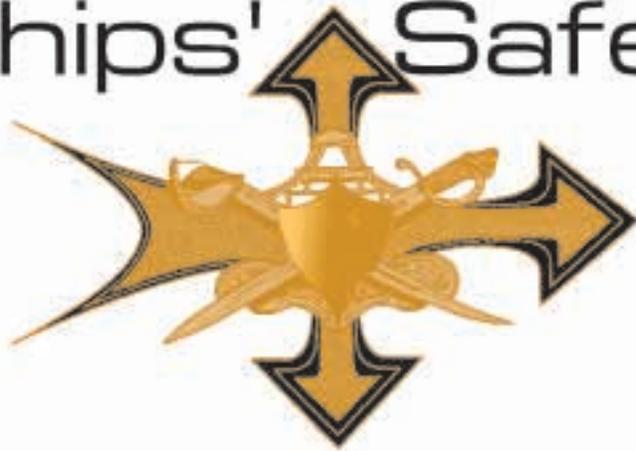


Ships' Safety Bulletin



Prepared by Naval Safety Center

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Good news! We're beginning to see more and more ships equipped with supplied-air respirators (SARs) and self-contained breathing apparatuses (SCBAs), and the feedback is mostly positive. Sailors usually say, "It's great!" or "It's about time!"

There are two small drawbacks to SARs and SCBAs. First, the pressure gauges have to be calibrated every 18 months. Second, you must hydrostatically test the cylinders every three years, according to personnel protection in-service engineering agent (PP-ISEA). Use MRC 5519/015 S-1R and 5519/015 18M-1R.

Doing this maintenance poses a problem, but a little operational risk management can help you identify the hazards of removing this life-support equipment from a ship. All you have to do then is assess the hazards, make risk decisions, implement controls, and supervise to ensure the controls remain in effect.

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Despite repeated warnings about the hazards of using the wrong types and sizes of fuses, we still find problems in power and lighting-distribution boxes throughout the fleet. You should be following the requirements outlined in Mil-E-917E (as referenced in NSTM 300-1.2.7) and Mil-F-15160. The former states that fuse ferrules and fuse-knife blades shall be silver-plated. The latter specifies that fuses be designated according to this example:

F61C500V6AS (part number)

Style	Characteristic	Voltage	Current	Silver Plated
	(Three Types)	Rating	Rating	

A - normal blowing, normal interrupt

B - time delay

C - instantaneous or normal blowing, very high interrupt

S - silver-plated ferrule

When you replace fuses in power and lighting-distribution boxes, make sure the new fuses are the correct type. Use the part number to order replacement fuses as needed. If you receive fuses that do not have silver-plated ferrules, contact your supply officer for submission of a quality deficiency report.

Work-center supervisors play an important role in making sure maintenance people use the right fuses. Before you send someone to clean and inspect power and lighting-distribution boxes, review NSTM 300, Rev. 4, para-



graphs 300-2.5.4 through 300-2.5.4.6. You also need to review the applicable MRCs for cleaning and inspecting these boxes, as well as the ship's tagout instruction and any ship-specific standing orders regarding fuse replacement and removal.

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Catch 'Em If You Can

That's good advice for Sailors everywhere, following several recent assaults. The assailants are not prejudiced against anyone and never take prisoners. They strike anytime day or night and often cause the victims to lose workdays. In some cases, convalescent leave is necessary. Although there are a lot of these assailants around, you won't find "wanted" posters for any of them. Why? Because they're not people. They're the quick-acting watertight scuttles and hatches you find aboard ship.

When you pass through these damage-control fittings, you must use caution. Most mishaps involving them are due to failure of the locking device or someone not making sure the locking device is fully engaged before passing through a fitting. All damage-control petty officers, otherwise known as DCPOs, need to look more thoroughly at their quick-acting watertight scuttles and hatches and related components. Use MIP 1671/001-87 (force revision 4-99) and the damage-control watertight-closures inspection, maintenance and repair booklet (NavSea S9169-AW-DCB-101). If questions still arise, contact your chief damage controlman or the repair division for more guidance.

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Flangehead Asks: Are You Ready for Sea?

Stop! Take a quick look around the main space. Do you see anything out of place? What about that vacuum cleaner sitting in the middle of the deckplates, or those paint cans in the angle irons? Are your storage lockers bolted down? Is that swab supposed to be stowed inside the escape trunk?

Don't worry. There is no real reason to secure for sea. The ship never rocks enough to topple that heavy tool locker, and you can pick up gear adrift later, right?

Wrong! What happens if the ship hits a mine, collides with another ship, or a major fuel leak explodes into a fire? Your egress training won't help much if you break your leg after tripping over that vacuum cleaner, or you have an unsecured tool cabinet pinning you to the deck.

I know what you're thinking: What are the chances of those casualties happening on my ship? I felt that way, too, until one of the machinery rooms aboard my ship caught fire.

The ship had just finished an availability period in which workers had replaced some of the jet-fuel transfer piping in the uptakes. Unfortunately, we hadn't done any pressure testing when the repairs were complete. If we had, we would have seen an open-ended pipe.

We were leaving port as the topside fuel transfer began. The JP-5 followed the path of least resistance: gushing out the open-ended pipe into the uptakes and directly on top of two steaming boilers. The fuel ran down the sides of the boilers and burst into flames within a few seconds.

First, word came over the 1MC, "Fire! Fire! Fire! Class Bravo fire in the main-machinery room!" Then, the general-quarters alarm sounded. I was scared as I ran to my repair locker. I was hoping that my shipmates in the machinery room were OK and that I wouldn't die while serving as a member of the re-entry-hose team.

Soon, we had secured power to the space (including lighting), and the watchstanders were running for their lives. I couldn't help



wondering if anyone had tripped over vacuum cleaners or mop buckets as they made their way in the dark to the escape trunk. "What about that mop handle holding the door open on the lower level?" I thought. "That would let smoke fill the escape trunk with the ladder everyone would have to use for escape."

We fought the fire for hours and finally put it out. Several people were injured, but no one died.

World events bring our ships close to conflict with increasing frequency. One ship nearly was blown in two by a missile, and three ships have hit mines in the Arabian Gulf.

As you walk around your spaces, ask yourself, "Are we ready for sea? Where would the unsecured gear end up if the ship had an explosion or a collision? Could I find my way out of the space without tripping over something if the lights were out?" Stow that gear adrift and secure your lockers and tool boxes. Your life may depend on it.

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Strap On This Info

To Breathe or Not To Breathe

At the in-brief during a safety survey, the command asked if we would look at a ventilation problem they were having in the paint locker. The problem appeared to be inadequate airflow. The reduced air flow wasn't enough to purge the space of paint vapors. It was difficult for anyone to remain in the space very long; however, the ship's most recent industrial-hygiene survey didn't show any ventilation problem in the paint locker.

As we entered the paint locker, the vapors indeed were overwhelming. It didn't take us long to see what was causing this problem. There were many unsealed cans of paint, thinner, and discarded rags surrounding the ventilation intake. Of more concern was the fact no one was wearing PPE. They were oblivious to the serious health problems posed by inhaling toxic vapors.

The space obviously didn't get that way overnight. It was due to long-term neglect (check out photos of the space in the NavOSH section of the Safety Center's web page). Just because change 2 of OpNavInst 5100.19C eliminated all periodicity-based hazmat inventories doesn't mean that work-center supervisors should turn a blind eye to the status and upkeep of their spaces. Unfortunately, this wasn't an isolated incident.

Although many instructions govern the proper stowage of hazmat and the use of PPE, nothing can take the place of common sense. Speaking of common sense, here's a scenario taken from an actual mishap report, which is a clear example of someone's brain cells just not connecting:

From 0800 to 1400, two Sailors painted a berthing compartment with a spray gun. Temporary ventilation was installed, and the Sailors used the correct respirators and eyewear. Throughout the day, however, they took numerous breaks without leaving the space. During these breaks, they removed their PPE and repeatedly exposed themselves to the paint vapors. Both were taken to medical for treatment. Need I say more?

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A batch of C2 and C2A1 canisters have failed surveillance testing. C2 canisters from lot RFT90M001-034 have been suspended from further service.

Mark the canisters from this lot for training by painting a white band around the circumference. Don't remove the unserviceable C2 canisters from their packing containers. Instead, paint the containers white to cover all the manufacturer's data, then use black letters to write "C2/C2A1 for training." Stow the unserviceable canisters separately from your serviceable CBR-D assets.

For more guidance, get a copy of NavSurfWarCenShipSysEngSta message DTG 212000Z Mar 00 from your type commander.

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Bad News Evokes Some "Trash Talkin'"

What's the easiest way to upset the LCPO of a ship's food-service division? Tell him the new trash cans he just purchased for all his spaces aren't authorized for shipboard use.

The incident I'm talking about took place during a recent safety survey. The LCPO had replaced all the old metal cans with new, durable, plastic ones. Like many others, he failed to realize the danger of plastic trash cans: They give off toxic vapors when they burn. Metal cans, on the other hand, will contain a small smoldering fire.

If you're one who would like to see the rules in writing, consult NSTM 670 (Stowage, Handling, and Disposal of Hazardous General Use Consumables), Section 1, Article 670-1.4.2, and Appendix C23-D of OpNavInst 5100.19C (*NavOSH Program Manual for Forces Afloat*), with change 2.

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Take Time To Be a Good Supervisor

How many times have you, as a supervisor, walked past a Sailor wearing no personal protective equipment (PPE) or wearing it wrong (goggles shoved up on hat in accompanying photo) and didn't say anything to him? We're all guilty of being preoccupied or too busy at times to protect our Sailors from themselves.

In the past three months, we have received reports of 17 mishaps involving chemical or toxic exposure. How many of these mishaps could have been prevented? All. In each case, the victim used the wrong PPE or didn't exercise enough caution while doing his job. Fortunately, none of the injuries, ranging from chemical burns to the cornea to chemical pneumonitis (inflammation of the lungs from inhaling toxic vapors), resulted in permanent disability.

Although these 17 mishaps represent a small percentage of the current afloat manning numbers, we can't afford to trivialize such incidents or accept them as the cost of doing business. All it takes to stop these mishaps is supervision. With this tool, we, as leaders, can train, direct and oversee Sailors in the day-to-day tasks that keep the fleet ready. Our Sailors are our most valuable assets.

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Correction:

The article "Putting the Coverall Confusion to Rest" in the January-March 2000 issue contained an incorrect AEL. The correct one is 2-880044201.



One answer to that question is burned hands from using Hatco heated sanitizing sinks without drain baskets. If you were using operational risk management (ORM), you'd buy 24-inch-by-30-inch baskets (stock number 9Q-7330-01-373-4480). Incidentally, you also need to see if the rubber boot covering the power switch is torn or missing. Wet hands touching bare-metal electrical switches don't mix.

You also should open purchase shoulder-length gloves and use them to prevent 180-degree F water from running over the top and burning your arms and hands. You can get these gloves from Safewear (part no. COA731) on the east coast (phone 1-800-929-3346) or Airgas (part no. 212703) on the west coast (phone 1-800-829-6140).

There also appears to be a lapse of memory about using ORM when it comes to garbage grinders. During safety surveys, we find the safety cover missing or the interlocking power switch not working. This is not the way to identify hazards or put controls in place.

Remember the five-step process:

Identify the hazards. Evaluate the work area and the task involved. Pick out manageable pieces of the event and brainstorm to identify all the related hazards (e.g., with Hatco heated sanitizing sinks, make sure all the equipment is in place and working before you use it). Look for every discrepancy.

Assess the risk of those hazards. Ask yourself: When is the hazard going to occur (probability), and how serious will the consequences be (severity)?

Make risk decisions. There are three parts to making a risk decision. First, prioritize the hazards, listing the most serious first. Second, discuss your options to reduce the risk. Third, decide if you can proceed with the task by ensuring the options you discuss can be enforced. Also make sure no other factors exist that will prevent reducing the hazards. Ask these questions: Can I do the task? Do I need to re-evaluate the situation?

Implement controls. You accomplish this step by identifying controls that will ensure the

concerns and options discussed in step three are taken into account and are in place within the controls. You may only need three or four controls to maximize the effectiveness of the options you have decided on.

Supervise. Supervise those controls you decide on to make sure they stay in place and are effective. Constantly monitor for change. Any change in the controls or task likely will present a new hazard.

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All or Else

That expression fits the case of a PO2 who was tasked to do voltage checks on an engine fire-extinguisher bottle aboard an H-60, LAMPS Mk-III helicopter. He was a member of the embarked helo squadron. The bottle being checked had been removed, reinstalled and left de-armed. Another one, however, had not been removed or de-armed. When the PO2 applied voltage, it set off the cartridge-actuated device (CAD) on the latter bottle and caused it to discharge.

Looking at this mishap from an ORM perspective, it never should have happened. The hazards related to this task had been identified and assessed. Controls, in the form of written procedures (NavAir 11-100-1.1 and A1-H60CA-490-200, held by the helo det), were in place to prevent a mishap. However, the PO2 didn't follow these procedures.

In the final analysis, it takes all 5 steps of the ORM process, or else you don't accomplish a job successfully. In this mishap, steps 1, 2 and 3 were accomplished. However, step 4 was only partly accomplished (written procedures existed, but they weren't followed), and step 5 (supervision) wasn't ongoing. If it had been, a change in situation and task would have been identified, and controls would have been implemented.

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Why Grease Guns Need Labels

If tubes of grease are labeled, and grease guns are only tools, why do we have to put labels on the guns? Because the barrels of grease guns usually cover the labels on the tubes. In some cases, grease is bulk loaded in the guns by hand, and no labels exist.

Although most types of grease have similar toxicity and reactivity, not all are used for the same purpose. Neither do they have the same hazardous properties under certain conditions (e.g., heat or exposure to other substances such as oxidizing agents). There are 674 different brands or types of grease listed in the HMIS, with only 226 authorized for shipboard use.

Aside from the usual skin problems from prolonged exposure to most greases, some of them give off toxins, which, when inhaled, may cause respiratory problems, such as pneumonitis (inflammation of the lungs) or flu-like symptoms. Neurological toxins may cause headaches, dizziness and nausea. Many of these problems are rare, but the risk still exists.

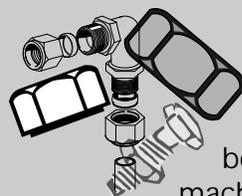
Health concerns are not the only issue related to labeling greases. They also have different applications. Some are for use in extreme cold weather, high temperatures, aircraft o-rings, or flanges. In other words, you could pick up the wrong grease gun and damage a piece of expensive, sorely needed equipment.

These problems are good reasons to label your grease guns as secondary containers. If you need official motivation, consider OpNavInst 5100.19C with change 2, Chapter C23, paragraph C2302e, and Chapter D15, paragraph D1502e(1), which require labels on all secondary containers, as well as in all cases where the manufacturer's label is missing or can't be seen.

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The Nuts and Bolts of Things



How familiar are you with the many nuts and bolts that hold together the machines, piping and structural

components in the fleet? It's evident during our safety surveys that some of you don't know or ignore the fact that certain fasteners are designed for specific uses. Here are some of the common discrepancies we keep finding:

- ◀ Ferrous fasteners used in water systems
- ◀ Washers used to compensate for fasteners with the wrong length or diameter
- ◀ Cross-threaded nuts on valve stems because of incompatible thread types
- ◀ Improper material and grade selection for high-temperature applications
- ◀ Short studding, especially on flanged-piping joints.

In most cases, you can find information on replacement fasteners listed on an APL, in a manufacturer's technical manual, ships' drawings, or other equipment-specific sources.

When the type fastener isn't spelled out, you can choose the correct one by using general criteria. Ask yourself these questions:

What classes of thread or grade should I use?
Should I use lock or flat washers?

Is this material suitable for high-temperature or salt-water application?

Before you can select the correct fasteners, you must answer all these questions and more. If technical documentation is vague, unlisted, or simply says commercial, refer to Chapter 075 of the NSTM. It's a great source of general information on selection criteria, as well as installation techniques. Read it and find out just how much you really know about all those nuts and bolts used aboard your ship.

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