A Culture of Safety
Submarine Safety in the U. S. Navy

Safety Culture and High Reliability Organizations
Defense Nuclear Facilities Safety Board

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Fifty One Years Ago, on April 10, 1963...

USS THRESHER was lost at sea.
All 112 crew and 17 civilians perished.
The purpose of the SUBSAFE Program is to provide “maximum reasonable assurance” of:

- Hull integrity to **preclude** flooding
- Operability and integrity of critical systems and components to **control** and **recover** from a flooding casualty
Elements of a Culture of Safety

- **Responsibility**
  - A duty, obligation, or burden

- **Accountability**
  - The state of being answerable for one’s actions

- **Integrity**
  - Rigid adherence to a code of behavior
Elements of a Culture of Safety

- **Work Discipline**
  - Knowledge Of and Compliance With Requirements

- **Material Control**
  - Correct Material Installed Correctly

- **Documentation**
  - Design Products (Specs, Drawings, Maintenance Standards, etc.)
  - Objective Quality Evidence (OQE)

- **Compliance Verification**
  - Inspections, Surveillance, Technical Reviews, Audits

- **Balanced Separation of Authorities**

- **Continual Education and Training**
Compliance Verification

- **SUBSAFE Certification Audits:**
  - Ship specific
  - A critical element for certification for sea trials and unrestricted operations

- **SUBSAFE Functional Audits:**
  - Facility specific review
    - Policies
    - Procedures
    - Practices
  - Verifies organizational compliance with SUBSAFE Program requirements
Balanced Separation of Authorities

Platform Program Manager

Independent Safety & QA Authority

Independent Technical Authority

CERTIFICATION AUTHORITY
Challenges

- **Ignorance**
  - The state of not knowing

- **Arrogance**
  - The habit of behaving based on pride, self-importance, conceit, or the assumption of intellectual superiority and the presumption of knowledge that is not supported by facts

- **Complacency**
  - Satisfaction with one’s accomplishments, accompanied by a lack of awareness of actual dangers or deficiencies
"Good ideas are not adopted automatically. They must be driven into practice with courageous patience."

“Once implemented they can be easily overturned or subverted through apathy or lack of follow-up...a continuous effort is required.”

- Hyman G. Rickover
Constant Reminder: Never Forget

Vis Tacita: Silent Strength
The principles apply beyond submarines ...
United States Navy Submarine Sailors
Keepers of a Proud Legacy