royal Coin Cabinet in Stockholm
- Thomas Jefferson Memorial
- Tokyo National Museum
- Topkapi Palace - Weapon and Armor section
- Uffizi Gallery
- Trubetsky Bastion Prison, Peter and Paul Fortress

Civilization Museums Visited

- US Bureau of Printing and Engraving
- US House of Representatives
- US Senate
- Van Gogh Museum, Amsterdam
- Vatican Museum
- Viking Ship Museum, Oslo
- Wellcome Museum of the History of Medicine
- Will Rodgers Memorial
- Wupatki National Monument

Museum Exhibitions

- **Faberge - The Forbes Magazine Collection, Detroit Institute of Arts - 1984**
- **Treasure Houses of Britain, National Gallery of Art - 1986**
- **Of Water and Ink: Muromachi Period Paintings From Japan 1392-1568, Detroit Institute of Arts - 1986**
- **Age of Sultan Suleyman the Magnificent, National Gallery of Art - 1987**
- **Japan The Shaping of Daimyo Culture, National Gallery of Art - 1988**
- **Japan The Art of the Tea Ceremony, National Gallery of Art - 1988**
- **Cleopatra's Egypt Age of Ptolemies, Detroit Institute of Art - 1989**
- **Leonardo Da Vinci - Artist, Scientist, Inventor, Hayward Gallery South Bank Center - 1989**
- **Chinese Scholar's Studio: A Literati's Paradise, Seattle Art Museum - 1994**
- **Wreck of the Titanic, National Maritime Museum Greenwich - 1995**
- **The First Emperor: Treasures From Ancient China, Birmingham Museum of Art - 1996**
- **Building for Air Travel, Art Institute of Chicago - 1996**
- **Paper Trails: Maps, Highways and American Journeys in the 20th Century, Newberry Library - 1996**

Museum Exhibitions

- Splendors of Ancient Egypt, Detroit Institute of Art - 1997
- Leonardo Da Vinci: Scientist, Inventor, Artist, Museum of Science Boston - 1997
- Titanic Fortune and Fate, Mariner's Museum - 1998
- The Medici, Michelangelo and The Art of Late Renaissance Florence, Art Institute of Chicago - 2002
- Modern Trains and Splendid Stations, Art Institute of Chicago - 2002
- Elizabeth I Ruler and Legend, Newberry Library - 2003
- Lewis and Clark and the Indian Country, Newberry Library - 2005
- Pompeii Stories From an Eruption, Field Museum - 2006
- Aztecs and the Making of Colonial Mexico, Newberry Library - 2006
- Tutankhamen and the Golden Age of the Pharaohs, Field Museum - 2006
- Beyond Lewis and Clark: The Army Explores the West, Frontier Army Museum - 2006
- Mapping Manifest Destiny: Chicago + the American West, Newberry Library - 2007
- Ptolemy's Geography and Renaissance Map Makers, Newberry Library - 2007

Museum Exhibitions

- **Maps: Finding Our Place in the World, Field Museum - 2007**
- **Itaro Yamaguchi Tale of the Genji Brocaded Picture Scrolls Exhibition, Jotenkaku Museum, Kyoto - 2008**
- **For Your Eyes Only: Ian Fleming and James Bond, Imperial War Museum - 2008**
- **Hadrian: Empire and Conflict, British Museum - 2008**
- **The Aztec World, Field Museum - 2008**
- **Buckminster Fuller: Starting With The Universe, Museum of Contemporary Art - 2009**
- **An Artist With the Corps of Discovery, Buffalo Bill Historical Center - 2009**
- **A Question of Command, Lecture by Mark Moyar at Pritzker Military Library - 2009**
- **The Nature of Diamonds, Field Museum - 2009**
- **Figge Museum of Art Behind the Scenes Tour with Andrew Wallace - 2010**
- **Gold, Field Museum - 2010**
- **Approaching the Mexican Revolution: Books, Maps, Documents, Newberry Library - 2010**

Museum Exhibitions

- Frank Lloyd Wright - Organic Architecture for the 21st Century, Milwaukee Art Museum - 2011
- The Road to Kabul: British Armies in Afghanistan 1839-1919, National Army Museum - 2011
- Afghanistan: Crossroads of the Ancient World, British Museum - 2011
- Emakimono & Bayeux Tapestry, Bayeux Tapestry Museum - 2011
- Memories of World War II Photographs From the Archives of the Associated Press, Pritzker Military Library - 2011
- Lecture by Stanley Weintraub on Pearl Harbor Christmas, Pritzker Military Library - 2011
- Indians of the Midwest: An Archive of Endurance, Newberry Library - 2011
- Man and Machine: The German Soldier in World War I, National World War I Museum - 2012
- Landscapes East / Landscapes West: Representing Nature From Mount Fuji to Canyon de Chelly, Nelson Atkins Museum of Art - 2012
- 1812: A Nation Emerges, National Portrait Gallery - 2012
- Fire & Ice: Hindenberg and Titanic, National Postal Museum - 2012

Museum Exhibitions

- State of Deception the Power of Nazi Propaganda, United States Holocaust Memorial Museum - 2012
- More Than Meets The Eye: Maps and Prints of Early America, Colonial Williamsburg DeWitt Wallace Decorative Arts Museum exhibit - 2012
- Maharaja: The Splendor of India's Royal Courts, Field Museum - 2012
- Realizing The Newberry Idea 1887-2012, Newberry Library - 2012
- The Newberry 125 Quasquicentennial Exhibition, Newberry Library - 2012
- Napoleon and the Art of Propaganda, University of Iowa Museum of Art - 2012
- Arctic Convoy, National War Museum of Scotland - 2012
- Leonardo da Vinci's Codex on the Flight of Birds, National Air and Space Museum - 2013
- Heaven and Earth: Art of Byzantium from Greek Collections, National Gallery of Art - 2013
- Home Front: Daily Life in the Civil War North, Newbery Library - 2013
- The Monuments Men and the National Gallery of Art, National Gallery of Art - 2014

Museum Exhibitions

- **Kiyochika Master of the Night, Arthur M. Sackler Gallery - 2014**
- **Mail Call: America's Military Mail, National Postal Museum - 2014**
- **Pacific Exchange: China and US Mail, National Postal Museum - 2014**
- **Crossing Borders, National Museum of Stockholm - 2014**
- **Chicago, Europe and the Great War + American Women Rebuilding France 1917-1924, Newberry Library - 2014**
- **A Tear in the Iron Curtain: 25 Years Since the Fall of the Wall, Old Capitol Museum University of Iowa - 2014**
- **Manga and War, International Manga Museum, Kyoto - 2015**
- **Birds Paradise A Colorful Variety of Art, Museum of the Imperial Collection, Tokyo - 2015**
- **The Greeks - Agamemnon to Alexander the Great, The Field Museum - 2015**
- **DaVinci The Exhibition, Science Center at Union Station - 2016**
- **Sand to Snow - Global War 1915, National World War I Museum - 2016**
- **A Distant War: A Danish Soldier in Afghanistan, Royal Danish Arsenal Museum - 2016**

Museum Exhibitions

- **First Folio The Book That Gave Us Shakespeare, University of Iowa Libraries - 2016**
- **Creating Shakespeare, Newberry Library - 2016**
- **Through Refugee Eyes, Rathaus Augsburg - 2017**
- **Religious Changes and Print 1450-1700, Newberry Library - 2017**
- **Revoliutsiia! Demonstratsiia! Soviet Art Put to the Test, Art Institute of Chicago - 2017**
- **City and Country: Views of Urban and Rural Japan, Art Institute of Chicago - 2017**
- **Bond at Bletchley Park: Illustrations and Inspirations, Bletchley Park - 2018**
- **From the Stacks, Newberry Library - 2018**
- **Pictures From an Exposition: Visualizing the 1893 World's Fair, Newberry Library - 2018**
- **Painting the Floating World: Ukiyo-e Masterpieces From the Weston Collection, Art Institute of Chicago - 2018**
- **Two Floating Worlds: Japanese Prints and Paintings, Art Institute of Chicago - 2018**

Museum Exhibitions

- **Stories Worth Telling: Marking 20 Years of "The Greatest Generation" - University of Iowa Libraries - 2018**
- **Everyone's Art Gallery: Posters of the London Underground, Art Institute of Chicago - 2019**
- **Connoisseurship of Japanese Prints, Art Institute of Chicago - 2019**
- **What is the Midwest? - Newberry Library - 2019**
- **D-Day +75 - Pritzker Military Museum and Library - 2019**
- **(COVID Pandemic)**
- **Hidden London - London Transport Museum - 2022**
- **Plym to Pamlico - Royal Engineers Museum - 2023**
- **Foe to Friend - National Army Museum - 2023**
- **Seeing Double Stereo Photography, Historical Cartography and the US Industrial Revolution 1840-1920 - Royal Geographic Society - 2023**
- **Wargames - Real Conflicts, Virtual Worlds, Extreme Entertainment - Imperial War Museum - 2023**
- **Shakespeare in War - National Army Museum - 2023**

Museum Exhibitions

- **Northern Ireland Living With the Troubles - Imperial War Museum - 2023**
- **Spies, Lies and Deception - Imperial War Museum - 2023**
- **Northern Ireland Living With the Troubles - Imperial War Museum - 2023**
- **Spies, Lies and Deception - Imperial War Museum – 2023**
- **Indigenous Portraits Unbound - Newberry Library - 2023**
- **Seeing Race Before Race - Newberry Library - 2023**

Railroad Museums Visited

- Baltimore and Ohio Railroad Museum
- Buchanan County Visitor's Center, Independence IA
- California State Railroad Museum
- Circus World Museum
- Deutsches Museum
- Durango and Silverton Railroad Museum
- Durham Museum
- Galloping Goose Historical Society Museum
- Henry Ford Museum and Greenfield Village
- Hub City Heritage Corporation Railway Museum (Chicago Great Western Railroad), Oelwein IA
- Illinois Railway Museum
- Laupahoehoe Train Museum
- Museum of Science and Industry
- Museum of Transportation, St. Louis
- National Railway Museum, York

Railroad Museums Visited

- **Nevada County Traction Company**
- **Old Shimbashi Station, Tokyo**
- **Old Thresher's Reunion**
- **Postal Museum, London**
- **Promontory Utah Golden Spike National Historical Site**
- **Ridgeway Railroad Museum**
- **Rochelle Railroad Park**
- **San Diego Model Railroad Museum**
- **San Francisco Cable Car Museum**
- **Science Museum London**
- **Sirkeci Gar Orient Express Train Station Istanbul**
- **Smithsonian National Museum of American History**
- **Union Pacific Railroad Museum**
- **Utah State Railroad Museum**
- **Virginia Museum of Transportation**

Railroads Ridden

- **Austria**
  - **Osterreichische Bundesbahnen (OBB)**
- **Canada**
  - **Algoma Central Railway**
  - **VIA Rail**
- **France**
  - **Eurostar**
  - **Ouvrage Fermont railway**
- **Germany**
  - **Deutsche Bahn (DB)**
- **Great Britain**
  - **British Rail**
  - **Mail Rail, Postal Museum**
  - **Southern Rail**
  - **Virgin Rail**
- **Holland**
  - **Dutch Railways (NS)**

Railroads Ridden

- **Italy**
  - **Trenitalia - Rome / Florence + Florence / Venice - TGV**
- **Japan**
  - **Hakone Tozan Train**
  - **Hakone Tozan Cable Car**
  - **Japan Railways - Tokyo / Kyoto / Osaka / Hiroshima - Shinkansen**
- **Norway**
  - **Bergen Light Rail**
- **Switzerland**
  - **Bergbahn Lauterbrunnen-Murren**
  - **Berner Oberland Bahn (BOB)**
  - **Jungfraubahn (JB)**
  - **Schilthornbahn**
  - **Schweizerische Bundesbahnen (SBB)**
  - **Schynige Platte Bahn**
  - **WengeneralpBahn (WAB)**

Railroads Ridden

- **US**
  - **Amtrak - California Zephyr, Chicago/Detroit, Empire Builder, Northeast Corridor Acela, Southwest Chief**
  - **CalTrain**
  - **Chicago Transit Authority**
  - **Durango and Silverton Narrow Gauge Railroad**
  - **Grand Canyon Railway**
  - **Lahina Kaanapali and Pacific Railroad**
  - **Massachusetts Bay Transportation Authority**
  - **Mount Washington Cog Railway**
  - **Manitou and Pikes Peak Railway**
  - **San Francisco Cable Cars**
  - **Seattle Center Monorail**
  - **Walt Disney World Monorail**

Railroads Biked

- **US**
  - **Prairie Farm Recreational Trail, Calmar IA (ex-Milwaukee Road)**

Highways Travelled

- **Ala Kahakai National Historic Trail / Kings Trail, Hawaii**
- **Appalachian Trail**
- **Autobahns in Germany**
- **California Trail**
- **Hadrian's Wall - Military Way next to it and Stanegate south of it**
- **Hakone Sekisho (Barrier) and Tokaido Road in Japan**
- **Lincoln Highway**
- **Oregon Trail**
- **Pananthenaic Way**
- **Roman road from Dover to Eastry**
- **Roman road from Tenterden to St. Michaels**
- **Romantikweg in Swiss Alps**
- **Route 66**
- **Santa Fe Trail**
- **US - 80**
- **Via Ostiensis in Italy**

Canals Traveled

- Chesapeake and Ohio Canal
- Hennepin Canal

Professional Memberships

- **Current**
  - **Experimental Aircraft Association**
  - **Society for the History of Navy Medicine**
- **Past**
  - **Air Force Museum Foundation**
  - **Twentieth Century Railroad Club**
  - **United States Naval Institute**

For Bibliographies Related to Astrobiology and Computer History See:

www.astrobiologysurvey.org

and

www.computerhistories.org