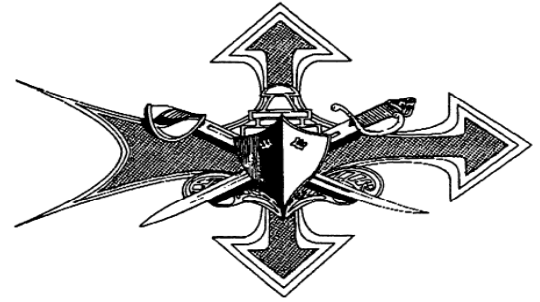


SHIPS' SAFETY BULLETIN

Prepared by Naval Safety Center
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APR - JUN 2009

Suggested routing should include CO, XO, department heads, division officers, CMC, CPO mess, petty officers' lounge, work-center supervisors, and crew's mess. Blanks provided for initials following review:

_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Recommendations for Using the Man Overboard Indicator System (MOBI)

By LT Pete S. Logsdon
Naval Safety Center

The man overboard indicator (MOBI) system is a personal saltwater-activated man overboard (MOB) alarm system. The alarm system includes a transmitter, receiver and direction finder (DF). The transmitter is attached to each in-service inherently buoyant and MK1 life preserver. When the transmitter is activated, it emits a radio frequency (RF) signal.

When a MOBI transmitter is activated visual and audible alarms on the receiver in the pilot house will sound. The transmitter will also emit a radio signal which is processed by the DF, providing a continuous bearing to the MOBI transmitter. Search and rescue (SAR) assets outfitted with traditional direction-finding equipment are capable

of homing in on the 121.5 MHZ emergency frequency to aid in a recovery effort.

During in port periods, ensure that all in-service MK1 life preservers are outfitted with MOBI transmitters per MRC Q-1 (step 2g, note 12, and figure 5) of PMS MIP 5832/002 for MILSPEC MK1 life preservers or MRC Q-1 (step 2j, note 20, and figures 1 and 5) of PMS MIP 5832/014 for commercially manufactured MK1 life preservers. Ensure that all in-service inherently buoyant life preservers are outfitted with MOBI transmitters per MRC R-1 (step 1f and figures 1 and 2) of PMS MIP 5832/015. Ensure that the pilot house receiver and direction finder have operating instructions posted near the equipment. Ensure that the small boat direction finder has operating instructions posted.

Immediately before getting underway and while underway, each unit should perform a system operability test for the receiver and direction finder. Direction finders are located in the pilot house and each boat so equipped. Use MRC A-1 (steps 1k through 1q) of PMS MIP 6630/003 to accomplish MOBI system operability test. Use MRC A-6

(steps 1j through 1n) of PMS MIP 6630/003 to accomplish operability test on the small boat mounted direction finder. After a satisfactory test of the receiver and direction finder, only the receiver needs to remain energized. Energize the direction finders once the receiver alarm has been activated. Perform MOBI transmitter maintenance as prescribed by MRC A-3R of PMS MIP 6630/003 to test each MOBI transmitter. This is required maintenance before getting underway. In the event of an activation of the bridge receiver, immediately energize the pilot house direction finder and follow unit shipboard instruction on man overboard procedures.

If small boat recovery is attempted, energize the small boat direction finder prior to launch. Enter the active MOBI transmitter identification number obtained from the receiver in the ship's deck log. Report all actual man overboard events through appropriate channels (operational reports, rescue report SAR form 3-50.1/1 and hazard reports), include any pertinent information about MOBI performance in report, and ensure COMNAVSAFECEN is listed as an information addressee in the message.

In the event of an inadvertent activation of the MOBI system, we request you make a report to safe-afloat@navy.mil, include the location of alarm, transmitter identification number, prevailing weather conditions, and reason for inadvertent activation. We will use this information to recommend future improvements.

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Test Equipment Detachable Power Cords – When Do I Use MIP 4911?

*By LT Garland Armstrong
Naval Safety Center*

During the last 15 years there has been an increase in detachable power cords used for commercial off the shelf (COTS), general purpose test equipment, and various luxury items (computers, monitors, televisions and various video/game equipment). Although all of these items provide a convenience, they also prove to be a nuisance to maintenance personnel.

So what's the problem? Why is it important to ensure that power cords are properly documented? The answer is simple; it's your life! We all assume that because the plug fits the jack that the equipment is ready for use. This is not the case! Each item when purchased new, usually, has a cord that must be safety checked with that specific equipment.

Normally, the safety check of detachable power cords would be completed by utilizing MIP 3000/001 General Electrical Safety; however, maintenance index page for 3000/001 (Scheduling Aid 6) states "This MIP does not apply to general purpose electrical/electronic test equipment (GPETE), including associated detachable power cords, covered by MIP 4911/1".

MIP 4911/001's primary maintenance requirement card (MRC) 18M-1/R-1 has a couple of notes that need to be addressed.

Applies to all GPETE (with fixed and detachable power cords, including items without power cords)

Dual periodicity correlates to whether or not the GPETE requires calibration.

If the GPETE requires calibration, then R-1 must be performed prior to submitting the item for calibration.

If the GPETE requires no calibration (NCR – no calibration required), then 18M-1 must be performed every 18 months

A safety check tag must be affixed to the power cord. It should have “MIP 4911/001 R-1” or “MIP 4911/001 18M-1”, model and serial number of the GPETE it is attached. In other words, every piece of GPETE should have its own dedicated power cord.

When using general purpose electrical/ electronic test equipment (GPETE) such as oscilloscopes, power meters, signal generators it is imperative that the power cord assigned to be used with the GPETE has been verified safe utilizing the 4911 MIP.

So, how do you eat an elephant? Answer- One bite at a time. When it dealing with the thousands of power cords and electrical safety checks onboard it can look like an elephant at first. Here are a few suggestions to help assist in tackling the beast:

- 1) How is it secured or stored?
- 2) Is it calibrated and within periodicity? (There are three types of stickers placed on GPETE - a calibration sticker (white), special calibration (yellow), or no calibration required (orange))
- 3) Is there a dedicated power cable associated with the equipment? Is it safety checked using MIP 4911/001.
- 4) Store detachable power cords used for GPETE with the equipment or store them physically separated from other detachable power cords.
- 5) Before issuing GPETE, ensure the fixed or detachable power cord has been safety checked for within periodicity.

6) Conduct spot checks on GPETE during zone inspections and maintenance spot checks

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Gas Free Program and Commanding Officer's Signature

DCC(SW) Joseph Barrois
Naval Safety Center

During a safety survey, it is a guarantee that the damage control surveyor will review the ship Gas Free

Program (GFP). From the list of common GFP discrepancies, we have noticed the commanding officer signature block, on the gas free certificates involving inherently dangerous to life or health (IDLH) atmospheres, is left blank.

You may ask yourself, “What is IDLH?” NSTM 074 Vol 3 states that IDLH procedures must be followed if the atmosphere meets one or more of the following conditions:

- a. Flammable vapors at a concentration of ten percent or greater of the lower explosive limit (LEL).*
- b. Oxygen content less than 19.5 percent by volume or greater than 22 percent by volume.*
- c. Presence of toxicants above IDLH limits. (See Appendix G of NSTM 074 V3,*

Permissible Exposure Limits.

Also NSTM 074 vol 3 section 074-19.14 IDLH SPACE ENTRY paragraph (h) includes more detail on spaces that are always considered IDLH.

h. The following spaces will always be considered to contain IDLH atmospheres until the space has been thoroughly cleaned and tested: CHT tanks and all system piping; fuel tanks (all types) and all system piping; chemical tanks (such as dry cleaning fluid tanks) and all system piping; AFFF concentrate piping. These tanks or systems may only be opened and entered under non-emergent conditions for the following specific situations. Commanding officer's authorizing signature is required on the space opening request and the gas free certificate for each occasion. All IDLH space opening and entry requirements of [paragraph 074-19.14](#) must be observed.

Another common problem found throughout the fleet is that all required tests are not being conducted. Specifically, hydrocarbon 2 test is not being performed on fuel system, both JP-5 and diesel fuel marine (DFM) or any space containing petroleum products (significant amount being stowed, based on platform).

A good check to use to identify a hazard in a space and what test should be performed is appendix E of NSTM 074 Vol 3, Shipboard Hazardous Atmospheres and Compartments Identification Tables. These tables, although not all inclusive to all hazards aboard naval vessels, are a good starting point to ensure we are conducting the minimum test for each hazard and

keeping our Sailors safe while working in hazardous conditions.

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Do You Know What the Requirements Are for a Main Space Eductor?

*By GSCS(SW) Ben Clarke
Naval Safety Center*

During safety surveys, it's not uncommon to find at least one discrepancy with a main space eductor. Eductors are vital pieces of damage control equipment. It's imperative to maintain them in proper working order and all requirements are met to ensure safe operation.

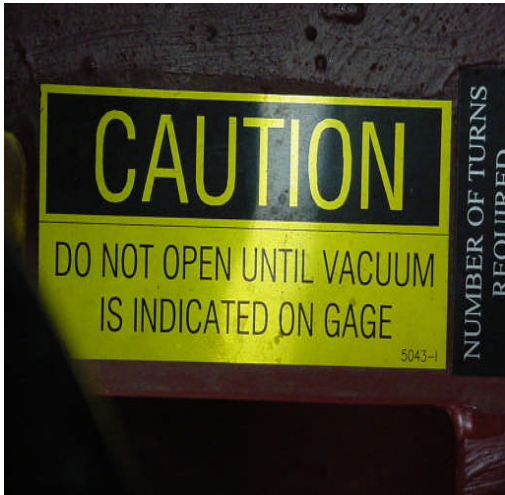
The following are some requirements the Naval Safety Center surveyors look for when surveying an eductor along with the references.

1. Are suction strainers installed and adequate? Ref: GSO 529J, NSTM 505-10.7.3
2. Is there a minimum of one space suction valve, which can be operated from the damage control deck? Ref: NSTM 505-10.7.2, GSO 529 H and NSTM 593.3.3.1
3. Is the Oil Pollution Act posted where applicable? Ref: GSO 593D and

NSTM 593.3.3.1. Remember, at any location where you can operate a main space eductor, including the MVHC stations, the warning signs, Oil Pollution Act and operating instructions are required. The operating instructions and diagram can be found in NSTM 505-10.7.6 and Fig. 505-10-2.

4. Is actuating pressure and suction pressure gages installed and calibrated? Ref: GSO 529 H and NSTM 505 Fig. 505-10-2.

5. Are eductor suction isolation valves provided with the required warning sign stating, "DO NOT OPEN UNTIL VACUUM IS INDICATED ON SUCTION GAGE." Ref: GSO 529H and NSTM 505-10.7.6D



6. Are eductor firemain actuating isolation valves provided with the required warning sign stating, "DO NOT OPEN UNTIL OVERBOARD DISCHARGE VALVE IS OPEN." Ref: GSO 529H and NSTM 505-10.7.6D



7. Are eductor and bilge drainage systems properly installed? Ref: NSTM 505-7.1

8. Are bilges contaminated with oil, fuel, or trash? Ref: NSTM 593-3.4.1 and EDORM 2503.B.15

In accordance with OPNAVINST 5090.1C, *Environmental Readiness Program Manual*: Chapter 22-5.4.5.1.d, Emergency dewatering. Ships shall not use eductors to dewater bilges containing oily waste, except in emergency situations when OWS systems (including OWHTs) are not available or are not of sufficient capacity to handle the immediate flow requirements. If a ship must use an eductor, it shall make every effort to discharge beyond 12 nm from land and while underway. The ship shall make an engineering log entry (nature, quantity, and geographic location) concerning eductor use to discharge bilge waste overboard.

Furthermore; to ensure that the ship is following proper procedures during eductor use and overboard discharge, consult the International Maritime Pollution (MARPOL) wheel.

You can order it under NSN 0420-LP-010-1720.

By following these guidelines, you will have safe and efficient operations of you space educators.

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Explosion-Proof Lighting

*By CWO3 Robert S. Randall
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Results of safety surveys indicate 92% of ships do not maintain their explosion-proof lighting properly. Many lights in the paint-issue room, flammable liquid storeroom, and the gas cylinder storeroom in the fleet contain these discrepancies:

- The glass globe is either loose and/or missing
- The wrong type of light bulb installed
- The lead ring gaskets are missing
- The lead wire seal is missing
- The mounting bracket is loose or disconnected

A real quick way to spot check if explosion proof light fixtures have been properly PMS'ed is to look at the globe, paying attention to the light bulb illumination. If the entire globe is illuminated, the bulb is the incorrect type installed. Figures below indicate the

incorrect and correct light bulb visual aid.

Incorrect Light Bulb



Correct Light Bulb



This is not a particularly difficult PMS to accomplish. More often than not, though, the ship does not have a proper EGL documenting all the locations of these fixtures. The result is lack of PMS accomplishment.

PMS MIP 3301/008 is the maintenance requirement for the explosion-proof lighting fixtures. The Naval Safety Center highly recommends that ships' 3M coordinators validate that this MIP is installed, assigned and periodically spot checked by the Command.

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How is Your Spray Shield Integrity?

*By GSCS(SW) Ben Clarke
Naval Safety Center*

Recent shipboard safety surveys have uncovered degradation in the material condition of spray shields.

Additionally, there has been confusion over which spaces and systems require protection when located outside of main and auxiliary machinery spaces. The following information taken directly from paragraphs 505-7.9.1.4 through 505-7.9.4.5.4 of NSTM 505, Piping Systems, outline the exact requirements concerning spray shields.

Spray shields reduce the risk of fire by preventing atomized flammable fluid spray from coming into contact with a hot surface or energized circuit and igniting. These shields do not stop leaks but prevent flammable fluid from atomizing. When spray shields become wet from a leaking joint or fitting, repair the leak immediately and replace the soaked spray shield. Spray shields require quarterly inspection and immediate replacement when losing their ability to retain leaking flammable fluids.

Spray shields will, “Cover the perimeter of the flanged joint with an

overlap sufficient enough to achieve complete enclosure. The side overlap will extend down to cover the bolts and nuts of the bolt circles on either side of the joint.” If the joint is butted against machinery such as lube oil piping fastened to a reduction gear, “. . .tightly secure the flange shield to the flange by fitting a metal band or hose clamp arrangement around the shield, and over the perimeter of the flanged joint.” Avoid painting spray shields. However, painted spray shields do not require replacement.

Where are spray shields required? Spray shields are required to be installed in areas outside main machinery and auxiliary spaces when a flammable system pipe flange or valve bonnet flange is in the direct plane of an electrical switchboard, electrical equipment and enclosure, or a motor. For main and auxiliary spaces on fossil fuel surface ships, spray shields will be on all flammable system pipe flanges and valve bonnet flanges.

On nuclear-powered surface ships, spray shields are required for pipe flanges and valve bonnet flanges on lubricating oil and hydraulic systems in the “direct plane of, or 10 feet or less from an electrical switchboard, electrical equipment enclosure.” For a detailed description of systems requiring spray shields and exclusions, review GSO 505(7e).

Spray shields are fabricated according to NAVSHIPS drawing No. 808-2145518. The drawings in ASTM F-1138 are repeated in NSTM figure 505-7-15. Order spray shields in 5-inch to 12-inch widths and 20 to 30 foot lengths through the supply system (NSTM table 505-7-2 refers). regional maintenance activities no longer manufactures spray

shields but will purchase them against a ship's JSN.

The bottom line: Frequently inspect your spray shields and don't wait to be "told" during your engineering assessment to install missing or worn spray shields. Also provide a copy of NSTM 505 to every work center that owns spaces with flange shielding, so the work center personnel can read the requirements and look at pictures to help with installing.

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Weapons Safety Survey

By LT Clarence S. Harris and
GMC (SW) Reggie Parker
Naval Safety Center

The fleet has suffered from 18 accidental weapons discharges in the last year. This has become a major issue throughout the fleet. As surface warriors we must remember who handles the majority of the weapons onboard our ships. Yes, it is some of the most junior Sailors. We must become aware of this issue, and ensure we have the proper clearing barrel procedures posted in accordance with REF: NTRP 3-07.2.2, to help prevent these mishaps from occurring.

The following are common discrepancies noted are the most frequently addressed during the weapons surveys:

Finding: 18 accidental weapons discharges have occurred in the last year.

Reference: NTRP 3-07.2.2 CH 1-4, 3-3, 4-3, 5-3, 6-3.

Recommendation: Ensure qualified supervisors are present when weapons are being handled on a daily bases.

Finding: Magazines and ready-service lockers temperatures and their logs are not being properly maintained.

Reference: NAVSEA OP-4, Ammunition & Explosives Safety Afloat, Revision 8, Chapter 3-12.12.2, MIP 5221/M-1R, Q-1, S-2, A-1

Recommendation: Conduct monthly inspections of temperature logs and cards. Temperature record cards shall be maintained for one year.

Finding: Various pressure gauges in sprinkler systems are improperly mounted and calibrated

Reference: NAVSEA s9522-AA-HBK-010 and NSTM 504.

Recommendation: Conduct ship-wide surveys to determine the extent of this discrepancy. Provide training and conduct extensive spot checks.

A wealth of material is available for download from the Naval Safety Center website at

<http://www.safetycenter.navy.mil> including, weapons survey check-sheets for self assessment, and other safety-related materials, and links to many other helpful sites.

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Are Your Danger Tags Hanging Properly?

By EMCS (SW) Andrew Fanning,
Naval Safety Center

More and more ships are moving to the use of Shift Operational Management System (SOMS) to meet their tag-out needs. One of the benefits of SOMS is the standardization of equipment tag-outs. During the installation of SOMS, it is important ships force verify the correct information is entered into the component data-base. This will prevent discrepancies from occurring during inspections of the tag-out system. If SOMS is down for some reason, then the ship has the option to revert back to the “manual” system to complete tag-outs. It is important for Sailors to keep their proficiency in the manual tag-out system.

When I look at a danger tag, I should be able to understand the position the tagged equipment is supposed to be in. The Tag-out User’s Manual (TUMS) states, “Describe the tagged position and any required condition of each tagged item using the most easily identifiable means.” For example, a breaker should be tagged in the “OFF” position vice the electrical condition of “OPEN.” When a three position switch labeled 1-BOTH-2 is tagged in the “2” position, then the switch must only be in the “2” position, thus preventing power being sent to the tagged out circuit.

Breakers located in high traffic areas, should be in the LOCKED condition, by use of a circuit breaker

clip. Use of these breaker clips, or covers, should be reviewed on a case basis to determine if use of such devices is warranted and appropriate.

Electrical systems only required a single isolation point in each conductor path to completely isolate the circuit being worked on, and to prevent operation of the system or component from all stations that could exercise control. It is important to place an “air gap” between the source of power and the circuit(s) being worked. This “air gap” can be established by turning breakers off, pulling fuses, or removing dead front fuse holder. Breakers with remote operating capabilities shall be tagged both at the breaker and at all remote operating stations.

Danger tags may be attached to switches (rotary switches, snap action switches, pushbutton switches, and other types of mechanical switches) to indicate the associated circuit is danger tagged, and to prevent inadvertent operation of that switch. Danger tags on push-button switches shall only be used in cases where it is possible to positively verify the push button position by use of other indications. For example, hanging a tag, stating “Do Not Operate,” on a push-button fails to describe the position/condition the equipment is required to be in, especially if the push-button does not have an indicator light.

Training regarding SOMS can be found at <https://mitsinc.webex.com> and <https://dms.mitsinc.us>.

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