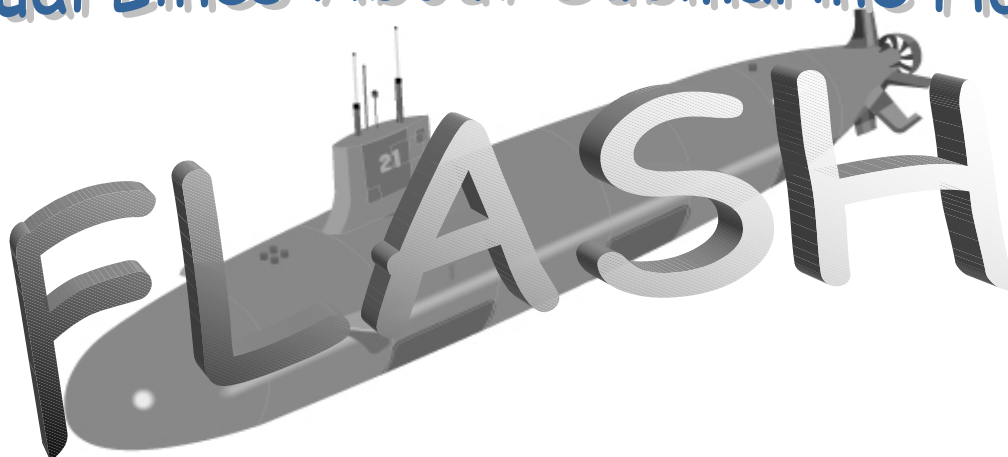


# Submarine Division of the Naval Safety Center Factual Lines About Submarine Hazards



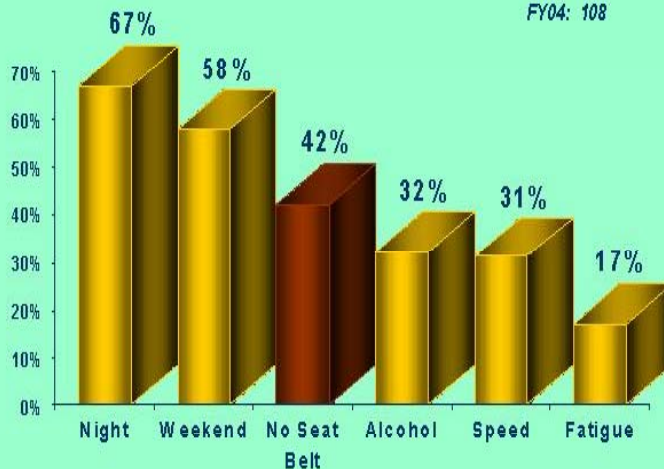
## TOP RECURRING DEFICIENCIES FOR 2004

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### Factors in Traffic Deaths

**USN/USMC, FY00-FY04** **FY00-04 Deaths: 571**  
 FY00: 114  
 FY01: 90  
 FY02: 140  
 FY03: 119  
 FY04: 108



**FY05 50**

#### Route for Safeties Sake

CO \_\_\_\_\_ XO \_\_\_\_\_ NAV \_\_\_\_\_ ENG \_\_\_\_\_ CSO \_\_\_\_\_ SUPPO \_\_\_\_\_ MDR \_\_\_\_\_

DCA \_\_\_\_\_ COB \_\_\_\_\_ EDMC \_\_\_\_\_ 3MC \_\_\_\_\_ CPO's \_\_\_\_\_ Ship's DCPO \_\_\_\_\_

\_\_\_\_\_

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When reading through these articles you are reminded that this is not an all inclusive list and there are many other issues that should be addressed with respect to each section's attribute checklist. Each section owner is cautioned to review the Hazard Reviews for each section located at <http://safetycenter.navy.mil/afloat/downloads/default.htm#submarine> for further information or assistance in improving your safety and/or processes.

## Lessons Learned We Don't Seem to be Learning From!

*LT Vic Romano*

When it comes to POV and traffic safety, it seems that we're just not learning from the examples that are provided too frequently. The graph provided on the cover page shows factors involved in fatal POV mishaps during FY00 through FY04. They look remarkably similar to previous statistics. We continue to struggle as a Navy to get our most valuable assets to and from work or to and from liberty safely. The purpose of any lessons learned program is to take the mistakes or examples that others have provided us and PREVENT recurrence. In the words of the Spanish-born American philosopher George Santayana, "Those who cannot remember the past are condemned to repeat it".

In 1963, the Navy lost 129 submariners aboard USS Thresher. The valuable lessons learned provided by this tragedy are still evident in the submarine community today, more than forty years after the mishap. This mishap was considered a national tragedy. Newscasters, in black and white for those of you not old enough to remember, broadcasted from the accident site. Investigation boards and congressional hearings were held to determine the cause of the mishap. The Navy's Quality Assurance Program was developed in response to the loss. Emphasis was

placed on taking what was learned from USS Thresher and preventing it from happening again.

Right about now you are probably thinking this dumb, old LDO has lost his train of thought. Surely, he can't draw a parallel between the Department of Navy's traffic fatality rate to the loss of the USS Thresher. Well, here's the rest of the story. Take a look at the graph again and you'll see that on average we lose as many Sailors and Marines to preventable traffic mishaps as we lost that fateful day on USS Thresher. The parallel is that when we lost only ninety Sailors and Marines in 2001 it was considered a good year not as a national tragedy. Statistically speaking, 2001 was a good year, but we still had ninety shipmates, friends, co-workers, trained craftsmen and supervisors not make it back to work or home again.

We can't just go to ServMart and pick up a new blue shirt or get the Chop to drop a chit for a qualified Diving Officer of the Watch. We have to start putting a face to these statistics and learn from their mistakes. Take a thoughtful look at the causal factors graph provided and the next time you're heading to or from work or to and from liberty, learn from the valuable lessons provided by your shipmates posthumously.

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# Safety Officer Administration Recurring Deficiencies

*LT Vic Romano*

I really don't want to drag readers down with more mind-numbing statistics with regards to how many boats lack waiver letters of designation for their CPOs assigned as the Safety Officer or how many boats cannot produce ample documentation of required NAVOSH training. I do however want to point out the top three Safety Officer administration areas and the simple fixes for them.

## **1. Mishap reporting is a key concern.**

Many commands do not submit a Mishap Report as required by paragraph A0601 of OPNAVINST 5100.19D. Chapter A6 of the instruction is very specific concerning what is reportable and what is not, yet compliance for the submarine community is inconsistent at best. Most ships surveyed lack mishap reporting for afloat special case mishaps discussed in paragraph A0601D (1)(d). These special case mishaps include all cases of electrical shock, grounding, collision, flooding, fire, chemical exposure requiring medical attention, ordnance-related, diving cases, and back injury requiring medical attention.

The simple fix for this recurring discrepancy is two-fold: (1) Understand the requirements for mishap reporting by reading Chapter A6. Call me if you are not sure as to whether a Mishap Report is required. (2) Compare source documents with the Mishap Reports submitted. The Safety Center and inspection teams (INSURV, MRI) will take a hard look at your command's Accident and Injury Reports, Casualty Reports, and Unit Situation Reports to ensure that every one of these reports that requires a separate Mishap Report has one completed. Several times annually the Safety Center must educate commands who report a fire, flooding, or chemical exposure via CASREP or SITREP, but place in the body of the message that no Mishap Report is required. A separate Mishap Report is required to enable the Safety Center to compile necessary trend data to provide the fleet with accurate and pertinent information.

## **2. NAVOSH Deficiency Abatement Plan is often times non-existent.**

The NAVOSHDAP is a \$5 acronym for a safety-related Equipment Status Log. This document allows the Safety Officer in unison with the ship's 3M Coordinator to track unresolved safety-related work candidates from discovery of the problem to fruition of the work. Whether your ship uses SNAP or OMMS-NG, the simple fix is a free flow of information from the personnel submitting the work candidate to the 3M Coordinator to the Safety Officer. Paragraph A0404F of OPNAVINST 5100.19D requires the Safety Officer maintain a current NAVOSHDAP. My recommendation is to maintain a section in the Safety Officer binder with an up-to-date NAVOSHDAP to track outstanding work.

## **3. Safety Officer course completion requirements.**

The NAVOSH Environmental Training Center teaches the Submarine Safety Officer course (CIN F-4J-0020). The Safety Center provides guest speakers for several of the areas presented. Section A0502A(3) of OPNAVINST 5100.19D requires that each Safety Officer attend. Many ships have difficulty in completing this requirement due to scheduling issues or operational commitments. The simple fix is once again two-fold: (1) The course is now provided quarterly via video tele-conference allowing attendance without requiring costly TAD orders or travel away from homeport. (2) The Safety Officer also can complete the Naval Safety Supervisor correspondence course (NAVEDTRA 14167) and Watch Station 305 portion of the Safety Supervisor PQS until attendance is attainable. Both of these files are provided electronically during safety surveys and ORM training. If you desire a copy or need clarification with anything service the Safety Center provides feel free to contact me.

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# 2004 Damage Control Trends

*MMCS (SS) Robert Morrow*

The best way to make next year better is to learn from last year. In the interest of self-improvement, here are some of the most common problems noted from safety surveys conducted last year. Take an honest look at these and decide if they apply to your program. If they do not apply due to your personal or your command policies please e-mail me or call me and let me know how you resolved the problem so that I can review your solution and provide process improvement information to your fellow DCPOs. Without further ramblings, here are the cold hard facts:

**1. All of boats surveyed with SCBAs had at least one cylinder below 4000 psi.**

This means that if you follow MIP 5519/016-84, W-1 the cylinder must be placed OOC immediately with tape across the locker. The most common causal factor for this problem is the SCBA being stored with the bottle valve open instead of shut. Another factor is coordinating the amount of time for recharging all air headers to 4000 psi and SCBA bottles to a minimum of 4000 psi. This is where EDC1 personnel need to be active in scheduling recharging instead of waiting for someone to tell you when there's 10 minutes available to do the work.

**2. 92% of boats surveyed had oxygen/acetylene kits missing items and/or bottles out of hydrostatic test date.**

Some ship's DCPOs are not comfortable inspecting equipment in the engine room, with the exception of air and hydraulics systems. They assume the kits are good to go because they are maintained by highly qualified personnel. Verifying the condition and inventory of this vital equipment is part of the EDC1 MIP 6641/009-A4, 18M-1R on most commands and part of the DC checklist. Lack of an AEL for inventory purposes

is where most DCPOs set themselves up for failure. Imagine someone who has seen a tool roll only once trying to inventory it without an AEL! Additionally, gas cylinder hydrostatic testing requirements are every 12 years. Many of the gas cylinders were manufactured decades ago, but if the hydro test dates are legible and within periodicity they are still compliant.

**3. 91 % of boats surveyed had range guard assemblies with fusible links not replaced in the last 6 months and/or there was less than 3" of travel.**

As we all know, the job is not complete until the paperwork is complete. In some cases, the fusible link "Date Changed Tag" required in MIP 5556/004-94, S-4R was not updated after the work was done. Some tags were missing. Clearly, either situation indicates the maintenance was either not completed or was not done with sufficient attention to detail. This S-4R maintenance is detailed and time-consuming, especially if you have the scissor assembly in the overhead. Work center supervisors need to ensure the maintenance is being properly conducted or your range guard system may not work if automatic or manual actuation is required to combat a casualty.

I hope everyone can see the importance of the items listed here. Some commands are very willing to work to get better. They only need information on the standards. Information is available on the NSC website at <http://www.safetycenter.navy.mil> where you can download the latest checklist and use it for your self-assessment. This will allow you to conduct the same type of survey we would perform for you.

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# Medical Department Recurring Deficiencies

*HMCS (SS/FMF) Tim Juneau*

Many medical department representatives (MDR) have heard of a Baseline Industrial Hygiene survey, but how many of you out there know how to utilize it to help you manage your programs? Apparently not too many! During recent safety surveys the MDR had a copy or the original baseline and kept it on file, but never actually looked at it. As the MDR, this survey is a valuable tool for the Safety Officer and you to identify hazards and assist in monitoring programs for the command.

That being said, the following recurring deficiencies were noted during 2004:

## **1. Sight conservation program concerns.**

Many MDRs did not have a sight conservation program in place. For those who did, only welders were in the program. The Baseline Industrial Hygiene survey for 688s recommends not only welders, but also ELTs and EMs. Chap B5 of OPNAVINST 5100.19D CH-1 discusses this program in depth.

## **2. Eyewash stations.**

Once more, eyewash stations and personal eyewash bottles raised its ugly head during the 2004 surveys. This discrepancy has been mentioned in prior FLASH articles, most recently the January-March 2004 issue. Personal eyewash bottles are required and must be accessible in the vicinity of nucleonics and the secondary sample sink. These should not be stowed in a locked locker. The NSN for these bottles are **6515-01-393-0728** or **6540-01-353-9946**. Note: Once the bottle is expended, it is deemed unusable.

The practice of refilling the bottles with normal saline is prohibited. These stations are required to be marked with a highly visible green sign with white letters. The NSN for the sign is **9905-01-345-4521**. Ensure that fixed eyewash stations are not being used as a storage area and that periodic operational checks are conducted to ensure it is available for casualty use.

## **3. Training.**

Appendix A5-A of OPNAVINST 5100.19D CH-1 lists periodic training requirements for shipboard personnel. The MDR must work closely with the Safety Officer and whoever is responsible for the ship's long-range training plan to ensure the required topics are incorporated into the plan. Semi-annual training for all engineering personnel involved with the procurement of potable water or maintenance of potable water systems is most discrepant. The majority of ships surveyed in 2004 are only getting half of the required training done. Part of the problem is being able to produce documentation that training was conducted. SAMS has a training module that works just great for this purpose. We know that engineering personnel are not the only ones procuring potable water while in port. I highly recommend MDRs conduct and document duty section training to ensure proper sanitized procurement of potable water for the ship is maintained. If you have questions regarding these recurring discrepancies or any other medical programs, please feel free to contact me.

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# Electrical Recurring Deficiencies

*ETC (SS) Bryan White*

Each year the NSC provides feedback through FLASH articles regarding recurring deficiencies in electrical safety programs. The 2004 report is disappointing, as we seem to be repeating the same deficiencies as in previous years. We aren't fixing the problems!

The following are the three most common recurring deficiencies in the electrical area taken from surveys performed in 2004. Keep in mind that these are just a sample of a bigger picture of systemic problems within our submarine electrical safety programs.

## **1. Navigation lighting panel N-1.**

Here is a dead horse revisited and the stench is worsening over time. Ninety percent of ships surveyed have incomplete modifications to N-1 panels. A&I 3171 (SSN) and TZ0856 (SSBN/SSGN) require ship's force to install nylon bushings on the COM breakers to isolate the cotter pin from the metal stiffener. The cotter pin is for the battle bar to switch between the primary and secondary circuits for powering the dual- element navigation lamps. Nylon screws are also installed to secure the bar to the breaker. Hazardous conditions exist when breaker tabs break the wire stiffener creating the same shock hazard that this A&I was meant to eliminate. All ships have reported completion of this A&I, but

maintaining the N-1 panel nylon fastener integrity is proving difficult.

## **2. Personal portable equipment.**

Paragraph 2.7.5.2.1D of NSTM 300 requires ship's force safety check personal portable electrical equipment when initially brought onboard. The basis for this one-time check is to ensure the equipment is suitable for shipboard use. Maintaining equipment guide lists (EGLs) of personal portable equipment is not required, but tagging the equipment once checked is required to document completion.

## **3. Electrical Safety Programs.**

Sixty-two percent of the ships surveyed in 2004 were not maintaining their electrical safety programs properly. MIP 3000 series specifies the required periodicity for safety checks. The periodicity varies depending on the type of electrical equipment involved. Personal items not included, the most non-compliant items continue to be submersible pumps, OTTO fuel detectors, and vacuum cleaners. High quality, often updated EGLs are a must. Electrical division cannot maintain a quality electrical safety program by themselves. The ship must maintain compliance. If you are in need of process improvement ideas, drawings, or NSN's please contact me.

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# Mechanical Recurring Deficiencies

*ETC (SS) Bryan White*

The survey attribute area that is most consistently in need of attention is without a doubt mechanical systems. The deficiencies noted here are the most commonly repeated among the ships surveyed in 2004 and look remarkably similar to what was in 2003 recurring deficiencies.

## **1. Bench grinder.**

All ships surveyed in 2004 had bench grinders that posed a substantial hazard to both operators and anyone in the vicinity of the grinder during operation. Misused abrasive wheels are accidents waiting to happen and go mostly unnoticed during zone inspections and supervisory assessments. The most overwhelming causal factor regarding abrasive wheel material condition is using the grinder to prepare soft metals, allowing non-ferrous materials to become embedded in the wheel. This debris presents a significant eye hazard to personnel when the wheel becomes unbalanced or when the debris is dislodged towards the operator or innocent by-standers. Other recurring problems include:

-Tool rests improperly adjusted greater than 1/8 inch from the wheel.

- Eye shields improperly adjusted with regards to coverage area, broken, or missing altogether.

- Electrically unsafe. Power cords are often frayed or have exposed conductors. Light sockets on the eye shields are often broken, crushed, or bulbs missing or damaged.

- Proper eye protection not available for use by the operator.

- Yellow and black eye hazard warning not appropriately marked on deck.

## **2. Steam kettles.**

From one continuing deficiency soapbox to the next. Steam kettle maintenance is not being completed, period. MIP 6520/001, MRC A-2, requires hydrostatic testing of the steam jacket piping once the pressure relief valve has been removed and sent to the IMA for pop-testing. The valve will have the test certification tag attached when returned from the IMA. Upon successful completion of the hydrostatic test on the piping there is a separate certification tag hung on the piping. One tag will not suffice for both. If you need process improvement ideas, drawings, or NSNs please contact me.

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# Effective COMNAVSAFECEN Submarine Safety Advisories

17-00      201959Z DEC 00      Contract Liberty Boat (Water Taxi) Safety

1-05      251930Z JAN 05      Effective COMNAVSAFECEN Afloat Safety Advisories for Surface Ships and Submarines

To download you must be on a .mil domain terminal. 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 [Submarine Effective Advisories](#) link.

## 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 are 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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