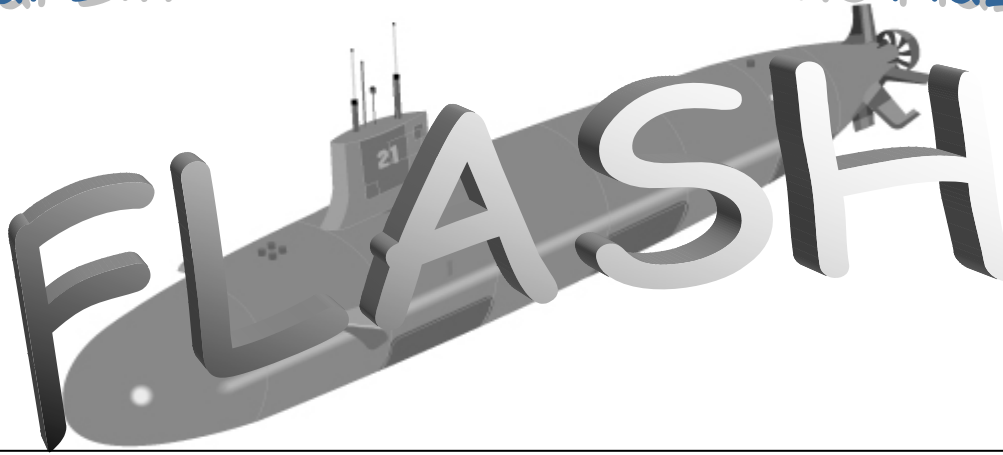


Submarine Division of the Naval Safety Center Factual Lines About Submarine Hazards



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Route for Safety's Sake

CO _____ XO _____ NAV _____ ENG _____ CSO _____ SUPPO _____ MDR _____

DCA _____ COB _____ EDMC _____ 3MC _____ CPOs _____ Ship's DCPO _____

When reading through these articles, remember this is not an all inclusive list and there are many other issues that should be addressed with regard to each section's attribute checklist. Each section owner is cautioned to review the Hazard Reviews for each section. For further

information or assistance in improving your safety and/or processes go to:

<http://safetycenter.navy.mil/afloat/downloads/default.htm> - submarine.

Damage Control

MMC (SS) Fannin

DAMAGE CONTROL PROGRAMS.

Ninety percent of the 42 ships surveyed in fiscal year 2008 have had galley range guard system cable assembly alignment and other PMS related deficiencies.

The non-accomplishment of MIP 5556/004 S-4R and the MIP 5556/004 M-2 PMS has prevented full APC actuation when necessary, adversely affecting the ship's fire fighting capabilities. Forty-two of 42 ships surveyed had an ineffective or incomplete method of performing and documenting situational PMS. The inability to maintain damage control equipment correctly seriously degrades the ship's readiness posture with regards to casualty control and combat.

Submarines with effective damage control programs provide adequate command level support for the DCPO. Ensuring that the chain of command recognizes the importance of situational PMS and understanding the hours and effort required for proper completion is one of the major keys to a successful damage control

program. A successful ship's DCPO supervises and supports division DCPOs in the completion of DC equipment PMS, most notably the situational checks following casualty control drills. "You get what you inspect and not what you expect." This quote has been heard throughout the Navy and will continue to be said until the end of time. In addition, the most effective programs include regularly scheduled division DCPO training, damage control GMTs, and EDC1 equipment spot checks by senior members of the chain of command. Hands-on training and refresher training as well as regularly scheduled looks from outside entities are good tools to keeping both equipment and level of knowledge at their highest state of readiness.

If you have any questions about these items or ideas for items to submit at the next DC conference feel free to call or email me using the contact information listed in this FLASH.

Swimming *MMC (SS) Lint*

With electricity, it's not the amount of voltage that kills, it's the current. The ocean, as with electricity, also has currents that can kill. Each year reports from both coasts come in of swimmers drowning as a result of fatigue associated with trying to swim against the currents. Currents are, in fact, dangerous; however, they don't always mean sure death if you use them, vice fight them.

The currents that may affect you, as you swim ashore, are rip currents and undertows.

RIP CURRENTS. Rip currents run for a short distance straight out to sea and are caused by water that has been temporarily dammed on the beach by strong winds. This water attempts to flow back out to sea along the course of least resistance such as in a channel between two sandbars. These currents may be strong and you should not attempt to reach shore by swimming against them. Allowing the current to carry you out until it loses strength could leave you too far out to sea. If you are caught in a rip current, swim parallel to the shore until you reach a spot

where the water is traveling toward the shore. Incoming and outgoing tides at the mouths of bays generate very strong currents; you can't fight them, but you can beat them by swimming parallel to the shore until you are free of the current and then swimming ashore.

UNDERTOWS. One wave running back to sea underneath the next wave coming in creates a current known as an undertow. Although much has been made of undertows, they are not as treacherous as many claim. They will not grab victims, pull them down, and carry them out to sea. It is true that an undertow may be strong in some places, but it is always short-lived. If you are knocked down by an undertow, go with the flow for the few feet that it may travel and then return to the surface.

Remember, use the currents to your best advantage; if you are caught in one, NEVER try to swim against the current. Good swimming and hope to see you at the beach.

Shorting Probes *ETCS (SS) May*

We encounter many problems with shorting probes on surveys despite the fact that

reference (a) states: "At least one safety shorting probe shall be in each space containing

electronics equipment. Shorting probes shall be constructed in accordance with a design provided by NAVSEA." These shorting probes are designed to discharge residual voltages in de-energized high-voltage circuits during maintenance. They are never authorized for use in live or energized equipment, or to test for the presence of voltages in a circuit.

The authorized shorting probe is a 25 kv model (NSN 6625-01-029-4176). It comes with a threaded hole in each end of the handle. The hole closest to the ground wire is for attaching the copper shorting rods used in the discharge process. The hole at the opposite end is to attach an extension handle. The auxiliary probe inadvertently could be screwed into this hole.

The auxiliary probe can then become a shock hazard due to being close to the grip. Reference (b) requires the probe be **permanently configured** to operate with or without the extension handle. Since submarines do not use this extension handle due to the confined environment, the threaded hole is to be plugged with either a $\frac{1}{4}$ " x 20 nylon screw with the head cut off (NSN 5305-00-543-5733) or RTV.

Shorting probes are easy to maintain and vital to work on de-energized equipment. The modification to the probe takes about 10 minutes

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

(b) MIP 3000/029 (S-10)

Dangers of Tie-wraps

LCDR Webb



Tie-wraps are the new Navy super glue. We use them to quickly attach everything; they replace line and marlin and eliminate the needed skill of knot tying. It would seem that tie-wraps are just perfect, and possibly invented with the Navy in mind. So why are we discussing them in a FLASH article you ask? Well, it's because tie-wraps can injure our personnel if not used with safety in mind.

There are two well known and relatively undocumented injury potentials associated with tie-wraps.

The "cut hazard" and the "eye poke hazard." The "cut hazard" comes when the excess tie-wrap is cut off removing the unsightly extra unneeded end of the tie-wrap, leaving a sharp razor-like point. Usually, wider and stiffer tie-wraps leave a sharper cut edge with higher cut potential. I have often seen Tie-Wraps used to secure the ships banner or connect lights to the brow, these are usually cut then rolled down so that the lock and ugly cut end are not viewed by personnel crossing the brow. This places the unseen cut hazard in the perfect location for a Sailor's hand and could quickly result in stitches, light duty, or worse. When securing items to your brow or other locations, where a Sailors hand might grab for support, here are ways to reduce the potential cut hazard: Use white cotton line, it is inexpensive, easy on the environment and will re-introduce the lost art of knot tying. Leave the

excess tie-wrap long and roll the excess out of the way so that it is not a poke hazard. Cut the excess off flat against the lock and sand or file any sharp edges.

The "poke hazard" is most commonly noted in major repair or shipyard environments. This occurs when tie-wraps are used to secure temporary services, hoses, cables, or ducts to the overhead or bulkhead. Uncut tie-wraps hanging in the overhead passageway becomes an

eye poke hazard. Many shipyards have shifted to strict use of marlin or other similar materials for securing temporary services to eliminate this hazard and reduce operating costs. Keep an eye out for these overhead tie-wrap hazards before someone has their eye put out by one. Tie-wraps are tools that have a purpose in our Navy, your ORM and safety practices will prevent tie-wraps from injuring your Sailors.

Potable Water Connections HMCS(SS) Bonneville

Two deficiencies have been in the "Top 5 Medical Safety Survey Deficiencies" for each of the past 25 years. Last year these were the #1 and #2 most common deficiencies.

"Unattended potable water service connection and garden hose connections can cause serious damage to the potable water system. Example: An (unqualified) seaman was using a garden hose connection in the crew's head to wash down the deck. He stopped to get in the chow line and left the connected hose lying on the deck. When the duty auxiliaryman vented the potable water tank, a small amount of water from the head deck was sucked back into the potable water system."

All sink and faucets with hose threads must be equipped with a vacuum breaker. NSN: 4820-00-164-3377 $\frac{3}{4}$ inch flow preventer. REF: NSTM 533 PARA 533-2.3.5.1 NAVMED P-5010 PARA 6-42.

This means that any potable water connection that you can hook a garden hose up to must have a vacuum breaker installed. Hot and cold potable water connections are located in almost every head onboard submarines.

"All potable water service hoses are to be disconnected, except when in actual use, to prevent any possible backflow. A warning label plate is required to be inscribed: 'DISCONNECT HOSE WHEN NOT IN USE' in one-inch high red letters."

Potable water temporary hose connections must be marked with caution signs - "DISCONNECT HOSE WHEN NOT IN USE," in one-inch high red letters. REF: NSTM 533 PARA 533-2.3.4. At every location that vacuum breakers are installed on those hot and cold water connections, you need a caution sign.

These two items were added to the survey checklist because of how easy it is to unknowingly contaminate the potable water and ultimately endanger the lives and well being of the crew. The perplexing thing about this problem is that it can be fixed with a few caution signs and a handful of flow preventers. So instead of wondering why this is still a problem today, spend those few minutes placing the order in the supply system and keep this from impacting your ship's schedule.

Oxygen Candles

LT Koch

Recently, on the HMS Tireless there was an incident involving their version of the oxygen candle, in which two sailors died and another was seriously injured. One of their oxygen candles exploded creating a shockwave felt 30 frames aft and immediately filling the forward compartment with smoke. The Board of Inquiry found that the most likely cause of the explosion was oil contamination. An evaluation of the candle stowage found that 57% had physical damage, 27% were corroded, 21% had protective caps not sealed, and 11% were contaminated with oil.

Although our oxygen candles are constructed differently, we are subject to the same dangers. The U.S. Navy tested this same scenario. A small amount of lube oil was applied directly to the candle and then it was lit off. Significant white smoke passed through the filter sock, pressure built up, and smoke began to leak through the lid seal; within 2 minutes, the lid blew off spreading burning pieces of sodium chlorate around a 15ft area. The pieces of the upper candle that were ejected would likely cause secondary fires in a shipboard situation.

We need to take the lessons learned from this British casualty and ensure all of our oxygen candles and storage locations are kept clean, properly maintained, and oil free. Get the word out to all our Sailors, regarding the dangers of oil and oxygen candles. Take the initiative and keep this from occurring in your ship.



Effective COMNAVSAFECEN Submarine Safety Advisories

- [Advisory 7-07](#), 081545Z AUG 07 Guidance on NAVSEA Approved Safety Harnesses and Climber Safety Sleeve Recall Interim Aloft Procedures
- [Advisory 1-08](#), 101833Z JAN 08 Effective COMNAVSAFECEN Afloat Safety Advisories for Surface Ships and Submarines

To download, you must be on a .mil domain terminal and have a PKI certificate. Go to our secure web site by selecting the [Secure site](#) link. Once you are on the secure site, select the [Afloat Messages](#) link, and then select the [advisories](#) you need.

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.

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