

# The Submarine Division of the Naval Safety Center Presents:



# FLASH

## Factual Lines About Submarine Hazards

February 2001 – March 2001

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### WARNINGS, CAUTIONS AND NOTES

The FLASH is a newsletter that provides safety-related information to the fleet. This information is a summary of research from selected mishaps and surveys done throughout the force. This data is provided to assist you in YOUR mishap prevention program and gives advanced notice of other safety-related information.

**This newsletter is NOT authoritative but will cite references when available.**

## **Editor's Note**

This issue is dedicated to the most significant deficiencies found in each subject area during our surveys of the submarine force for calendar year 2000.

### **Damage Control**

- **Submarines surveyed have at least one OBA out of commission (unknown to the crew) due to bent guide rods, latches grossly out of adjustment, or canister baskets bent to the point that a canister cannot be inserted.**

**Solution:** Train the crew in the proper use and care of the OBA. Store the OBAs in their authorized locations. Periodically spot-check OBAs for proper latch adjustment.

*Which OBA do you grab during a casualty?*

- **The range guard system is not being maintained correctly. For example, the APC bottle is overdue for hydro, foil seals are missing from the appliance nozzles, and fusible links are overdue for replacement. This system is vital for fire protection in the galley and compliance with PMS is the only acceptable answer.**

**Solution:** Perform maintenance in strict accordance with MIP 5556/004 and the tech manual applicable the ship's class. We also recommend incorporating range guard PMS in the command monitoring and/or PMS spot check programs.

- **The portable oxygen/acetylene cutting and brazing kit is inoperable due to missing equipment. Also, the ship's welders are not familiar with the safety precautions associated with acetylene.**

**Solution:** Using AEL 2-880043004, inventory and replace the missing/damaged equipment. Also review NSTM 550-2.11.4

- **The safety screens on the red devil blowers are damaged due to storage locations. Due to space considerations, changing the storage locations is not practical.**

**Solution:** Manufacture and install protective covers as directed by NAVSEA letter Ser 03G1/30 dated 6 Jan 94. See our website for manufacturing instructions.

- **NFTI boxes do not contain all the required items. Specifically, the boxes do not contain the required six battery packs (one in the unit and five spares). Also, the boxes do not have the required five red chemical lights.**

**Reference:** AEL 2-930094090

- **Fire extinguisher brackets do not contain all the required rubber bumpers. This condition allows the extinguisher to sit loosely and vibrate in the bracket causing premature deterioration of the extinguisher shell.**

**Solution:** Obtain PKP extinguisher bumpers by calling ANSUL at (800) 862-6785 and AFFF extinguisher bumpers by calling AMEREX at (205) 655-3217.

## ***Electrical/Electronic***

- **Meat slicers did not have a safety guard installed over the on/off switch.**

**Hazard:** Personnel injury due to someone inadvertently turning the slicer on

**Solution:** Ensure the switch has a protective device over it to prevent accidental turning on of slicer by brushing up against it.

- **Submarines did not have chemical goggles staged for use by personnel entering the battery well.**

**Hazard:** Chemical exposure to eyes.

**Solution:** Provide chemical goggles for personnel working in the battery well.

- **Submarines did not have the procedures for preventing fire placard near the dryer.**

**Hazard:** Fire in ship's dryer or ventilation.

**Solution:** Post procedures for preventing fire placard (NSN 0177-LF-008-8200) near the dryer.

- **Navigation lighting panels (N-1) did not have associated shock hazards eliminated.**

**Hazard:** Electric shock and equipment damage.

**Solution:**

Implement COMSUBLANT/COMSUBPAC A&I N-3171.

*Why is this so hard to fix after over 4 years? Answer...It's Not!*

- **Periscope lifting gear (lifting eyes and support bars) was not weight tested.**

**Hazard:** Injury/equipment damage due to possible malfunction of lifting gear.

**Solution:** Ensure that lifting gear has been weight tested and within periodicity prior to use. That includes those of you who use an outside activity's lifting gear (e.g., Tridents).

## ***Mechanical***

- **Bench grinders show evidence that the wheel has been used to grind non-ferrous material.**

**Hazard:** The build up of this material on the wheel can cause wheel imbalance and disintegration while in use.

**Solution:** Don't use the ship's grinder to grind non-ferrous materials.

- **Bench grinder tool rests were installed and adjusted too far from the grinding or wire wheels.**

**Hazard:** Can lead to equipment and/or personnel injury due to material getting caught between the wheels and the tool rests.

**Solution:** Adjust tool rest to within 1/8 inch of the grinding or wire wheel.

*Does your bench grinder qualify as a piece of meat?*

- **Chlorate candle stowage areas were not conspicuously marked.**

**Hazard:** An oxidizer is a material that reacts violently enough to produce heat, or stimulates combustion by producing oxygen when in contact

with organic materials. These reactions occur at normal temperatures or under slight heating. An oxidizer fire can't be put out and requires special casualty control action.

**Solution:** Have your maintenance support facility manufacture a sign to post near your candle storage area. See NSTM 555-31.4.4.1 and 550.5.7.9 for special precautions and fire fighting actions.

- **Trash compactor areas did not have adequate face shields and eye protection available for personnel breaking glass bottles.**

**Hazard:** Eye injuries due to flying glass.

**Solution:** Provide face shields and goggles that meet the ANSI standard for shatterproof eye

protection (ANSI Z-87.1). By the way, feel free to clean them too!

- **Submarines did not have safety precaution signs posted for the lathe, bench grinder, and drill presses.**

**Hazard:** Injury/equipment damage due to unfamiliarity with safety precautions associated with equipment.

**Solution:** Post appropriate signs so personnel are aware of safety precautions associated with equipment. NSNs are: Lathe 0177-LF-224-3801; Bench Grinder 0177-LF-225-3601; Drill Press 0118-LF-114-3000

## Deck

- **Submarines surveyed were missing basic life-saving equipment on the inherently-buoyant kapok life preserver.**

**Solution:** Items missing included the attached whistle, lanyard, one cell flashlight or personnel marker light. The sea dye marker is no longer required and has been removed from the AEL.

**Reference:** AEL: 2-330014171 (for parts and NSNs), NSTM Chapter 077-2.2.2.1.2, MIP-H-401.

- **Submarines surveyed had AIULP MK-5 life preserver stabilization straps installed incorrectly or not at all. Batteries for the inflation assembly and distress marker light were out of date or had cracked/damaged cases requiring replacement.**

**Solution:** To determine if your batteries are out of date, add 3 years to the manufacture date. Supervisors paying more attention to PMS requirements will correct most of these problems. Remember if the light doesn't work and you fall overboard at night, your chances of being found are slim to none!

**Reference:** SS710-AB-MMO-010; MIP 5832; AEL 2-330014166

*How loud can you yell?*

- **Submarines surveyed did not have a properly maintained life ring/distress marker light at the access point of the ship.**

**Solution:** Life rings were missing reflective tape or the distress light was not attached properly or did not work at all. The marker

light should be attached to the life ring with a four foot piece of ¼" poly line.

**Reference:** AEL 2-120013002; NSTM Chapter 077-2.4.3.2.

- **Submarines surveyed did not have properly maintained mooring lines.**

**Solution:** Missing or broken tattletales are the most common deficiency followed by excessive chaffing. I realize that most, if not all, ships are not responsible for maintaining the mooring lines supplied when your ship moors. However a significant hazard is created when using improperly maintained mooring lines and if they are attached to your ship you now share some

responsibility. Regardless of the situation, contact the activity responsible and fix the problem.

**Reference:** NSTM Chapter 582.

**Extra Info (MK-1 Life preservers):** As most of you know, we in the submarine community are slowly but surely shifting over to the MK-1 life preserver. I have one important safety tip for you. When you begin to assemble the jacket, make sure you remove the lock wire installed in the inflation assembly and install copper shear wire. If this is not done, manual activation may be impossible. (NSN: 6145-00-838-9444)

## **Medical/NAVOSH**

- **Personnel assigned to perform wet bulb globe temperature (WBGT) surveys are not trained and qualified using the heat stress surveyor watchstation 303 of the safety programs afloat PQS, NAVEDTRA 43460-4B.**

**Solution:** OPNAVI NST 5100.19D states that the MDR is responsible for conducting WBGT surveys in engineering and non-engineering spaces on submarines when conditions warrant such surveys be conducted. Many units have alternate heat stress surveyors designated just in case there is a need for on-going heat stress monitoring at the same time the MDR is attending to a medical casualty or an actual casualty (such as a fire) where the MDR would not be sent to the scene. I applaud the initiative and forethought of the units that have taken that step. The only problem is that, in most cases, the alternate heat stress surveyors are locally trained. The above PQS is the official training and qualification system for heat stress surveyors and is the only system that should be in use.

- **Eye wash stations and personal eye wash bottle locations were not distinctly marked with a highly visible sign (white on green background, NSN 9905-01-345-4521).**

**Solution:** Many units have the primary eye wash station identified with the above listed sign. The problem is that the sign is posted on a locker below the eye wash station (at about waist level). The sign must be posted at eye level for it to be highly visible. Some units stow their personal eye wash bottles inside an existing locker, but have no sign posted that identifies that locker as an eye wash location. Ensure your eye wash and personal eye wash bottle locations are readily identifiable to anyone working nearby that may need to use them in an emergency.

*The sign is useless if you can't see it.*

- **The ends of potable water hoses, wrenches, water risers and caps were not painted dark blue.**

**Solution:** The majority of the units surveyed do not even bother to paint the hose ends. Most potable water fill connections and caps have been painted dark blue at some point in the past, but are in serious need of repainting. The dark blue color is meant to indicate that the item (hose, connection, wrench, fitting, etc.) is to be used only to load potable water.

- **Personal eye wash bottles were not readily available, in sufficient quantities near eye hazards that are greater than 10 seconds or 100 feet from an eye/face wash unit.**

**Solution:** Since there is no permanent eye/face wash unit in the engine room, there should be personal eye wash bottles (NSN 6640-01-065-9421) readily available near

nucleonics and the secondary sample sink (at a minimum).

- **Potable water temporary hose connections were not marked with signs that read - "CAUTION DISCONNECT HOSE WHEN NOT IN USE," in one inch high red letters.**

**Solution:** The potable water hose spigots in the CPO head, crew's head, wardroom head and CO/XO head are capable of having a temporary hose (garden hose) attached to them. If the hose is left attached to the spigot, there is a risk of contaminating the ship's potable water supply. The sign at each spigot location is meant to remind the operator to disconnect the hose as soon as he is finished with it to avoid contaminating the potable water supply.

## ***Safety/HazMat***

- **Commands surveyed do not have a copy of the Submarine Material Control log posted in each department/division that has items on the list.**

**Solution:** Provide a copy of the Submarine Material Control log to each department/division that has items on the list.

- **Safety officers have not attended Submarine Safety Officer Course (CIN: F-4J-0020).**

**Solution:** Command designated safety officer must attend Submarine Safety Officer Course. If formal training can not be accomplished within six months, order and complete the correspondence course as a temporary measure until the Safety Officer can attend the course.

- **NavOsh Programs have not been evaluated for effectiveness by the Safety Council.**

**Solution:** The Safety Council schedules and evaluates the NavOsh program for overall effectiveness.

- **Work center supervisors do not use the list of HM stowage locations for quarterly inspections of spaces containing HM.**

**Solution:** Work center supervisors use the list of HM stowage locations for quarterly inspections of spaces containing HM.

*Do your spaces contain hazmat?*

- Submarine Material Control Programs have not been audited annually by an officer other than the HM coordinator.

**Solution:** Audit the Submarine Material Control Program annually by an officer other than the HM coordinator. Use the Submarine Atmosphere Control Manual as the reference. You will be surprised at what you find!

- Commands surveyed have not used checklists to evaluate the NavOsh Program and specific hazard programs for compliance.

**Solution:** Use checklists to evaluate the NavOsh Program and specific hazard programs for compliance.

## **General Departmental**

- Flood control doors did not lock when their latches were tripped.

**Solution:** Adjust latches and springs to ensure the latching mechanisms work as designed. Several doors did not move when tripped. Two doors had latch mechanisms that hit an EAB locker and prevented the door from shutting.

- Flood control door gaskets need cleaned and reattached to the flood control door.

**Solution:** Inspect the gaskets and perform any maintenance that is required to ensure the gasket is connected tightly to the door. Several aft doors have been found to have gasket separating from the bottom of the door

and rolling under the door when tripped (This prevents the door from shutting).

- Gear adrift that could damage equipment and/or injure personnel.

**Solution:** Stow the ship for sea as soon as possible.

- Bilges had large quantities of oil and debris.

**Solution:** Clean the bilges and identify any oil leaks for immediate repair. This is a household cleaning task.

*Clean the house and repair the leaks!*

## **Combat Systems**

- Dummy-drill ammunition is not stowed and segregated properly.

**Solution:** Dummy-drill ammunition must be segregated and properly labeled. It may be stored in the ammo locker, if it's segregated and properly labeled. The normal storage for dummy-drill ammunition is an ammo can, painted gold (for inert ordnance), and labeled "For practice only." With the dummy-drill ammo segregated and properly labeled in the ammo

can, it can be safely and correctly stored in the ammo locker.

- Otto Fuel spill kits were missing parts.

**Solution:** Some of the otto fuel spill kits were missing items. In some cases, the second otto fuel spill kit was completely missing. The otto fuel gag assemblies on some units were missing the correct O-ring, securing nut, or torque wrench. Just a reminder here, the securing nut cannot be a wing nut or nylock.

# ***Effective COMNAVSAFECEN Afloat Safety Advisories***

## **Year 2001**

11-00	251220Z AUG 00	Inoperative OBA Canisters
13-00	201909Z OCT 00	GPS and Charts
17-00	201959Z DEC 00	Contract Liberty Boat (Water Taxi) Safety
1-01	041730Z JAN 01	Effective Afloat Safety Advisories
2-01	121615Z JAN 01	COMNAVSAFECEN Security Clearance Information
3-01	191215Z JAN 01	Follow-up on NAVSAFECEN Afloat Advisory 8-00
4-01	241845Z JAN 01	Summary of Changes and Implementation of OPNAVINST 5100.19
5-01	071640Z MAR 01	Smoke Generator Electrical Shock Hazard