

## Mr. Hartsough's Navy Career

### Senior Surface Ship Shock Delegate:

For over two decades, Mr. Hartsough was the U.S. Navy NSWCPD's senior delegated approval authority, entrusted with the highest level of delegated approval. His expertise spans non-standard tests, alternate vehicle tests, component & antenna tests, and all hull, mechanical, electrical, communications, and combat systems equipment on all surface ships.

**Educator :** As the lead Navy educator on shipboard equipment shock qualification, he has empowered the Navy community with invaluable knowledge for over 20 years. His expertise also extends to hosting tutorials at the Shock & Vibration Symposium, covering MIL-DTL-901E testing, shock qualification extensions, component testing and failure modes in shock testing.

**Past Experience:** Over his 34-year at NSWCPD, Mr. Hartsough played pivotal roles in Full Ship Shock Trials (FSSTs), Total Ship Survivability Trials (TSSTs), and ship class shock inspections. His contributions included being the survivability In Service Engineering Agent (ISEA) for transparent and small arms composite armor, and he also served as an action officer in the Live Fire office (LFT&E) of OSD/DOT&E.



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## 901Engineering & Training (856) 383-4402 ADDITIONAL SERVICES

### ❖ TRAINING

- *5-Day Comprehensive*  
MIL-DTL-901E Shock Qualification
  - Equipment Shock Qualification Training
- *1-Day Focused Training:*
  - Shock Extensions
  - Isolation Systems and Isolator Selection
  - Component Testing

### ❖ CONSULTING

- Shock Test Plans
- Equipment Design Reviews
- Shock Isolator Selection
- Test Witnessing
- Program Reviews

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AND TRAINING

UNLOCK THE  
SECRETS OF  
**MIL-DTL-901E**  
SHOCK  
QUALIFICATION  
**5-DAY CLASS**

Presented by:  
**KURT HARTSOUGH**

**UNLOCK THE SECRETS OF  
MIL-DTL-901E  
SHOCK QUALIFICATION**

**Duration: 5 days (40 hours)**

Delve deep into the comprehensive arena of shipboard equipment shock qualification. By the end of this intensive course, participants will be equipped with the knowledge and strategies to craft a streamlined, cost-effective shock qualification test schedule.

**Key Learning Areas:**

- The Navy's shock qualification process.
- Roles, responsibilities, and contractual stipulations.
- Choosing the test platforms and their constraints.
- Navigating shipboard integration, test fixture demands, and operational standards.
- Test failure redesigns and material selections.
- Insight into shock isolator selection, COTs requirements, and design recommendations for shock isolators.
- Addressing design modification retesting.

**Outcomes:**

- Proficient understanding of testing and documentation as per OPNAV and MIL-DTL-901E standards.
- Interpreting and simplifying test specifications, minimizing confusion and contradictions.

**Background:**

An evolved continuation of the training imparted at the S & V Symposium since 2002, this course centralizes on satisfying shock qualification requirements efficiently and cost-effectively.

**Next 5-DAY COURSE**

**DECEMBER 4-8**

**Where: Short Pump VA  
Courtyard NW**

**Price: \$2750\***

- \* **Cost of SAVE CENTER S&V Tutorials may be deducted for last two years.**
- \* **NOTE: Due to HiTest facility tour and test demonstrations, US Citizens Only. HiTest approval required for access to test facility.**

**WHO BENEFITS FROM  
SHOCK QUALIFICATION  
TRAINING**

- Shipboard Equipment Manufactures and Integrators
- Acquisition Officials, both Navy and contractor
- Shock Test Facilities
- Navy and Contractor personnel responsible for shock approval

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**5-DAY COURSE**

**AGENDA**

- Background and history of shock qualification
- USN Acquisition requirements and responsibilities
- Shock Qualification Documentation Process
- MIL-DTL-901E Standard Test Vehicles
  - Test Inputs
  - Test Setup
  - Test Fixtures
  - Test Series Requirements
  - Limitations of Test Vehicles
  - Test Procedures
  - Test Reports
  - Test Failure Resolution
- Shock Qualification by Extension
  - Minimum Requirements for Extensions
  - Cost Comparison to testing
  - Extension due to Equipment Modification
  - Manufacturing and Materials Changes
- HiTest Facility Tour and Test Demonstrations\*
- Component Testing to Support Shock Extensions
  - Simulation of Installed Environment
  - Component Failure Modes
  - Extension when using Component Testing
- Shock Test Failure Modes Demonstrations
- Review of shock isolation systems to ensure the design meets the test limitations of MIL-DTL-901E
- Calculation of equipment Shock Response Frequency
- Recommendation of isolation system design to meet equipment shock design acceleration limits
- Review of test setups and non-standard fixtures prior to submittal to the Navy for approval