SHIPS' SAFETY BULLETIN

Prepared by Naval Safety Center
RADM Arthur J. Johnson, Commander
Steve Scudder, **Editor**
(757) 444-3520 ext. 7115 DSN 564
E-mail: safe-afloat@navy.mil
Homepage:
http://www.safetycenter.navy.mil
HMCS(SW/AW) Walker, **Writer**

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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:

AWP Operations Require ORM

By BMCS(SW) Charles Gum
Naval Safety Center

During safety surveys, we routinely see personnel working over the side on ships from AWP (aerial work platforms); or more commonly, JLGs. One look at the area surrounding the operations can reveal whether the ship is complying with the requirements of OPNAVINST 5100.19E, Navy Safety and Occupational Health Program Manual for Forces Afloat, or not. Paragraph C0806 of OPNAVINST 5100.19E contains specific requirements for work to begin with AWPs. A few of the requirements are:

- The operator of any AWP must be licensed according to local instructions. Those instructions must include the requirements in NAVFAC P-300 and completion of PQS (NAVEDTRA 43127-C) watch station 311.
- A "Working Over the Side" chit must be routed through the chain of command and posted on the quarterdeck.
- A paint punt must be placed in the water near the lift operations.
- All personnel in the basket of the AWP must wear a safety harness and safety lanyard at all times.
- All personnel in the basket of the AWP must wear an inherently buoyant life preserver.

JLG OPERATIONS

You can find safety precautions required for safe AWP operations in paragraph C0806 of OPNAVINST 5100.19E. Don't let your AWP operations look like the picture above.

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(757) 444-3520 ext. 7834 (DSN 564)
E-mail: Safe-Code34@navy.mil

Do Your Slewing Arm Davit Falls Require Replacement?

By BMCS(SW) Charles Gum
Naval Safety Center

In NAVSURFWARCEN SHIPSYSENGSTA 211944Z Dec 06 (NOTAL), In-Service Engineering Advisory (ISEA) 025-06 alerted ships of hoist wire failures on slewing arm davits (SLAD). Since ISEA 025-06 was issued there has been an additional wire rope failure.

Research of failure data dating back to 2002 has shown five failures to wire rope on SLADS in addition to those mentioned above. No catastrophic hoist wire rope failures have been reported over this same time frame on non-SLAD type boat davits. Research of failure and maintenance data on SLAD davits as well as info received from ships regarding wire rope age and condition, indicate that wire rope failures began to occur once the rope passes 3 years of service. It is believed that the combined effects of the rotation of the wire rope (as the davit slews) and the corrosive environment the wire is exposed to accelerates the degradation of the wire rope.

Based on research, relative low cost of a new wire rope, and the severity of a catastrophic failure of the davit wire rope, a 3-year mandatory SLAD wire rope replacement periodicity has been established by NAVSURFWARCEN SHIPSYSENGSTA 101403Z Aug07 (NOTAL), ISEA 042-07. To improve the resistance to corrosion of the SLAD wire rope, drawn galvanized rope will be used in place of the existing uncoated wire rope. The wire rope will have to be open purchased due to unavailability of the wire in the stock system. I recommend that all ships having a SLAD davit installed obtain a copy of ISEA 042-07 and read it entirety for more specific guidance.

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(757) 444-3520 ext. 7834 (DSN 564)
E-mail: Safe-Code34@navy.mil

Watch out for Plastic Starters.

By EMCS(SW) Andrew Fanning,
Naval Safety Center

Plastic starters, for fluorescent light fixtures, are no longer authorized for shipboard use. NAVSURFWARCEN SHIPSYSENGSTA 161433Z AUG 07, In-Service Engineering Advisory (ISEA) 043-07 discontinued the use of plastic starters in fluorescent lights installed on Navy ships. The plastic case of the starter would crumble, when normal pressure was applied during removal, exposing Sailors to exposed electrical components.

IAW ISEA 043-07 plastic starters with NSN 6250-00-299-2881 and 6250-00-299-5962 should be purged from Navy stock system and purged from ships and shore storage facilities. After purging the plastic starters from the

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system, metal starters can be procured by using the above NSN. MIL-DTL-16377 will be modified to disallow the purchase of plastic fluorescent lamp starters. Plastic starter replacement should be scheduled during routine re-lamping of light fixtures. Maintenance actions are not required to accomplish this item.

If you find a plastic starter installed in a light fixture, notify the electrical division for removal in accordance one of the following two procedures.

Procedure 1:

1. Forces afloat comply with OPNAVINST 5100.19E.
2. Ensure all tag-out procedures are in accordance with TUMS.
3. De-energize circuit for lighting fixture and tag "out of service."

WARNING: Consider all electrical leads energized until positively proven they are de-energized.

4. Don PPE and test with multi-meter to ensure circuit is de-energized.
5. Apply a small amount of pressure to the plastic fluorescent lamp light starter. With pressure applied, turn starter counter clockwise a quarter turn and remove carefully.
6. Discard plastic start in accordance with standard shipboard practice.

WARNING: Do not apply excessive pressure if the starter does not come out easily. Gently apply pressure up and rotate counterclockwise to free starter.

7. Install metal starter by aligning the two pins with the opening in the fixture. Depress slightly and turn clockwise approximately a quarter turn until starter is seated.
8. Remove safety tag and re-energize circuit.

Note: If the decision is made to replace the starter while equipment is energized in accordance with NSTM 300-2.5 then follow procedure two.

Procedure 2:

1. The lighting fixture design makes it impossible to verify the starter circuit is de-energized without removing the starter. Therefore, it is mandatory that personnel wear rubber gloves and eye protection when changing starters.
2. Prior to changing starters in fluorescent fixtures, remove all light tubes (this effectively opens the circuit to the starter and de-energizes the starter circuit).
3. Removing the light tubes alleviates safety concerns regarding tag-out and working on energized circuits.

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Are You Doing Your Tag-outs Properly?

By EMCS(SW) Andrew Fanning,
Naval Safety Center

During a recent meeting with Naval Sea Systems Command, we discussed electric equipment found not properly tagged out. Section 1.6 and appendix F of S0400-AD-URM-010 Tag-Out Users Manual address the tag-out of electrical equipment.

First, electrical equipment requires an "air gap" to provide the physical barrier, to prevent the flow of current, through an isolation point. Solid-state devices do not provide this required air gap. For example, the LED on a dead-front fuse holder, does not prevent the flow of current through the indicator light circuit when the empty fuse holder carriage is reinstalled. The fuse holder receptacle must be taped over or plugged with the appropriate plastic plug. Also, racking out a breaker should provide a proper boundary, but the breaker should be fully racked out, to provide the air gap through the control circuit.

Second, switches should not be the single means for electrical isolation. Power to the associated circuit should be isolated by opening the circuit breaker or removing the fuses. Especially, if the physical location makes the switch susceptible to inadvertent operation, or the position can not be positively ascertained without electrical power.

Third, tags should be posted on the breakers or switches, when possible. If the switch or breaker has multiple operating stations, all operating controls should be tagged to prevent inadvertent operation. When necessary for electrical safety, it is permissible to post tags on electrical panel covers. However, tags should be posted directly on circuit breakers and switches whenever possible. Tape the tag over the applicable circuit designation for distribution panels with fuses removed.

Finally, provide the appropriate drawing number for the circuit you are tagging out in block 4 on the Tag-out Record Sheet. This will aid the authorizing officer in verifying the electrical circuits have been properly tagged out.

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(757) 444-3520 ext. 7834 (DSN 564)
E-mail: Safe-Code34@navy.mil

Oil Spill Containment Kits Are Important!

By GSCS(SW) Ben Clarke,
Naval Safety Center

Imagine hearing, "Cease all pumping!" on the 1MC, and when you go topside you see an oil spill? If you reached into the Mk II spill-containment-kit box, and found it empty, you'd suddenly feel frustrated and helpless. Your ship's ability to contain the spill would be greatly reduced until additional help arrives.

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Such a scenario concerns me because during shipboard safety survey visits, I have found ships with spill containment kits which either have the wrong material or have nothing at all.

Do you know what's in your oil spill containment kits -- in fact, do you even know where on the main deck your spill containment kits are located?

Do you know how many kits your ship should have? The answer to all three questions had better be a resounding "Yes!" because otherwise you could face a big problem if your ship is involved in an oil spill, or is asked to provide assistance to another ship. To avoid being unprepared for a spill, get a copy of the Allowance Equipage List (AEL) 2-550024006. It determines the number of kits required for your ship.

Then, find your spill kits and inventory the contents. Be sure all kits are complete, and follow the below guidelines.

First, keep the boxes away from open flames or areas where temperatures exceed 300 degrees. This is critical because sorbent sweeps in the kit are combustible and extremely flammable. They usually are wrapped in plastic, with four per kit. Additionally, the kit should contain four snap hooks and 50 feet of line. Basic instructions for using the kits include:

Second, to deploy the sorbent sweeps, two small craft are recommended. When small craft are not available, ship's force should determine the best deployment means, based on the ship's location relating to the pier and other nearby ships and structures.

Third, place the sweep down-current of the oil and slowly pull it toward the body of oil. Finally, collect the oil-soaked sorbent in 55-gallon drums lined with plastic bags. Seal the drums and store for disposal ashore.

Fourth, for onboard oil spills use the sorbent material to fabricate a barrier surrounding the oil. Use additional sorbent sweeps inside the containment area to absorb remaining oil. Containerize the oil soaked material in 55-gallon drums lined with plastic bags. Seal and store for disposal ashore.

Additional oil spill information is available in paragraph 593-3.6.6 of NSTM 593, *Pollution Control*; in OPNAVINST. 5090.1B (with change 4), Environmental and Natural Resources Program Manual; and in Appendix B3-A of OPNAVINST 5100.19E, NAVOSH Program Manual for Forces Afloat.

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(757) 444-3520 ext. 7834 (DSN 564)
E-mail: Safe-Code34@navy.mil

Ladders: Take One Step at a Time

By GSCS(SW) Ben Clarke
Naval Safety Center

There has been an increase in shipboard ladder mishaps resulting in Sailors needing lost workdays,

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light duty, and even unplanned personnel losses due to injuries. These mishaps primarily resulted from haste, poor situational awareness, and disregard for one's own safety.

The following are some examples of recent ladder mishaps.

- A Sailor was descending a ladder leading to radio central. Darken ship and modified material-condition zebra were set in the access trunk. The Sailor had misjudged the last ladder rung and bent his right foot over the rung's leading edge. The bend was at an awkward angle in relation to the rest of his body. The Sailor fractured a small bone in his foot and fell to the deck

- Another Sailor was going down a ladder quickly when he lost his footing and balance. He extended his left arm behind him to break his fall. On impact, he broke his elbow.

- Meanwhile, aboard another ship a crew-member was preparing to descend a ladder leading from the first deck to the second. He placed one foot on the ladder's top rung, then began to place his other foot on the ladder. He lost his grip and fell the length of the ladder fracturing his left arm.

- Finally, a Sailor was climbing the vertical ladder leading from the hanger deck to the 02 level. He had a soda in one hand and a sandwich in the other hand. An alert shipmate saw him and warned him about the unsafe act of climbing a ladder while carrying objects in both hands and how it could lead to a fall. As his shipmate was warning him, the climbing Sailor lost his grip and fell almost two flights to the main, or hanger deck and broke his leg.

Always move up or down an inclined ladder holding onto a rail with at least one hand but, if possible, have each hand holding onto a rail. Always hold on with both hands when climbing or descending vertical ladders.

Never skip a step up or down ladders. Never slide down ladders.

Post warning signs where decks are slippery, and make sure non-skid strips are installed at the top and bottom of all inclined ladders.

Never dismantle or remove any ladders without the commanding officer's permission.

Make sure all obstructions in 72-inch, low overheads by inclined ladders, and in 75-inch passageways, are adequately padded and the padding is in good repair.

You can get the specifics on these safety measures in Chapter C0102 of OPNAVINST 5100.19E 5100.19E, Navy Occupational Safety and Health Program Manual for Forces Afloat) under the topic of general safety.

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(757) 444-3520 ext. 7834 (DSN 564)
E-mail: Safe-Code34@navy.mil

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HM Storage Requirements

By HMCS(SW/AW) Vincent Walker
Naval Safety Center

In COMUSFLTFORCOM 031652Z JUL 08, to ALFLTFORCOM, the need to verify the proper storage of flammable and combustible material are highlighted due to the critical impact on the safety of our ships and Sailors.

HM (hazardous material) programs must comply with OPNAVINST 5100.19E, Navy Safety and Occupational Health Program Manual for Forces Afloat, and Naval Ships' Technical Manual (NSTM) CH 670 *Stowage, Handling, and Disposal of Hazardous General Use Consumables*.

NSTM CH 670 states:

670-4.5.2. In-use stowage of Category II combustibles shall be in flammable material issue rooms, ready service storerooms, or NAVSEA-approved commercial in use storage flammable liquid cabinets.

670-2.2.2. Avoid living quarters, restricted areas, magazines, and hot work areas while transferring HM. Minimize the blocking of passageways.

OPNAVINST 5100.19E **C2302** states:

1) Store HM in containers or compartments reserved and configured exclusively for HM. Bulk and infrequently used HM shall be stored in compliant storage spaces and only moved to the HAZMINCEN when necessary for replenishment and use. Do not stow HM in spaces or locations that are not specifically authorized for HM stowage.

2) Stow incompatible materials in separate compartments to prevent mixing in the event of a spill.

3) Ensure that HM stowage locations other than lockers are equipped with supply and exhaust ventilation. Keep ventilation systems in good operating condition. Any area to be used for HM stowage must first be evaluated by an industrial hygienist.

4) Mark stowage compartments to identify type of HM stored by hazard characteristic code. Keep the compartment/materials clean and dry at all times.

5) Prohibit smoking, eating, or drinking in stowage areas. Never permit open flames or spark-producing items in HM stowage areas.

6) The gas-free engineer shall monitor HM stowage compartments for oxygen depletion, suspect explosive atmospheres, the presence of potentially toxic vapors, and CO2 accumulation any time the question arises as to the safety of a stowage area.

7) Operate only explosion-proof electrical equipment in a potentially explosive environment. Maintain explosion-proof electrical fixtures in proper condition in applicable HM stowage areas.

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8) Pack oily rags in approved containers and stow containers in flammable storage areas.

9) Store all toxic material in cool, dry, well-ventilated spaces separated from all sources of ignition, acids and acid vapors, caustics, and oxidizers.

10) Stow acids in a locker lined with acid-resistant material in the flammable liquids storeroom separated by a partition, or by at least three feet, from all other material.

11) Oxidizers violently react (heat, combustion) with organic materials at room temperatures. Oxidizers cannot be stored in the same compartment with flammable or combustible materials such as fuels, oils, solvents, grease, paints, or cellulose products.

12) Stow ship's stores aerosol stock items in the flammable liquid storeroom.

Supervisors **must** ensure that appropriate training is given to personnel assigned HM responsibilities. Sailors must be careful when using HM due to the consequences of improper handling. Improper use and stowage of HM causes injury to personnel and costly damage to equipment. Failure of the fleet to store flammable and combustible materials properly results in unsafe conditions that can lead to personnel injury and damage to vital ship systems.

Proper HM stowage is the key to preventing injury or damage to equipment. HM should be stored in containers or compartments reserved and configured exclusively for HM. Confined spaces, Trans-Deck voids and trunks, fan rooms, and other confined unmanned spaces are not authorized for HM stowage. These spaces lack proper ventilation and are not kept cool and dry. These spaces also lack proper explosion proof electrical fixtures and are not monitored for oxygen depletion,. These spaces suspect explosive atmospheres, the presence of potentially toxic vapors, and CO_2 accumulation. Any area to be used for HM stowage must first be evaluated by an industrial hygienist. The requirements for proper stowage for proper stowage of HM and combustibles can be found in OPNAVINST 5100.19E Chapter C2302.

NavSafeCen Points of Contact:
(757) 444-3520 ext. 7834 (DSN 564)
E-mail: Safe-Code34@navy.mil

Facts About Halon!!!

DCC(SW) Joseph Barrois
Naval Safety Center

During a recent mishap on a United States naval ship some misconceptions about Halon throughout the f fleet came to light. To clear up these misconceptions and to ensure the fleet is getting the facts about Halon, I have pulled some information from NSTM 555.

Halon 1301 is a gaseous, total flooding, multi-level fire extinguishing system designed to extinguish oil spray and deck fires in and above the ship's bilges that force the machinery space to be abandoned. This system shall be operated as soon as the decision is made

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to evacuate the space. Operation of the Halon system will activate visual and audible alarms and automatically shut down space ventilation, including dampers, where installed. **Halon 1301 concentrations, nominally 5-7 percent, may be breathed for up to 10 minutes. However, BUMED policy requires personnel without breathing protection to exit the space when the Halon 1301 system is actuated**. (NSTM 555 555-10.3.2.6)

Halon decomposes upon contact with flames or hot surfaces above 900°F (482°C). Decomposition products are principally hydrogen fluoride and hydrogen bromide, which have a sharp irritating odor even at low concentrations. (NSTM 555 555-1.12.7.5)

The short discharge time of Halon 1301 (10 seconds maximum) keeps the thermal decomposition products well below lethal concentrations. The real hazard lies not in the by-products of the Halon, but rather in the products of combustion from the fire. Combustion products such as CO, combined with the oxygen depletion, heat, and smoke pose a greater hazard to personnel. If Halon 1301 should inadvertently be released into a space where no fire exists, personnel can be exposed to 5 to 7 percent concentration of Halon 1301 for a period up to 10 minutes (depending upon the individual) without danger to health. Halon 1301 can be considered a nontoxic and non-suffocating extinguishing agent in the normal 5 to 7 percent concentrations**; however**, spaces should be evacuated on Halon system discharge. (NSTM 555 555-1.12.7.6)

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