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Application of Risk Management in Military Decision Making


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Value of Risk Management

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SVP, Military Affairs

13 Mar 2023



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35 Year Naval Career - There is no finer calling....



...than serving one's country.

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Outline of Remarks

➤

Risk Management Basics

➤

Risk Management Fundamentals

➤

Why I like Risk Management

➤

Risk in Military Operations

TIME TO RESTORE ACTUARIES TO THEIR RIGHTFUL PLACE IN THE WORLD

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### Ultimate Actuary

"Even if rogue AI does not take over, I calculate a 74% probability that mankind will collapse into barbarism. These weapons will be vital for my family's protection. **Also, when in Texas....**"

- The Terminator

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graph TD
    A[Mr. Universe] --> B[Evil Terminator]
    B --> C[Governor]
    C --> D[Good Terminator]
    D --> E[Ultimate Actuary!]
            
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### Ice Breaker Poll

- ☐ Military Service – Branch?
- ☐ Favorite Military Movie?
- ☐ Familiar with Battle of Midway?
- ☐ Favorite Academy Football Team?
- ☐ Been on a Submarine?
- ☐ Favorite Submarine Movie?
- ☐ Nuclear Power a good thing?

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### Risk Management Basics

- Why now more than ever
- History of risk
- Fundamentals
- Why it fails
  - Misunderstood
  - Misapplied
  - Biases / Emotion

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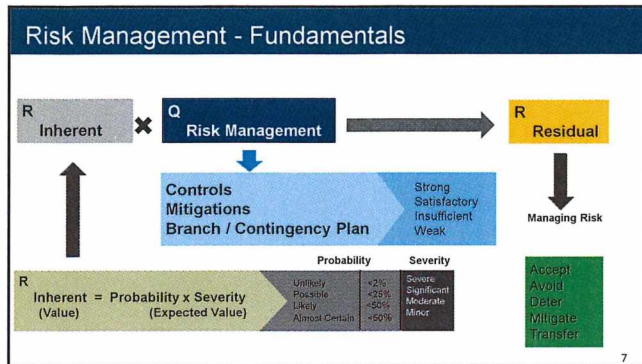
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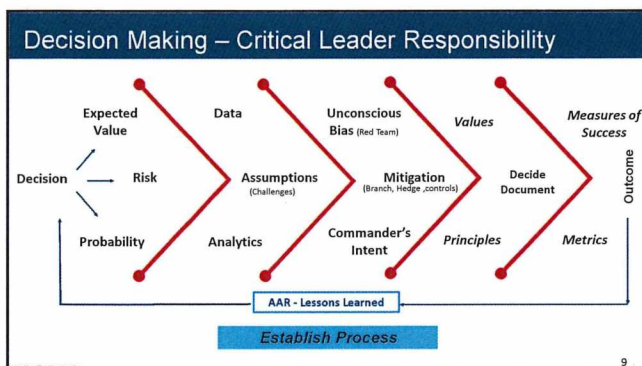
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Emotion / Biases Sabotage Good Decisions

<p><b>Traps</b></p>  <ul style="list-style-type: none"><li>• Confirmation</li><li>• Status Quo</li><li>• Sunk Cost</li><li>• Recallability</li><li>• Over Confidence</li><li>• Framing</li><li>• Anchoring</li><li>• Prudence</li></ul>	<p><b>Solution</b></p>  <ul style="list-style-type: none"><li>• Comprehensive / Accurate Data</li><li>• Diverse Perspectives</li><li>• Red Team</li></ul>
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Risk in Military Operations


➤ Risk is Everywhere

- Very Severe
- Very Likely

➤ Approach to Risk

➤ Examples:

- Race to South Pole
- Midway
- Thresher
- McCain/Fitzgerald
- Nuclear Deterrence



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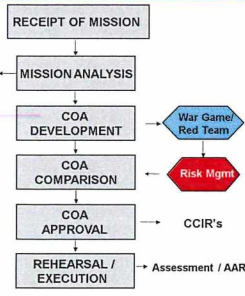
Risk Analysis in Military Planning

• Tasks

• Resources req

• Constraints

• Assumptions



RECEIPT OF MISSION

MISSION ANALYSIS

COA DEVELOPMENT

COA COMPARISON

COA APPROVAL

REHEARSAL / EXECUTION

War Game/ Red Team

Risk Mgmt

CCIR's

Assessment / AAR

Risk Management

Assess Hazards

Identify Hazards

Develop Controls & Make Risk Decision

Implement Controls

Supervise & Evaluate

"Assessment"

"Management"

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### Race to South Pole – Poor Mitigation Leads to Failure

Robert Scott, 1868 - 1912




Scott took this just before dying.






Map showing the routes of Robert Scott and Roald Amundsen to the South Pole. Scott's route is marked in red, and Amundsen's route is marked in green. Key locations include Victoria Land, Ross Island, Ross Sea Shelf, and the South Pole.

Roald Amundsen, 1872 - 1928



Emperor penguin captured to eat



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### Battle of Midway – Principle of Calculated Risk

ADM Yamamoto




**BATTLE OF MIDWAY** June 3-6, 1942



Map showing the location of the Battle of Midway in the Pacific Ocean, near the Midway Islands. The map includes labels for Japan, the Philippines, and the Midway Islands.

ADM Nimitz



Most Significant U.S. Naval Battle in History

WWII – U.S. vs Japan – 3-6 June 1942

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### Calculated Risk



United States Pacific Fleet  
USS Pennsylvania, flagship  
Flagship of the Commander-in-Chief

Serial 0114W May 28, 1942

From: Commander-in-Chief, United States Pacific Fleet  
To: Commander Striking Force (Operation Plan 29-42)

Subject: Letter of Instruction

1. In carrying out the task assigned in Operation Plan 29-42 you will be governed by the principle of **calculated risk**, which you shall interpret to mean the avoidance of exposure of your force to attack by superior enemy forces without good prospect of inflicting, as a result of such exposure, greater damage to the enemy. This applies to the landing phase as well as during preliminary air attacks.

- C. W. Nimitz

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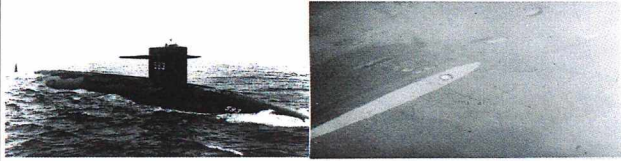
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### USS Thresher (SSN-593) – In depth Risk Analysis

- Sunk with loss of 129 individuals – 3 Aug 1961
- *Thresher's* remains - 8,400 feet deep on the sea floor
- Cause - Pipe failure, loss of power inability to blow ballast tanks



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### USS McCain & Fitzgerald (2017) – Ignoring Risk Mitigation

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| <ul style="list-style-type: none"> <li>• Collision took the lives of <u>10 Sailors</u></li> <li>• \$ 223M – In repair</li> <li>• Oct 2019 – Two years offline</li> <li>• Cause – Poor decisions, communication and watch standing</li> </ul> | <ul style="list-style-type: none"> <li>• Collision took the lives of <u>7 Sailors</u></li> <li>• \$ 368.7M – In repairs</li> <li>• Three years offline</li> <li>• Cause - multiple errors by Command / Crew</li> </ul> |
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USS John S. McCain



USS Fitzgerald

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### Nuclear Deterrence – Dramatic Increase in Risk

Moving from TWO to THREE Players (U.S., Russia, PRC)



Bomber aircraft



Land-based missiles



Ballistic missile submarines (SSBNs)

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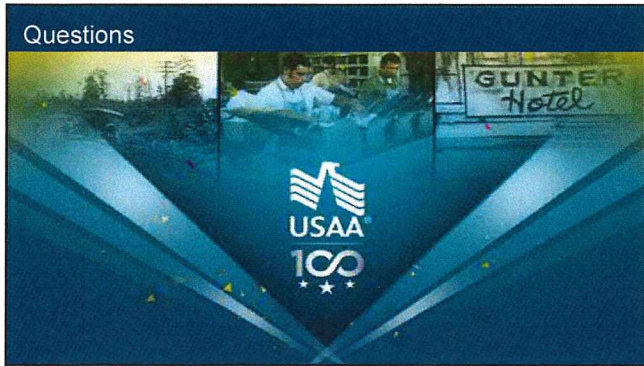
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