

The Submarine Division of the Naval Safety Center Presents:

FLASH

Factual Lines About Submarine Hazards

October 2001 - November 2001

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Editor's Thought

During our travels we have noticed a few disturbing items. The first is that approximately half of the deck-plate personnel questioned either don't read Flash, or even know what Flash is. Just some food for thought.

The next item is the apparent unwillingness of some submarines to have us do safety surveys for them. We've heard every excuse in the book including "It's not a good time, we're in an upkeep; or SRA; or in drydock." (Other than being at sea, when is a submarine not in that type of environment?) Ask yourself this question: If I were offered a FREE car or home inspection that would list any deficiencies, provide references and part numbers needed for corrective actions, and not have a report sent to the city, state or federal government, would I take advantage of it? That's exactly what we do...that's why we call it a "**safety survey.**" You can either ask us now or pay someone else later! It's your choice!

The most disturbing trend we have noticed is that more often than not, the Planned Maintenance System (PMS) appears to be like the exiled member of a family (everyone knows they're part of the family but few people acknowledge their existence). I'm not sure how long it's going to be before this trend changes for the better; but, I'm hopeful that we can pull our heads out of that real dark place before we cause significant damage or seriously hurt someone because of PMS!



In The World of Firefighting

MMC(SS) Downham

The following paragraphs are paraphrased from COMSUBLANT 131044Z JUN 01 (NOTAL)(Submarine Fire Fighting Update) and NAVSURFWARCEN SHIPSYSENGSTA PHILADELPHIA 271600Z JUN 01 (NOTAL)(In-Service Engineering Advisory NR. 017-01; 1-1/2 Inch Fire Hose Replacement). Since these are only bits and pieces from the messages, auxiliary division LCPOs/LPOs, damage control assistants (DCAs), and engineers are advised to obtain and review the reference messages and take action accordingly.

Technique (or Attack): (COMSUBLANT 131044Z JUN 01 (NOTAL), Submarine Fire Fighting Update)

- It is recommended that when fighting a submarine fire that the back-up hose should be deployed to the space above or below the fire depending on where the fire is to combat the possible spreading. (Many commands are already doing business (training) this way and are being very successful. BZ!)
- Most submarine fires are electrical in origin and are caused by hotwork or over heating of conductors from faulty electrical components. Less than two percent of all fires are caused by fuel oil, lube oil, or hydraulic oil systems.
- The type of extinguishing agent to be used by a re-flash watch should be the same agent used to initially extinguish the fire.

1 ½" vs. 1 ¾" Fire Hoses: (NAVSURFWARCEN SHIPSYSENGSTA PHILADELPHIA 271600Z JUN 01 (NOTAL), In-Service Engineering

Advisory NR. 017-01; 1-1/2 Inch Fire Hose Replacement)

- The 1-3/4 inch fire hose, 50-ft. length, is available through the supply system under NSN 4210-01-143-1404. The 1-3/4 inch hose utilizes a 1-1/2 inch NPSH brass coupling so it will connect with existing 1-1/2 inch hoses, vari-nozzles, fireplugs, wye-gate valves, and reducer couplings.
- Replacement of fire hoses may be accomplished by attrition. Replacement should be based on hose PMS inspection criteria or hydrostatic testing.

New Damage Control Equipment: (COMSUBLANT 131044Z JUN 01 (NOTAL), Submarine Fire Fighting Update)

- The self-contained breathing apparatus (SCBA) is the approved replacement for the OBA. NAVSEA is currently developing the ShipAlts necessary to backfit 688/726/21 class submarines.
- A more durable thermal imager should hit the fleet in about two years.
- 4-gas analyzer. A hand held portable analyzer is currently in the fleet testing and evaluation phase. The device is used to quickly assess the compartments atmosphere, display the concentration of 4 gasses and provide real time results. This device can be programmed with the gas limits and alarm setpoints and will supplement the Draeger tube system.

For further information or questions contact MMC(SS) Ron Downham at the Naval Safety Center (Code 382C) at (757) 444-3520 Ext. 7073 (DSN 564) or e-mail rdownham@safetycenter.navy.mil

Bilge Lighting

EMC(SS/SW) Seplak

There has been an alarming percentage of submarines that have installed **unauthorized** fixed 'temporary' lighting into various areas in their engine room bilges. If you review Flash (March - June 2000) you will see that this issue was addressed. Since we have seen an increasing fleet-wide trend, I discussed this situation with representatives from the submarine electrical engineering section of the submarine planning yard. They have received several liaison action requests (LARs) asking for additional lighting to be installed into bilge areas. None of these requests have been endorsed due to technical and engineering concerns. They pretty much summed it up by saying it's an accident waiting to happen. Some of the concerns about these types of installations are:

1. Fixtures being utilized that are not designed or constructed for the bilge environment
2. Electrical shock hazards (an example of this is some lights were being powered with **NON-MARINE** UL type surge suppressors mounted below the deck plate levels - *it never gets damp down there...right?*)
3. Sound silencing issues (electrical noise/sound shorts transmitted to the hull)
4. Shock mounting considerations (will tie wraps withstand a depth charge?)

5. Placement of lighting fixtures and wire runs (ship's plans design authorized wire runs and fixtures so they do not interfere with machinery and maintenance)

NAVSEA 92T, the people that deal with the engineering and design of our submarines, state that installed lighting should only be per ship's plans. There is only one situation that they will authorize additional lighting. If the submarine is in a DMP or shipyard period, the cognizant yard can submit a letter requesting temporary lighting to be installed in bilge areas **ONLY DURING THE YARD PERIOD.** After receiving this request, NAVSEA 05L, the material control people, will issue an approval letter on a case-by-case basis. Only then is the shipyard allowed to install their fixed temporary lighting.

Commander, Submarine Force Pacific SUBPAC 151514Z NOV 01 (NOTAL) refers to the bilge lighting problem and states there is no approved ShipAlt for such lighting. You should expect to see a similar SUBLANT message in the near future. If you have any questions about bilge lighting, contact EMCS(SS) Page (SUBLANT electrician) at (757) 836-1260 (DSN 564); or EMCM(SS) Frampus (SUBPAC electrician) at (808) 473-5577 Ext. 103 (DSN 315).

Unauthorized Bedding Products

ETC(SS) Houck

Commander, Naval Sea Systems Command 171551Z OCT 01 (NOTAL) advises about potential fire and atmosphere control hazards associated with commercial bedding products procured and used in berthing. The only blankets "**authorized**" for shipboard use are the Navy flame resistant wool blankets (NSN 7210-00-082-5668 for crew and NSN 7210-00-282-

7950 for officers). Submarines are advised to obtain and review the message, then check all berthing areas on board as soon as possible. Forward any questions to Robert Blakemore (NAVSEA 03W22) at (202) 781-3616 or e-mail blakemoreref@navsea.navy.mil. (By the way, see the "Chickenhead Award" on page 6 for a picture of an unapproved bedding product.)

EAB Audio Projection Units

MMC(SS) Downham

During recent safety surveys we've noticed commands are using audio projection units for EABs (NSN 5830-01-453-1940) at their own discretion. Many boats are unaware of the specific locations where EAB audio projection units are required. But of course where there is a requirement there usually is a technical document governing it. NSTM 077.3.5.7.4 says: "On board submarines, the officer in charge of the control room (officer of the deck) and the officer in charge of the

maneuvering station (engineering officer of the watch), diving officer of the watch, and chief of the watch shall have air-line masks with annunciators available for use. The annunciator on the air-line mask amplifies the wearer's voice and allows all orders to be heard clearly. This type of air-line mask is donned in the same fashion as the standard air-line mask." The locations listed are the minimum requirements. Commands may add other watchstations as they deem necessary (e.g., helmsman, throttleman).

688 Class AN/WIC Batteries Update

ETC(SS) Houck

It's only taken several years, but all 688 class submarines should be able to obtain the new maintenance-free AN/WIC battery. (That is the good news.) The bad news is that the new batteries initially will be sent only to deploying submarines whose old batteries don't work anymore. (The old style batteries are no longer in the Navy supply system.)

When you do get the new maintenance-free battery for your system, there are a few things you need to do. Prior to installation of the new battery, you must groom your AN/WIC system and verify there are no system grounds. You must install a new connection cable (part of

the field change kit you will receive when you get the new battery) to a terminal board inside the AN/WIC stack.

After installation, ensure you follow the PMS and set the correct battery voltage or it may significantly reduce life of the battery (nominal life 5 years).

If you have any questions regarding the new AN/WIC battery, system grooming, or ground checks contact John Atwood (SPAWAR) at (757) 558-6606. Other points of contact: Andy Book (NAVICP program manager) at (717) 605-4683 (DSN 430); Daniel Bahta (NAVSEA PMS 392T) at (202) 781-1127.

The Original Hot Rack

ETC(SS) Houck

Most submariners have had to "hot rack" at one time or another during their time at sea. Now you may be in a "hot rack" without even having to share it with someone else.

Commander, Naval Sea Systems Command 090559Z OCT 01 (NOTAL) and COMNAVSAFECEN Norfolk Va 101410Z OCT 01 (PASEP) identifies a potential fire hazard associated with innerspring mattresses. The

mattresses in question failed pre-production first article tests and in some cases fire testing. The message lists the stock numbers associated with the discrepant mattresses as well as further guidance and points of contact. Submarines should obtain and review the message, then check all mattresses on board. (By the way, see the "Chickenhead Award" on page 6 for a picture of the mattress.)

Submarine Quarterly Mishap Summary For 4th Qtr FY01

LCDR Swan

The following are reported mishap statistics involving submarine commands for the fourth quarter FY01:

Submarine (On Duty)	# Mishaps				Lost Workdays	
	(Class)				(Class)	
	A	B	C	Special	B	C
	0	1	3	13	1	9

Off-Duty and Motor Vehicle	# Mishaps			Lost Workdays	
	(Class)			(Class)	
	A	B	C	B	C
	1	1	7	61	102

Examples include:

Class A Mishaps (Afloat): No deaths or permanent total disabilities were reported this quarter.

Class B Mishaps (Afloat): One mishap (a grounding with costs in excess of \$200K) was reported.

Class C Mishaps (Afloat):

1. Hydraulic hoses for a towed array were reinstalled incorrectly, with the supply and return hoses reversed. During the tow cable retrieval in preparation for array load, the drum rotated rapidly in the deploy direction. The cable had to be cut into several pieces to be removed.
2. A boat attempted to deploy a towed array during which the capstan stopped. Divers entered the ballast tank and found the drogue stuck. After cutting to free the system, six feet of drogue was lost.
3. Temporary ducting installed on a boat during shipyard period caught fire. Damage was limited to the torpedo room.

Class A Mishaps (Off Duty): Mishap victim drowned while attending a wedding reception.

Class B Mishaps (Off Duty): Mishap victim had a motorcycle accident that amputated his right arm.

Class C Mishaps (Off Duty): Three occurred during recreational activities (jogging, running, tackle football). Four motor vehicle mishaps were reported (all motorcycles).

Special Case Mishaps:

There were nine electrical shocks, one chemical exposure (chemical burns), one back injury and two fires.

Writer's note:

It is our observation that the number of electrical shocks are on the rise (nine this quarter versus five in each of the previous two quarters. This could be due to several factors (e.g. more maintenance, boats are reporting more mishaps IAW OPNAVINST 5100.19D, less supervision).

Remember, 90% of all mishaps that occur are due to a human cause factor (e.g. not following PMS cards, CO and /or engineer's standing orders, NORM, RPM, SOP). One should only expect what one inspects. In other words, if the deck-plate sailors work isn't checked to ensure it's correct accomplishment, it may not be accomplished correctly.

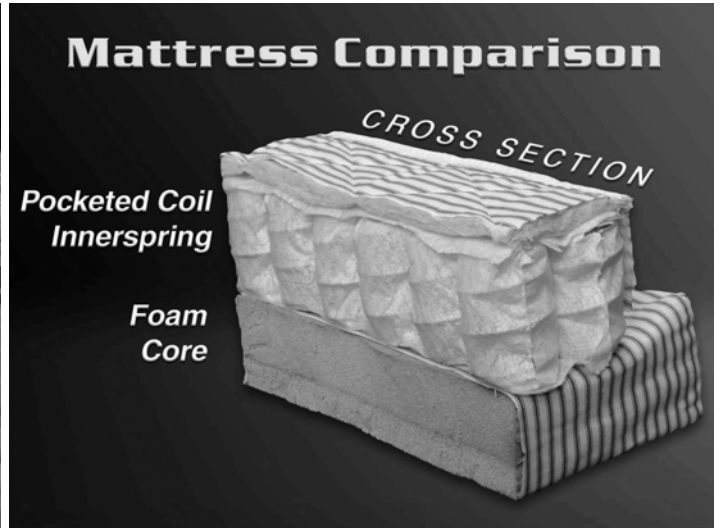
The Chickenhead Award

ETC(SS) Houck

This issue's Chickenhead Award is presented to several items (tactical vest, wet weather poncho liner, innerspring mattress). These items reached the fleet prior to receiving all necessary testing. There are several lessons to be learned from these examples: 1. Stop buying whatever items you want and installing them on the boats just because you think it's a good idea. 2. Feel free to follow all the written standards and procedures that are already in place (Not just the ones you select to follow due to convenience or the lesser of two evils!).



Tactical Vest and Wet Weather Poncho Liner



Innerspring Mattress

New Battery Hydrometers for the Fleet

EMC(SS/SW) Seplak

There is a new digital hydrometer on the way to the fleet that NAVSEA and GNB have tested and approved for taking specific gravity's on the submarine main storage battery. It is a computerized handheld unit that is manufactured by Anton Paar. To use this unit the plastic tube is inserted into the battery and a small amount of electrolyte is drawn up for testing. The reading is automatically temperature corrected and then can be stored in the memory. After the entire battery is done the readings can be download to a computer for use in a spreadsheet for the battery records. According to the authorization message from NAVSURFWARCENDIV Crane 241214Z MAY 01 (NOTAL) these units require calibration

annually. The model DMA35N (temporary NSN 1H 0099-LL-H55-6510) is listed the AEL (1-911393001), and NAVSEA will incorporate this in



the next revision of NSTM 223.

The Trident community has been issued the new meters, and the fast attacks will be issued theirs sometime in the first quarter of CY02. The submarine squadrons and PMTs are currently being trained on the proper use and maintenance of this equipment. After the initial

issuance of these new meters by the type commanders, each submarine will be required to have two of the new DMA35N's onboard as well as two old style hydrometers of each range for back-up purposes (one of these being a reference). NAVSEA is currently working on a procedure to use this equipment on testing EOG electrolyte, but currently the DMA35N can only

be used on the submarine main storage batteries.

If you have any question about these new hydrometers contact EMCS(SS) Page (SUBLANT electrician) at (757) 836-1260 (DSN 564); or EMCM(SS) Frampus (SUBPAC electrician) at (808) 473-5577 Ext. 103 (DSN 315).

Now That's A Nice Draeger Tube Locker

HMCS(SS) Darnell

The photos below show a Draeger-tube locker on a 726-class submarine. We know that not everyone has the luxury of this kind of locker space; but, it is an example of a well-organized Draeger tube inventory system. The AEL is posted on the inside of the locker door, and the tubes are arranged in AEL order. For further user friendliness, each box is labeled with the type of tube (e.g., CO, CO₂, Benzene) and the expiration date.



Hasta La Vista

We bid a fond hasta la vista to MMCM(SS) John Mosholder after a little more than three years serving as a submarine safety analyst. He reports to the civilian community,

his sailboat, and his wife (not necessarily in that order) after 25 years of naval service. We extend our best wishes to *Captain* Mosholder and his family.

***Have A Safe and Joyous Holiday Season!!
&
Happy New Year!!***

Effective COMNAVSAFECEN Afloat Safety Advisories For 2001

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 for Surface Ships and Submarines
3-01	191215Z JAN 01	Follow-up on NAVSAFECEN Afloat Advisory 8-00 (Possibly Defective OBA Canisters)
4-01	241845Z JAN 01	Summary of Changes and Implementation of OPNAVINST 5100.19
6-01	031210Z MAY 01	Cancellation of Safety Advisory 11-00
8-01	171915Z AUG 01	Possibly defective OBA Canisters
11-01	282050Z NOV 01	COMNAVSAFECEN Security Clearance Information

Naval Safety Center

375 A Street
Norfolk, Virginia 23511-4399
Phone: (757) 444-3520 (DSN 564)
Fax: (757) 444-8636 (DSN 564)

submarines@safetycenter.navy.mil
www.safetycenter.navy.mil

FLASH Editor: ETC(SS) Craig Houck Ext. 7098
E-Mail: chouck@safetycenter.navy.mil

Afloat Directorate Head: CDR Tom Warner Ext. 7127
E-Mail: twarner@safetycenter.navy.mil

Commander Naval Safety Center
RADM David Architzel Ext. 7000

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 advance notice of other safety-related information.

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

THE SURVEYORS

Safety Officer/General Departmental

LCDR David Bragg	Ext. 7100
dbragg@safetycenter.navy.mil	
LCDR Parker Swan	Ext. 7201
pswan@safetycenter.navy.mil	

DC/Mechanical/Electrical/Electronic

EMC(SS/SW) Greg Seplak	Ext. 7092
gseplak@safetycenter.navy.mil	
ETC(SS) Craig Houck	Ext. 7098
chouck@safetycenter.navy.mil	
MMC(SS) Ron Downham	Ext. 7073
rdownham@safetycenter.navy.mil	

Medical

HMCS(SS) Brett Darnell	Ext. 7094
bdarnell@safetycenter.navy.mil	

Combat Systems/Deck/Divers

MMC(SS) Mark Gallenstein	Ext. 7091
mgallenstein@safetycenter.navy.mil	
STCM(SS) Bob Krzywdzinski	Ext. 7097
bkrzywdzinski@safetycenter.navy.mil	