Naval Safety Center Submarine Combat Systems Hazard review

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Introduction

It is the primary goal of the Naval Safety Center to provide a safe and healthful working environment for all personnel in the fleet. To accomplish these goals periodic safety surveys are conducted on board Navy ships. Information gathered from safety surveys continually identifies common discrepancies and safety violations that are common to all commands and include: incorrect stowage of flammable materials, improper respiratory protection and incomplete planned maintenance.

This handout is for forces afloat at the deck plate level. Its purpose is to give fleet personnel a ready reference to information or additional references, which will help, eliminate discrepancies. The information provided is not all-inclusive, nor is it intended to be. Many documents have been retyped for reproduction clarity.

General Overhaul Specifications for Deep Diving SSBN/SSN Submarines (DDGOS)
NAVSEA 0902-018-2010

The DDGOS provides top-level technical and administrative requirements for the modernization and repair of submarines built to Navy standards. The General Specifications for Ships (GENSPEC) no longer applies to the modernization and repair of operational submarines. The DDGOS will supersede any locally issued specifications that are not in compliance with it.

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CS-1: **688 CLASS WEAPONS HANDLING PADEYES**

Basic problem:

688 class submarines consistent trend of failing NDT inspections, in particular concern are log ID's 185 and 186.

Hazard:

These padeyes are single point suspension for the weapons shipping tray and have a 100% NDT failure rate on six submarines. A failure of these padeyes will result in an uncontrolled drop of the weapons shipping tray.

Remarks:

NUWCDIV NPT is in the process of performing system component stress analysis. These analyses along with past performance history of the parts in question, will provide a basis for a recommended plan of action (POA). COMSUBLANT anticipates the release of A & I N3377 following the receipt of the previously mentioned POA. In the interim weapons handling supervisors should be extra diligent regarding standing or walking under suspended loads. Additionally, prior to use inspections required by MRC 933WRW N R-1 and MIP 7000/K01-63 R-1, should be performed with the utmost scrutiny by experienced personnel prior to commencing any weapons on-load or off-load.

Reference(s):

SSN688 Test Loads Methods Drawing (TLMD) 709-5549373L
Conventional Weapons Manual, COMNAVSUBFORINST 8500.4
Maintenance of Weight Test OQE (MSG/COMSUBPAC/081644Z APR 03 and COMSUBPAC/021524Z MAR 04)
OD44979 VOL 1 Part 1 with CAN 2-1

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CS-2: **BI-METALLIC THERMOMETERS**

Basic problem:

Improper Bi-metallic thermometers are installed in Ammunition lockers and Pyrotechnic lockers. Unauthorized alteration to thermometer wells.

Hazards:

The Ammo and Pyro lockers are no longer self-contained. In the event of a fire in the Ammo locker or Pyro locker, an altered thermometer well prevents you from effectively containing / fighting the fire. Additionally, the thermometers become a potential missile hazard.

Remarks:

The requirements for the bi-metallic thermometers in Ammo lockers are as follows:

1. Direct reading, with maximum and minimum index pointers, and a reset knob.
2. They must meet the specifications of **MIL-I-17244**.
3. Must be a three inch, back connected dial with a four-inch stem.
4. Required temperature range is –40 to 180 degrees.

The requirements for the bi-metallic thermometers in Pyro lockers are as follows:

1. Direct reading, with maximum and minimum index pointers, and a reset knob.
2. They must meet the specifications of MIL-I-17244.
3. Must be a three inch, back connected dial with a two-inch stem.
4. Required temperature range is –40 to 180 degrees or 20 to 240 degrees.

The calibration periodicity for bi-metallic thermometers is 48 months IAW COMNAVSEASYSCOM R 261504Z MAR 02 (NOTAL).

No alterations to magazines shall be made without the approval of NAVSEASYSCOM. **Do not alter your thermometer well to house a thermometer with an improper stem length.**

Useful stock numbers:

Bi-metallic Thermometer 4” stem	6685-00-042-3218
Bi-metallic Thermometer 2” stem	6685-01-216-7147

Reference:

Ammunition and Explosives Safety Afloat, NAVSEA OP4
MSG NAVSEASYSCOM R 261504Z MAR 02

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CS-3: **COUNTERMEASURES**

Basic problems:

Lithium Hydride (LiH) found in NAE Beacons.

Hazards:

Class “D” fire.
Explosive hazard.

Remarks:

LiH reacts violently to and may produce significant amounts of toxic gases (hydrogen) to the following agents:

1. Water.
2. Carbon Dioxide.
3. PKP type dry chemical
4. AFFF.

Additionally, all submarine personnel shall be instructed in the following:

1. Stowage locations of NAE Beacons.
2. The appropriate guidance for fires involving lithium hydride.
3. Personnel shall further be instructed to remove NAEs, if possible, from a compartment where fire erupts.

Reference:

Conventional Weapons Manual, COMNAVSUBFORINST 8500.4
Submarine Firefighting, NSTM Chap 555V2

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CS-4: **DUMMY/DRILL AMMUNITION**

Basic problem:

Improper stowage of Dummy/Drill Ammunition.

Hazard:

Accidental discharge of small arms during training.
Personnel injury/death.

Remarks:

NAVSEA OP4. Inert Ordinance. Inert ordinance includes the following:

1. Inert ammunition or components
2. Drill ammunition and similar non-explosive items

This ammunition as well as its containers shall be carefully marked so that it cannot be confused with service ammunition.

NSTM Chap 700. Practice, Dummy/Drill Ammunition and Inert Components. Practice, dummy/drill ammunition and inert components may be stowed with the service ammunition it simulates or with which it is used. In such cases, the items shall be segregated to the maximum extent possible. Drill and practice ammunition stowage locations shall be tagged/labeled “FOR PRACTICE ONLY.”

NAVSEA SW010-AF-ORD-010. Ammunition Color Code. Bronze, Gold and Brass color is used to identify the following:

1. Dummy/drill/inert ammunition not for firing, but only used for handling, loading, assembly and testing, training, and display. Some dummy hand grenades may be painted black.

Reference:

Ammunition and Explosives Safety Afloat, NAVSEA OP4
Shipboard Ammunition Handling and Stowage, NSTM Chap 700
Identification of Ammunition, NAVSEA SW010-AF-ORD-010

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CS-5: **OTTO FUEL VAPOR DETECTOR, MK 15**

Basic problem:

TM division failing to ensure that both Otto Fuel Detectors are in calibration.
No electrical safety checks.

Hazard:

Can lead to improper operation and false readings during an actual casualty.
Shock hazard is possible to the end user.

Remarks:

Review the calibration recall schedule. The Otto Fuel vapor detector should be calibrated prior to the expiration date or when the expiration date will be exceeded before completion of deployment or operations.

Refer to the following as applicable:

1. MRC 7500/ADC Q-2**
2. MRC 7500/R48 Q-3**

Additionally, ensure that Fire Control division has your Otto Fuel Vapor detectors on an updated equipment guide list (EGL) for transportable electrical equipment. Thus ensuring that your detectors are electrically safe for use by your division.

Refer to the following:

1. MRC 3000/SUB A-7

Reference:

Navy PMS CD-ROM Submarines 1-04 SFR

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CS-6: **AMMUNITION FAR SIDE SIGNS**

Basic Problem:

Ammunition Far Side signs missing in the required areas/spaces.

Hazards:

Inadequate posting of required sign can cause personnel injury and explosive hazard.

Remarks:

Ammunition Far Side signs shall be posted on the external side of all boundaries of ammunition stowage spaces, except for those outside surfaces which are visible from the exterior of the ship. This sign does not have an NSN assigned to it.

Use the following information to have replacements made (figure 2-1):

1. It shall be paint-stenciled labels, painted signs, or permanently affixed adhesive reflective labels with a yellow rectangle.
2. A minimum of 5 inches high by 9 inches wide.
3. Black slanted lines are required along the top and bottom edges, not to obscure the letters.
4. Letters should be black, a minimum of 1/8-inch thick and ¾-inch high.

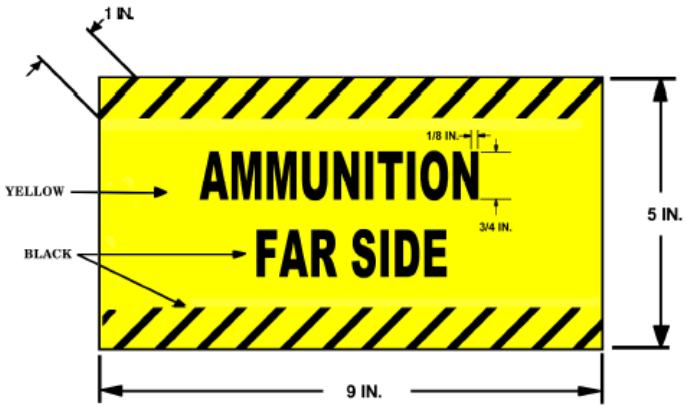

FIGURE 2-1. Sample "AMMUNITION FAR SIDE" Sign or Label

The markings on the bulkhead shall be placed 5 feet above the deck and spaced 12 feet apart horizontally, if possible. Markings on decks and overheads shall be spaced 12 feet apart, if possible. All measurements are approximate and may be adjusted slightly where required.

The aft small arms locker, when installed, must meet the same requirements for type of sign and placement.

Reference:

Ammunition and Explosives Safety Afloat, NAVSEA OP4
Shipboard Ammunition Handling and Stowage, NSTM Chap 700

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CS-7: **FORCE PROTECTION TRAINING**

Basic problems:

Force protection training status for SUBLANT/SUBPAC submarines.

Remarks:

Based on FFC's comprehensive review of anti-terrorism force protection training continuum, the following changes will be implemented in FY 05:

1. Shipboard Security Engagement Weapon (SSEW K-830-2223) will be eliminated.
2. Force Protection Fundamental Training (FPFT) will be renamed Security Reaction Force Team Member-Advanced (SRFA). This course will be modified to focus training on a reaction force vice a static guard post skill set.
3. The requirement for FPFT/SRFA for SSN/SSBN will increase from 20 to 24.
4. Existing graduates of FPFT will count towards the SRFA requirement.
5. Anti-terrorism Training Officer (ATTO J-830-0010) will be eliminated.
6. A new 4-week long course. ATFP Trainer Supervisor will be added. Each submarine squadron and naval submarine support center will be required to maintain one TRASUP graduate.
7. The Armed Sentry Course requirement will be raised to 15 for SSN/SSBN and 30 for AS.

These changes will be entered into NTMPS at its next update and take effect 01 Apr 05. The new courses should arrive at training centers early in FY05.

Course info:

A-830-0033	Armed Sentry Course
A-830-0034	ATFP Trainer Supervisor (ATFP TRASUP)
A-830-2214	Security Reaction Force Team Member-Advanced (SRFA)

References:

MSG COMSUBLANT 151959Z JUL 04 (NOTAL)

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CS-8: **FLOATATION TACTICAL VESTS (LBT 1620)**

Basic problem:

Use of the LBT 1620 tactical vest.

Hazard:

Possible death.

Remarks:

Via message coordinated between Commander Fleet Forces Command (CFFC) N7/N9 and Naval Sea Systems Command (NAVSEASYSCOM) N4 the LBT 1620 G/R floatation tactical vest IAW message COMFLTFORCOM 041506Z DEC 03 (NOTAL) requests NAVSEA direct Naval Sea Logistics Center (NAVSEALOGCEN) to change the tactical vest load (NICN 1HS 0000-11-CQA-6963 and NSNs 1HS 1005-01-474-5157 and 1HS 100501-474-5159) allowances to **zero** on the physical security AEL, column six (6) and seven (7) for **all submarines**. NAVSEA is to distribute the tactical vests returned to inventory by Commander Submarine Force (CSF), after appropriate conditional assessment, to other fleet end users. Based on the unique mission requirements for solo topside watchstanders on submarines this justifies the release from the use of LBT 1620 tactical vest. This is primarily due to the fact that this tactical vest is a non-self righting vest and is acceptable only for applications where it is likely that supervised watchstanders will be involved.
CSF is currently reviewing a replacement vest and will provide to CFFC the desired suitable replacement tactical vest. Upon receiving UL/USCG certification, CFFC will forward the requirement to NAVSEA via separate correspondence for inclusion in future updates/funding to the force protection AEL.
In plain English, if you have any LBT 1620 Floatation Tactical Vests get rid of them! Turn them in as previously required IAW messages COMSUBLANT 190905Z NOV 02 (NOTAL) and COMSUBPAC 112309Z DEC 02 (NOTAL).

Reference:

MSG COMFLTFORCOM 041506Z DEC 03 (NOTAL)
MSG COMSUBLANT 190905Z NOV 02 (NOTAL)
MSG COMSUBPAC 112309Z DEC 02 (NOTAL)
Force Protection AEL 2-320024503