



# Emerging Trends in Cybersecurity

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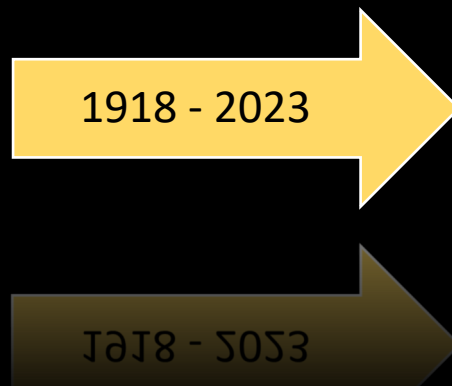
# Disclaimer

- The opinions expressed in this presentation do not represent official Department of Defense and U.S. Navy policy.
- This is an overview of emerging trends in cybersecurity with a focus on national defense and the Maritime Domain. The discussion will look at the next five years and over the horizon of the next decade.



# 3 Questions

1. Is Cyber a Warfighting Domain?
2. Is Cyber a Core Competency of the Military Service (e.g. Army, Navy, etc.)?
3. How do we (Cyber) contribute to the Joint Force?



# Joint Cyber Warfighting Architecture (JCWA)

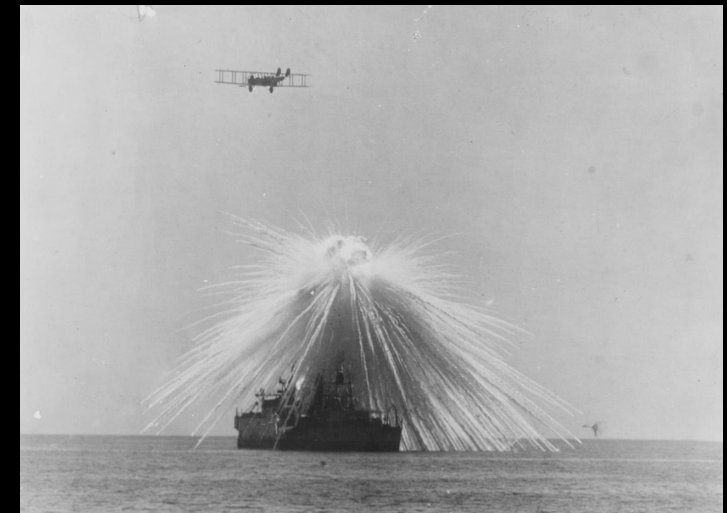
- JCWA is the military platform. How we fight.
- United States Cyber Command (USCYBERCOM) continues to define the JCWA
- JCWA is not a program of record itself but currently encompasses the following four acquisition programs:
  - **Unified Platform (UP)** will act as a data hub for JCWA, unifying disparate cyber capabilities in order to enable full-spectrum cyberspace operations.
  - **Joint Cyber Command and Control (JCC2)** will provide situational awareness, battle management, and cyber forces' management for full-spectrum cyber operations.
  - **Persistent Cyber Training Environment (PCTE)** will provide individual and collective training as well as mission rehearsal for cyber operations.
  - An access component will provide additional capability for cyber operations.

# COL William “Billy” Mitchell



## Cyber a warfare fight domain, a paradigm shift

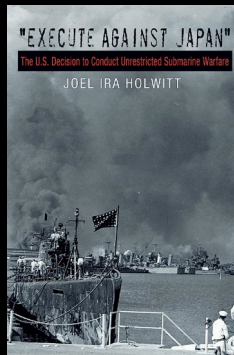
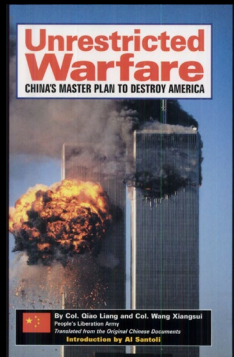
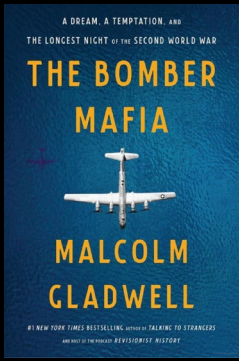
- Served in France during World War I, by the conflict's end, commanded all American air combat units in that country. WWI evolved from air reconnaissance to dog fighting and aerial bombing.
- Advocated for an independent Air Force. Regarded as the father of the United States Air Force.
- Argued the ability of bombers to sink battleships and organized a series of bombing runs against stationary ships designed to test the idea. The Anti-ship bombing demonstration was successful sinking ex-German World War I battleship, Ostfriesland.
- Court-martialed for criticizing both the War (Army) and Navy departments for being insufficiently farsighted regarding air power. He reverted from Brigadier General to his permanent rank of colonel, due to his insubordination. He resigned from the service shortly afterwards.
- The Japanese attack on Pearl Harbor demonstrated the effectiveness of air power.
- Operation Meetinghouse the 9-10 March 1945 U.S. bombing of Tokyo,
  - Single most destructive bombing raid in human history
  - 16 square miles of central Tokyo were destroyed
  - Estimated 100,000 civilians dead & over one million homeless
  - Deadlier than the atomic bombing of Hiroshima August 1945



We must resource (budget, personnel, train, equip) to win in the Cyber domain!

# Insights from the Past & Future

- **Bomber Mafia** - a close-knit group of American military men who believed that long-range heavy bomber aircraft in large numbers were able to win a war.
  - Succeeded in their goal to have extensive bomber fleets in the US military
  - Failed to achieve pinpoint targeting precision during World War II
- **Unrestricted Warfare** - Scenarios for War & the Operational Art in an Era of Globalization
  - Written in 1999 by two People's Liberation Army senior Colonels
  - Successfully attack a geopolitical super-power like the United States
  - Alternatives to direct military confrontation, including international policy, economic warfare, attacks on digital infrastructure and networks, and terrorism
- **"Execute against Japan"** The U.S. Decision to Conduct Unrestricted Submarine Warfare
  - Instantaneously move immediately after the attack on Pearl Harbor
  - From the overt legal restrictions of the naval arms treaties that bound submarines to the cruiser rules of the eighteenth century
  - To a declaration of unrestricted submarine warfare against Japan



# Navy Cyberspace Superiority Vision (CSV)

28 October 2022

- Three core principles:
  - Secure
  - Survive
  - Strike
- Modernize, innovate, and defend Department of the Navy (DON) cyber infrastructure
- Cyber security, resiliency, & warfighting efforts to enable & maintain maritime dominance
- ‘Baking In’ cybersecurity to new systems during the development & acquisition process
  - Enhancing cyber defenses for deployed platforms
  - Information technology, networks, data, critical infrastructure, platforms, & weapon systems
- ‘Fight Hurt’
  - Training our non-cyber Sailors, Marines, civilians, contractors on sustaining operations in denied or degraded environments
  - Improving their ability to rapidly respond and recover from attacks
- Cyberspace is a **warfighting domain** and critical maneuver environment
  - Not enough to statically defend our systems, installations, and networks

“The Department of the Navy will be expected to contribute our unique warfighting potential to compete in the gray zone, deter further aggression, and prepare to prevail in conflict as part of an integrated warfighting approach with our fellow Services.”

- Secretary of the Navy Carlos Del Toro

