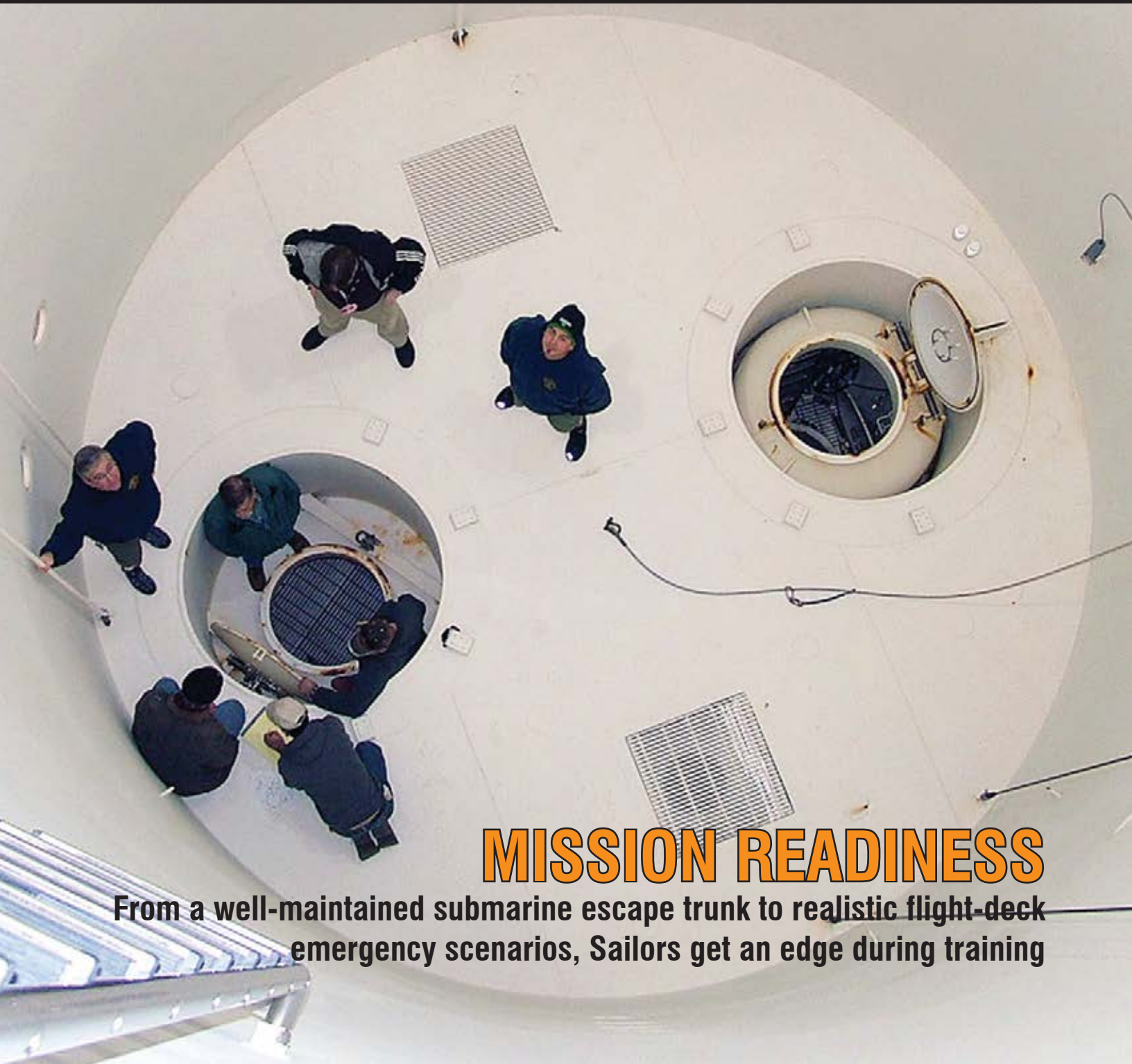


SEA COMPASS

The Naval Safety Center Magazine for Surface, Submarine and Diving Operations

Fall-Winter 2013



MISSION READINESS

From a well-maintained submarine escape trunk to realistic flight-deck emergency scenarios, Sailors get an edge during training

Commander, Naval Safety Center
Deputy Commander
Director, Afloat Safety Programs
Director, Communications and Marketing

RDML Kenneth Norton
Col. Glen Butler, USMC
CDR Rosario D. McWhorter
Mr. Derek Nelson

EDITORIAL STAFF

Editor Evelyn Odango
Graphics Allan Amen
John W. Williams
Webmaster Darlene Savage

EDITORIAL OFFICE

Commander, Naval Safety Center
Attn: *Sea Compass*
375 A Street
Norfolk, VA 23511-4399
Telephone: 757-444-3520, ext. 7220 (DSN 564-3520) / Fax: 757-444-6791

General email: safe-seacompass@navy.mil
Editor's email: evelyn.odango@navy.mil

AFLOAT SAFETY PROGRAMS DIRECTORATE

Commander, Naval Safety Center
Attn: Code 30
375 A Street
Norfolk, VA 23511-4399

Afloat mishap line: DSN 564-1562 / 7130; Fax: DSN 564-8636
Afloat safety email: safe-afloat@navy.mil

SUBMISSIONS

Submit your story ideas and articles to safe-seacompass@navy.mil. Send letters to the editor to evelyn.odango@navy.mil or write directly to: Commander, Naval Safety Center, ATTN: *Sea Compass*, 375 A Street, Norfolk, VA 23511-4399. Please refer to our "Writer Guidelines and Photo Requirements" available at http://www.public.navy.mil/navsafecen/documents/media/magazines/writer-photo_guidelines.pdf.

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Sea Compass is published twice yearly and distributed to ships, submarines, diving commands, shore-based commands, and DoD agencies. *Sea Compass* (ISSN 1550-1434) is published by Commander, Naval Safety Center, at 375 A Street, Norfolk, VA 23511-4399. Periodical postage paid at Norfolk, Va.

Postmaster: Send address changes to Commander, Naval Safety Center, Attn: *Sea Compass*, 375 A Street, Norfolk, VA 23511-4399.

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COVER PHOTO: Pressurized training for escape from a disabled submarine with current submarine escape immersion equipment (SEIE) is offered for all classes of U.S. Navy submarines in the Groton facility and is designed to familiarize submarine Sailors with escape procedures. Both initial accession and fleet readiness training requirements are supported. (U.S. Navy photo by Bill Kenny)

NAVAL SAFETY CENTER ANALYSTS AND TECHNICAL ADVISORS

AFLOAT SAFETY PROGRAMS

CDR Eduardo Sandoval Diving and Salvage Division Head	eduardo.sandoval@navy.mil
CDR Atkins Jinadu Surface Ship Division Head	atkins.jinadu@navy.mil
LCDR Richard Ray Submarine Division Head	richard.d.ray1@navy.mil
Mr. Steve Scudder Afloat Safety Analyst/Publications Review	steve.scudder1@navy.mil

SURFACE

LCDR Russell Goff Deck Analyst	russell.goff@navy.mil
LT Kevin Ginter Damage Control Lead/Mishap Investigator	kevin.ginter@navy.mil
EMCM (SW) Matt Kerridge Electrical Analyst	matthew.kerridge@navy.mil
GSCS (SW) Noah Lopez Main Propulsion/Gas Turbine Analyst	noah.lopez@navy.mil
HMC (SW/AWFMF) Randahl S. Benson Medical/Independent Duty Corpsman Analyst	randahl.benson@navy.mil
MMC (SW/AW) Esters Wright Main Propulsion/Auxiliary Analyst	esters.wright@navy.mil
GMC (SW) Barry Cramer Weapons Analyst	ramiro.salas@navy.mil

SUBMARINE AND DIVING

NDCM David Schoephoerster Diving/Salvage Assistant/MDV	david.schoephoerster@navy.mil
MMCS (SS) Arthur Sisk Submarine Damage Control Analyst	arthur.sisk@navy.mil
ETC (SS) Kevin Dawson Submarine Electrical and Mechanical Analyst	kevin.d.dawson@navy.mil

EDITOR'S NOTE

WHERE IS THE COMPASS?

If you've noticed the absence of the compass icon in the last two issues' cover banner, you're not imagining things. Following the lead of our flagship magazine, *Approach*, we have hidden the icon within the cover design. The hidden icon may be smaller than the compass pictured here. We hope you enjoy this issue, our sixth publication since 2011. Thank you for submitting your stories and articles that are invaluable to the Navy's safety-program management. Have a great holiday break and a safe winter season.



Evelyn Odango
evelyn.odango@navy.mil

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Who Is Your Safety Manager Assistant?

By LT Martelly Graham

In August of 2012, the Naval Safety Center released a message (COMNAVSAFECEN AFLOAT SAFETY ADVISORY 2-12 - AFLOAT SAFETY MANAGER ASSISTANT, 221307Z AUG 12) to explain one of the courses of action developed as a result of the Navy Executive Safety Board held the previous January. The VCNO signed a memorandum directing the creation of an afloat safety manager assistant (SMA) as a means of setting “a foundation that will ensure safety is embedded in the culture of all afloat forces without an increase in manpower requirements.” The message applies to surface forces and details the requirements for the safety organization aboard surface ships that lack a dedicated safety department (e.g., PC, LCS, MCM, FFG, DDG, CG, LPD, and LSD).

The SMA is intended to be on par in importance with the command’s motorcycle safety representative, drug and alcohol program advisor, command fitness leader, and command managed equal opportunity officer. The SMA should be a high-performing Sailor (E-6 or above) who will serve as the lead assistant to the ship’s safety officer. The officer or enlisted SMA provides leadership and training. The SMA also mentors division safety petty officers from all departments in their duties to ensure oversight of all command safety programs. **SC**

LT Graham is a weapons analyst at the Naval Safety Center.

The specific requirements for the SMA will be included in the upcoming revision to OPNAVINST 5100.19E, Navy Safety and Occupational Health Program Manual for Forces Afloat.

- Holding the position for a minimum of 18 months, although the goal for continuity and the best return on investment for the Navy is two years or more.
- Completing the afloat safety officer course (A-4J-0020) prior to or within six months of assignment.
- Enlisted SMAs must obtain NEC 9571 (safety technician) within six months of assignment.
- Enlisted SMAs shall be a “must promote” or better on their last evaluation.
- If operations do not permit the prospective SMA to attend formal training before assuming the position, the SMA must complete the naval safety supervisor course (NAVEDTRA14167F) prior to assignment. SECNAV, CNO, and NAVSAFECEN are aligned in strong support of the afloat SMA. Safety program compliance increases both operational readiness and effectiveness while reducing injuries and mishaps that negatively impact readiness and make us less effective warfighters.

Deficiency Becomes Training Material

By CDR Rob Stephenson

Prior to evolutions, our shipboard personnel often talk about safety walkthroughs with scripted scenarios to identify potential hazards. Complex scenarios are often integrated across various training teams to help broaden the scope of the training and provide realistic challenges.

During a recent general quarters scenario involving a fire in a CVN hangar bay, we discovered a flaw. The response team used the nearest AFFF (aqueous film forming foam) fire hose located behind the EE-rated forklifts being charged (designed to be spark-proof and work around combustible materials).

The team penetrated the barrier and accessed the fire hose located directly under the 440-volt chargers. Aviation Ordnanceman 1st Class Cartdell McCarns, who works in our safety department, caught and corrected this deficiency without damage to equipment or injury to personnel.

This is a perfect example of how a benign situation can change quickly during a drill scenario. Our integrated training team has since used this incident as a part of our safety walkthrough training. **SC**

CDR Stephenson is the safety officer aboard USS Harry S Truman (CVN 75). Photos courtesy of the author



Recommendation: Make EE charging stations a safety walkthrough scan item (440V chargers).





Bringing Squadron Safety Afloat

By CDR Ryan Dunn

Everyone knows that the purpose of mishap prevention is to save lives and prevent equipment damage. But what is the first necessary step in preventing something unpredictable? Knowing your people is a good start. You most likely already know that human error is the number one cause of mishaps. Although our Navy may be considered as the world's supreme fighting force with the most advanced technology, we must also identify our weaknesses as human beings. This is necessary to head off any potential mishap at the pass.

In my previous post as squadron aviation safety officer, I had to conduct mandatory evolutions as required by the Aviation Safety Program (OPNAVINST 3750.6R). These evolutions gave our commanding officer an unbiased look at the squadron's safety climate. The Naval Safety Center (NSC) culture workshop and squadron safety climate assessment surveys were great tools in giving my squadron CO a gauge on how personnel perceived the safety culture. As a new aviation safety officer aboard an aircraft carrier, I discovered that these great tools are neither required nor often implemented in the afloat environment.

Having just checked aboard my first CVN as head of the safety department, I had no idea what the safety culture was like aboard this ship. *USS Ronald Reagan*

(CVN 76) had just finished her docking planned incremental availability (DPIA). She was going into operational mode once again after more than 15 months in the yards.

Due to this transition, I felt it was the ideal time to implement squadron safety tools in the afloat environment. I did some digging and found out that no aircraft carrier had ever conducted a command assessment survey. With help from Safety Climate Assessment Survey expert Dr. Robert Figlock, we both concluded that the administrative support personnel assessment (ASPA) was the closest survey available to capture the different departments aboard a CVN. We had approximately 1,000 respondents to this survey. Although the survey provided very useful information via computers, I also wanted to bring personnel together in an open environment to talk about safety.

Navy Knowledge Online products such as presentations and videos can be valuable tools for safety training, but there is nothing like good old human interaction. When I was a J.O., one of my first skippers always seemed to be a step ahead of the department heads. He found time to be in the smoke pit interacting with his people and gaining the true pulse of his squadron. Unfortunately, over the years, technology has moved us farther away from the people aspect of the Navy.



Open discussions in the command safety focus groups (left) increase safety awareness on the flight deck. *U.S. Navy photos*

Identifying high-risk personnel and bringing them into an open environment to speak freely and candidly without fear of repercussion would be the best route to pursue. Again, we used squadron safety programs as a benchmark. Squadrons must request a periodic culture workshop from the Naval Safety Center. Although this workshop involves NSC personnel and reservists coming in from the outside to examine the squadron and conduct interviews, it gives the CO an unbiased snapshot of his or her safety climate through human interaction.

Why not implement command safety focus groups aboard the aircraft carrier based on lessons learned from the culture workshop program? We took 180 Sailors, pay grades E-5 and below, from all 19 departments aboard the ship and split them up into nine groups of 20 Sailors to conduct round-table discussions. Safety department E-5 personnel, equipped with a script of open-ended questions, served as facilitators to ensure the Sailors felt comfortable speaking up about their concerns. Safety department E-6 personnel were present to support the facilitators in case they needed guidance along the way.

The command safety focus groups have enabled the safety department to gain valuable information about the command's safety culture and help increase safety awareness. Sailors actively and freely communicate with one another instead of sitting in front of a computer

screen. Standing up in front of a group of their peers and guide discussions gave the E-5 facilitators valuable leadership experience.

The results were very successful — the participants felt empowered, their voices were heard, and they felt they were making a difference. In many groups, personnel wanted to stay longer to keep the discussion going.

How was all this information briefed to a very busy commanding officer?

After gathering all the information from both the survey and workshop, we presented the information to the commanding officer, executive officer, and department heads at the quarterly safety council. These tools gave the leadership an unbiased picture of the best management practices and areas that could be improved upon within our unit. Even if there were no surprises, it served as an affirmation that the CO had a firm grasp of his ship's safety climate. In our case, bringing squadron safety afloat proved to be very beneficial. **SC**

CDR Dunn is USS Ronald Reagan's (CVN 76) safety officer.

ONLINE

Safety Climate Assessment Surveys

<https://www.safetyclimatesurveys.org/mainpage.aspx>

The purpose of the culture workshop program is to provide insight to the commanding officer in the areas of trust, integrity, leadership, and communication within the command. Safety focus groups such as this, using the lessons learned from the culture workshop program, can also provide timely feedback to the command for improving climate, culture and operational effectiveness. However, this should not be

considered as a replacement for a workshop facilitated by a qualified culture workshop facilitator from the Naval Safety Center. Culture workshops are currently required to be completed once every 24 months for aviation commands, and are available for other commands at their request. This would include—but not limited to—ships, submarines, and aircraft carriers.

Submarine Sailors



Naval Submarine School senior instructors Frank Gorham (left) and James McCloud (top right) discuss with contractors the scheduled maintenance of the school's 20-foot diameter, 40-foot high, 84,000-gallon-capacity pool in the submarine escape trainer. The winter service period provides a break in the pressurized ascent training both enlisted and officer submarine Sailors undergo as part of their initial accession or during their skills assessment and enhancement training.

Article and Photos by Bill Kenny

Momsen Hall — the Naval Submarine School's submarine escape trainer (SET) in Groton — is a tangible and physical sign of the fundamental reassessment and repurposing of the U.S. Navy's submarine escape procedures.

As the mission of the Navy's submarine force evolved from a primarily "Blue Water" fleet to an expanded and extended role in every ocean of the Earth, it spurred development of a new training regimen and adoption of an innovative survival suit, both of which required a pressurized escape trainer to safely and

effectively deliver world-class instruction to submarine Sailors.

The survival suit, called the submarine escape immersion equipment (SEIE), replaced the iconic Steinke Hood. Composed of multiple layers of neon orange nylon separated by zippers and various plastic

Train in 84,000-Gallon Pool

shields, the SEIE completely protects submariners from both the water and the weather. A Sailor could potentially escape from a 600-foot depth and survive an extended stay in frigid waters.

The SET acclimates submariners to their escape suits and familiarizes them with pressurized submarine egress. At the core of Momsen Hall — named for Charles “Swede” Momsen, inventor of the earliest submarine emergency escape gear — is the Momsen Lung. This 84,000-gallon pool sits atop escape trunks called the LOT (lock-out trunk) and the LET (logistics escape trunk). The trunks simulate conditions a submariner would experience during an escape from a

submerged submarine. The trainer is compatible with all classes of Navy submarines, including Seawolf, Los Angeles, Trident, and Virginia.

Also in the four-story building are diving support equipment, pool operation equipment, and two recompression chambers. Momsen Hall also houses a two-story, 11,200 square foot administrative wing with classrooms, locker rooms, medical examination rooms, and staff offices that support every aspect of submarine escape training. **SC**

Mr. Kenny is the public affairs officer for the Submarine Learning Center in Groton, Conn.



Pressurized training for escape from a disabled submarine with current submarine escape immersion equipment, SEIE, is offered for all classes of Navy submarines in the Groton facility. Both initial accession and fleet readiness training requirements are supported by the submarine trainer. Navy Diver 3rd Class Toby Godwin, a member of the submarine escape trainer instructor team at Naval Submarine School, works the traveling line and assists a student's successful pressurized ascent. Navy Diver 2nd Class James Groom (at the ladder, rear) holds himself in readiness should additional assistance be required.

FLIGHT DECK EMERGENCY TRAINING:

New and veteran members of USS *Iwo Jima*'s crash and salvage team run through realistic, high-risk firefighting scenarios.

Story and photo by LT Jonathan Bacon

Damage control exercises at Naval Air Technical Training Center (NATTC) have taken a new level of realism, thanks to critiques by previous students. A flight deck crash and salvage team from USS *Iwo Jima* (LHD 7) came to NATTC (located at Naval Air Station Pensacola) for the specialized training.

During their week at the training center, participants received hands-on training in fighting flight deck fires, proper crash and salvage procedures, and safely lifting and moving damaged aircraft using a crane. New members got up to speed and veteran members refreshed their skills.

This was *Iwo Jima*'s first opportunity to go through the crash and salvage team training course following recent revisions. Post-course critiques by previous *Iwo Jima* team members were part of the impetus to update the course; this training demonstrated first-hand how their suggestions had changed the course.

One of the first changes that impressed the *Iwo Jima* Air Boatswain, Chief Warrant Officer Frank Jusino, was how much of the training was shifted from the classroom to the lab.

"I like how these changes cut out some of the classroom time and get our team right into the hands-on portion," he said. Jusino was also looking forward to the opportunity for his team to practice lifting and moving NATTC's inventory of "duds," or stricken aircraft.

"The opportunity to move around the 'duds' during the salvage training, and do it safely by the book, is part of what makes this training so valuable to my team," Jusino said. "There just aren't enough 'duds' up in Norfolk for us to regularly practice aircraft salvage lifts, so this training is a very important part of getting my team ready for flight deck emergencies."

As Real As It Gets

According to Jusino, the *Iwo Jima* team was conducting this training because they had turned over approximately 80 percent of their personnel.

"This team is extremely green, and this training will set them all up on a straight path in regards to their procedures and techniques," he explained.

"We also brought this team down here because we will get the best investment out of this. Most of these new Sailors will be on our team for up to five years, and bringing them here to train at this point means we can use this training experience as long as possible."

Aviation Boatswain's Mate (Handling) 3rd Class Logan Wyatt was one of the few members of the team who had been through the course before the revisions. He appreciated the changes made to the course. Wyatt also liked the decreased classroom instruction and the increase in hands-on instruction.

"I think the firefighting training is very important for our team," Wyatt said. "We can't practice fighting real fires like this on the ship. Being able to do this brings us closer together as a team, makes us more knowledgeable, and helps us depend more on our teammates."

The crash and salvage team training course was revised to increase the level of realism at the request of the fleet. NATTC's shipboard crash and salvage course leading chief petty officer, Chief Aviation Boatswain's Mate (Handling) Geoffrey Wyatt,

explained that the critiques provided by the *Iwo Jima* team after a previous visit provided some of the feedback which was used to improve the realism of the training.

"This is their first time through the revised course," Wyatt said. "They can now see their suggestions in action as they train with the mobile

aircraft firefighting training device (MAFTD). They use the A/S 32 P-25 firefighting vehicle to clear a path through the fire to the aircraft door. The team proceeds inside of the smoke filled MAFTD, retrieves 'Rescue Randy,' the simulated crewman, and egress the aircraft."

Another element added to the training allows the team to practice overhauling the fire using a thermal imaging camera to locate any remaining hot spots that need to be extinguished and

cooled. In addition, re-flash scenarios have been incorporated, where the fire starts back up after being extinguished.

"These changes, as recommended by the fleet, make the training more realistic. We conduct this realistic, high-risk training in a safe and controlled environment under the supervision of our crash and salvage subject matter experts, who have returned from the fleet to teach at NATTC," Wyatt said. **SC**

"WE CAN'T PRACTICE FIGHTING REAL FIRES LIKE THIS ON THE SHIP. BEING ABLE TO DO THIS BRINGS US CLOSER TOGETHER AS A TEAM, MAKES US MORE KNOWLEDGEABLE, AND HELPS US DEPEND MORE ON OUR TEAMMATES."

— Aviation Boatswain's Mate (Handling) 3rd Class Logan Wyatt

LT Bacon is with the NATTC Public Affairs Office.



Peril *at* Sea

By LT James Walsh

Service members routinely take on risk in everyday tasks. The level of danger can be masked by our extensive training or the frequency at which the tasks are performed, but the risk remains. One night at sea, those dangers nearly cost the life of one of our shipmates.

It was the first day underway on cruise. Most of us had deployed together the summer before and were excited to get back out to sea with nearly the same crew. We had to bring two helicopters aboard and traverse them into the hangar before we could even start thinking about the training events that were to take place the next day.

That day the wind was more than we would desire, but it was within the landing limits and the deck wasn't pitching or rolling. We landed the first helicopter, straightened it, folded the blades, and moved it into the hangar. We had a short break until the other helicopter arrived and was ready to land. The wind had picked up only slightly, but it was still within limits. Our flight crew was performing impeccably, so events continued as scheduled. With the second helicopter on deck, we proceeded to straighten it in preparation for the short trip from the flight deck into the hangar. Once again, everything went off without a hitch. An experienced flight deck crew is a beautiful thing, and we were looking good.

It was about 1900, and the sun had been down for more than an hour. At sea, away from urban lighting, it gets dark in a hurry. We could barely see the swells that were starting to pick up, and the wind picked up slightly from what it had been before. Collaborating with the bridge, we tried to get the winds within our

**Questions raced through my mind
as I hustled back to the helo
hangars. Was it one of our guys?
Did he have on his float coat? Did
it initiate? Who could it be?**

limit of 45 knots to fold the blades. The bridge team did their best to slow the ship, but the winds were on the cusp of our limits. Mother Nature didn't want to cooperate. Our detachment officer-in-charge decided not to push anything on the first day underway, so we secured the helo to the deck to wait out the winds. The flight deck crew used additional chains to fasten it to the deck in case we encountered heavier seas. I was the landing signal officer at the time. I secured from my station to brief the OIC on the condition of the aircraft and flight deck.

As I walked into the combat information center of the ship, I heard the call, "Man overboard." The first call was as generic as any other drill on the ship, and I started making my way to a telephone to call and muster with my division. Seconds later the announcement came again, this time including "This is not a drill." My heart sank.

Normal procedure after completion of flight quarters is to raise the nets, a job our maintenance

personnel handle. Questions raced through my mind as I hustled back to the helo hangars. Was it one of our guys? Did he have on his float coat? Did it inflate? Who could it be?

The hangar was bustling with activity. I pulled aside one of our maintainers and asked him, "Do we know who it is?" The name of one of our Sailors hit my ears and it stung like a smack in the face. One of the pilots had beaten me back to the helo hangar and started attaching his night vision goggles to his helmet in order to aid his vision on this cold, nearly zero-illumination night. There were a few people on the flight deck who were pointing and maintaining visual contact with a light a few hundred yards behind the ship. The light came and went with the swells.

The aft lookout, upon hearing our crew yell that we had a man overboard, hastily activated a smoke float and threw it toward the man. The ship raced to man the boat deck and set emergency flight quarters. The small boat recovery team found our Sailor and saved his life. Our shipmate only suffered minor injuries. The next day we would fly him back to shore, and he would soon be home with his wife and newborn baby.

That night and the following weeks I revisited my actions and those of my flight-deck crew. During the week before we deployed, I had run into that Sailor and his wife in the NEX. It was the first time I'd met his wife and his newborn baby. Seeing his spouse's face in my mind, I couldn't help but think that I put my crew at excessive risk that night by leaving the flight deck before they were done raising the nets. The conditions were marginal but didn't "feel" dangerous. Moreover, our experienced flight deck crew had operated frequently in similar conditions on the prior deployment using the same standard procedures.

Aviators frequently hear the saying, "NATOPS is written in blood." We see our manuals modified after incidents such as this one. Our detachment has since modified our procedures and coordination with the ship to protect our Sailors even further against the harsh conditions we face at sea.

I urge my fellow Sailors at sea and on shore to not become complacent in the fundamentally hazardous jobs we perform daily. If your procedures can be modified to increase safety while allowing effective mission accomplishment, then get that change routed.

.....
LT Walsh is with HSM-51.

Signs As Safety Tools? You Bet.

By ETC (SS) Kevin Dawson

The photo shows why battery wells have signs prohibiting metal tools longer than 7 inches. This combination wrench shorted across a battery terminal in a 450-volt DC battery and was nearly burned in half.

Safety signs are mostly associated with OSHA requirements in the workplace, such as eye hazards, noise hazards, trip hazards, and rotating equipment. A sign can warn about high voltage being present or a component with multiple power sources. Directional signs help crew members quickly respond to casualties.

These signs don't just check a block. They play a practical role of preventing injuries and making the crew aware of the dangers at the workplace. However, safety signs are sometimes posted as quick-fix band-aids after mishaps rather than being viewed as important safety tools.

The photo shown here dramatizes the results when safety signs are ignored, missing or misunderstood. Hazardous conditions routinely exist aboard ships. New Sailors must be made aware of all potential hazards that are present. They may have no idea of what could potentially be their "deadly shipmates."



These safety signs include everything from informational alerts to warning, security, fire prevention, general safety, walkways, hazardous material, and first aid. Ships are legally required to post, in every work center, appropriate signs for all dangers that may potentially cause harm to their crew or anyone aboard.

Signs must be easily recognizable, visually clear and require no explanation. They must be prominent and a reasonable distance from the hazardous area. Don't let them become just part of the woodwork. **SC**

ETC Dawson is a support systems analyst at the Naval Safety Center.

ONLINE RESOURCES

Afloat NAVOSH Checklist

http://www.public.navy.mil/navsafecen/Documents/Afloat/Surface/Rsrcs/Checklists/NAVOSH_Checklist.pdf

OPNAVINST 5100.19E

Navy Safety and Occupational Health Program Manual for Forces Afloat

RELATED ARTICLE

"Can You Escape After the Lights Go Out?," *Sea Compass*, Fall 2011, by DCC (SW/AW) John Ralston



Light Bulb Explosion

By SN Richard Vasil

Everyone knows to wear their PPE when doing things like grinding or spray painting. However, sometimes we forget to use PPE for mundane tasks.

I was changing a light bulb in the bo'sn locker, and I wasn't wearing eye protection. A zone inspection had found that the light-cover mounting bracket was upside down. The inspector also pointed out that the light cover was missing a screw.

Easy fix, I thought. The light was going bad anyway, so I decided to kill two birds with one stone by changing the bulb and putting a new screw into the light cover.

After changing the bulb, I had to screw on the middle mounting bracket (the bracket that was upside down) to secure the light cover. When I began to tighten the screw, the bracket began to push up against the light bulb. It exploded, sending powder and tiny shards of glass into my face and eyes.


Two things ran through my mind: What the heck just happened? I need to get to medical!

Not long after that, I sat in medical for 30 minutes with my face in an eye-wash station. I had a few small scratches on my cornea and a few painful days afterward.

If you haven't ever used an eye-wash station, it is an unpleasant experience. I sat face-down with water fountains blasting water in my eyes nose and mouth for what felt like an eternity. On top of that, my eyes felt like they were just clawed.

I learned a valuable lesson. I now always consider what personal protective equipment I need to wear, even if I am doing something that doesn't require an MRC or MSDS. I won't even think twice about putting on some safety glasses before changing a light bulb. **SC**

SN Vasil is with USS Bonhomme Richard (LHD 6).



De-Energized vs. Tagged Out

By AT1 Sherman Goodwin

The calibration laboratory (Cal Lab) aboard an aircraft carrier is designed for calibrating and repairing equipment that provides quantitative measurements. Common maintenance includes on-site calibrations performed in reactor and engineering spaces to minimize the time that critical systems are off-line. These maintenance tasks involve isolating and tagging out equipment to prevent damage and ensure the safety of Sailors doing the maintenance.

Aboard USS *Nimitz* (CVN 68), our maintenance process broke down while on deployment during an on-site calibration for a pressure switch in Main Machinery Room #1. The procedure should have been routine. During the initial scheduling, the gauge calibration petty officer (Cal PO) filled out an on-site request form. It stated that all equipment had been tagged out, tags were properly hung and work was ready to commence on a specified date. Just a walk in the park, right?

As work began, the subject matter expert (SME) was again asked if all equipment was properly tagged out. He assured the Cal Lab on-site team that it had been done. He showed them the danger tags that were signed by all required personnel and hanging where necessary.

As the maintenance technician began working on the switch, he received an electric shock when his finger came in contact with an energized portion of the plate switch. The technician immediately notified the collateral duty inspector (CDI) on scene. He went to medical where he received an EKG as a precaution and was released with no issues.

What had gone wrong?

The on-site calibration team began work upon verbal confirmation from the SME that the equipment was tagged out and authorized on the work action form. However, the authorizing authority and the SME failed to notify the on-site team that the equipment was still energized. Clearly there was an assumption that the term “tagged out” also meant “de-energized.”

Electrical safety guidelines are clearly identified in several instructions, noting the requirements for working on energized equipment. Another indication that the switch was not de-energized was the lack of a protective boundary and an authorization from the commanding officer to work on this equipment while energized.



The MRC

The maintenance requirement card outlining this maintenance lists electrical precautions in the event work needs to be done on an energized switch. However, the MRC does not mention the ability to omit any of these steps if the switch is de-energized. Therefore, PPE must be worn and safety precautions followed regardless of the condition of the switch.

The CDI failed to ensure that the technician had on PPE (rubber insulating gloves, insulated floor mat and face shield) because he had assumed the switch was de-energized.

The NSTM

The *Naval Ships' Technical Manual* (NSTM 300) outlines the procedures for working on energized and potentially energized equipment. This publication also details the PPE requirements and steps for ensuring that no voltage exists within a circuit prior to maintenance. An initial voltage verification (IVV) shall be performed by a qualified electrician wearing all required PPE prior to this circuit being deemed de-energized.

The maintenance technician did not perform the IVV, thus making him unaware of the additional PPE requirements and precautions.

[You can read Machinist Mate 2nd Class Pacifico Delafuente's article on "Shocking Deficiencies" on page 16, to get more insight on the planning stages of this evolution.]

Our crew learned a valuable lesson from this incident, and we have changed maintenance procedures.

- The on-site calibration form has been revised to state that the equipment has been "de-energized" as well as "tagged out" to eliminate any confusion.
- All required material, tools and equipment from all 9802 series MIPs have been ordered and will be stocked by the calibration lab; outside departments won't have to provide these materials.
- All calibration lab personnel and gauge calibration petty officers have received training on procedures and maintenance in accordance with the publications.
- An electrical safety video has been produced for the ship's crew to reinforce required electrical safety PPE and materials.
- For every on-site evolution, a qualified electrician is required to be on scene to perform an initial voltage verification (IVV) checks in accordance with the NSTM 300 and to ensure all electrical connections between calibration standards and equipment being calibrated are within specification.
- The Cal PO is required to communicate with AIMD to allow feedback on isolations and the scope of the maintenance. **SC**

.....
AT1 Goodwin is the leading petty officer in Shop 4, IM-3 Division of the AIMD aboard USS Nimitz.

Shocking Deficiencies



By MM2 Pacifico Delafuente

During calibration of a shipboard pressure switch, a maintenance technician aboard USS *Nimitz* (CVN 68) received an electric shock. What should have been a routine tag-out procedure turned into an electrical-maintenance lesson learned. Although this Sailor wasn't seriously injured, several maintenance procedural deficiencies prompted a thorough evaluation of the ship's AIMD Division.

During the planning stage, the maintenance calibration petty officer (Cal PO) developed work controls describing the scope of the maintenance and outlining a tag-out protocol. The tag out included mechanical and electrical isolation to protect both worker and equipment. However, the Cal PO didn't refer to the maintenance requirement card (MRC) for the isolation requirements. He based his work controls on one written in the past, which included the same tag out but intended for a different set up and working conditions.

After the Cal PO and the calibration maintenance technician had scheduled a time, the technician readied his equipment and ensured that the proper procedure was issued. For this type of maintenance, the MRC requires specific electrical safety PPE including rubber insulating gloves.

The maintenance technician — along with his work center supervisor — and the Cal PO met at the calibration site. Once the Cal PO had reassured the technician that the component had been tagged out, the technician prepared for his work on the component. Although the technician used some of the PPE, he felt the rubber insulating gloves were not needed because he believed that the component was tagged out.

During the set up for the pressure switch's calibration, the technician was attaching the ohmmeter to check for proper continuity when the switch was shut. But instead of checking for AC and DC voltage per the MRC, the technician placed the ohmmeter to resistance, which would not indicate the presence of

voltage. Furthermore, the technician had not done the initial voltage verification (IVV) checks outlined in the *Naval Ships' Technical Manual* (NSTM 300 Rev. 9). Had he done the IVV check, the technician would have been aware of additional PPE requirements and separate electrical safety precautions.

While attaching the connections from the ohmmeter to the switch, the maintenance technician received an electric shock. He immediately stopped and notified his supervisor, who suspended all maintenance work. The maintenance person went to medical for a mandatory evaluation and was later released with no issues.

Discrepancies involving work controls, tag outs, and maintenance and electrical safety practices contributed to this mishap.

During the work-controls process, no MRC was referenced and nothing was discussed with the maintenance technician to identify what would need to be isolated.

During the tag-out portion of the event, the authorizing officer was not briefed on the nature of maintenance work. This would have raised questions of whether or not the right electrical safety precautions were being taken, thus preventing the shock from occurring even though the tag out did not include electrical isolations.

It was a poor maintenance practice for a technician to not verify voltage and not use all the proper PPE.

This incident disqualified the technician as 3M 301 maintenance person. As a result, procedural changes and communication protocol have been implemented. **SC**

[You can read *Aviation Electronics Technician 1st Class Sherman Goodwin's* article on "De-Energized vs. Tagged Out" on page 14, to learn more about lessons learned from this evolution.]

MM2 Delafuente works in the AIMD IM-3 Division aboard USS *Nimitz*.

There's Nothing Minor About Electric Shock

HERE ARE A FEW MORE SAFETY TIPS

- It's not the voltage that kills you, but the amperage (current).
- Never work alone and make sure your safety observer is stationed at the emergency-cutoff switch (if possible) for the equipment on which you're working. Communication is paramount.
- Never work on a live circuit unless it is absolutely necessary and you have your CO's permission. Follow all precautions and wear the required personal protective equipment.
- Pay close attention to the safety training. If it wouldn't be necessary, it wouldn't be given. Follow the rules.
- Always report a shock. You might save someone's life.



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The Silent Hazard on the Flight Deck



U.S. Navy photo by MC2Gary Granger Jr.

By LCDR Hector Ubiñas

Spinning rotors, ordnance, ground support equipment, VERTREP — the list of hazards on any flight deck is endless. However, I never would have thought that a simple watertight hatch could prove just as dangerous to our highly trained flight-deck crew. Aboard USS *New Orleans* (LPD 18), we learned about this silent peril the hard way.

New Orleans' Air Department team was in the middle of a typical 10-hour flight window during our transit through the Western Pacific en-route to support 5th Fleet operations. The embarked Marine Corps helicopter detachment had been conducting functional check flights (FCF) and deck landing qualifications (DLQ) in preparation for our eventual entry into the Arabian Gulf. As we rotated our landing signalmen enlisted (LSE) crew through different flight deck stations, one of them had an unfortunate encounter with a door leading out to the flight deck. The LSE-qualified ABHAN was headed inside the ship for a much needed break from the action

on the flight deck. As she was closing the door, she left her hand on the frame and closed the armored door on her finger.

After being rushed to medical, the corpsmen controlled the bleeding and took an X-ray of her finger. The image showed she had fractured it. She didn't need surgery. Had it needed surgical intervention, she would have been flown off the ship and likely sent back to the mainland since the Amphibious Ready Group (ARG) does not have an orthopedic surgeon. Consequently, this would have had a debilitating effect on an already optimally manned flight deck crew where every Sailor is necessary for the ship to conduct flight operations.

Doors are like ladders on ships. They are silent hazards that are largely underappreciated, and they are particularly overlooked on the flight deck where we place our focus on the dynamic hazards (rotorwash, refueling evolutions, running engines) during our safety briefs prior to flight operations. With so many larger, more obvious hazards on the flight deck, we failed to appreci-

ate the less apparent hazards that are part of basic ship safety. They are briefed to all newly reporting personnel and refreshed annually thereafter for a good reason. Yet we did not give these hazards their due diligence and it could've cost us greatly had she needed further medical treatment.

The flight deck is a dynamic environment ripe with hazards, which can easily harm our Sailors and Marines if not properly taken into account. This mishap could have ended much worse for our LSE and Air Department. The young lady could have easily fractured more than just her finger and been placed on light duty for a longer time. Lucky for her, the injury was minor and she is expected to make a full recovery. She will be back on the flight deck in six weeks. No longer will our flight deck team overlook doors and not give them their due attention in terms of safety.

With 15,000-pound helicopters operating over the deck, forklifts busily zooming about, and the ever-present fear of being blown overboard, even the smallest of hazards can still prove just as potent. I know our flight-deck team will not easily forget this lesson. **SC**

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LCDR Ubiñas is the Air Boss aboard USS New Orleans (LPD 18).

The flight deck is
a dynamic
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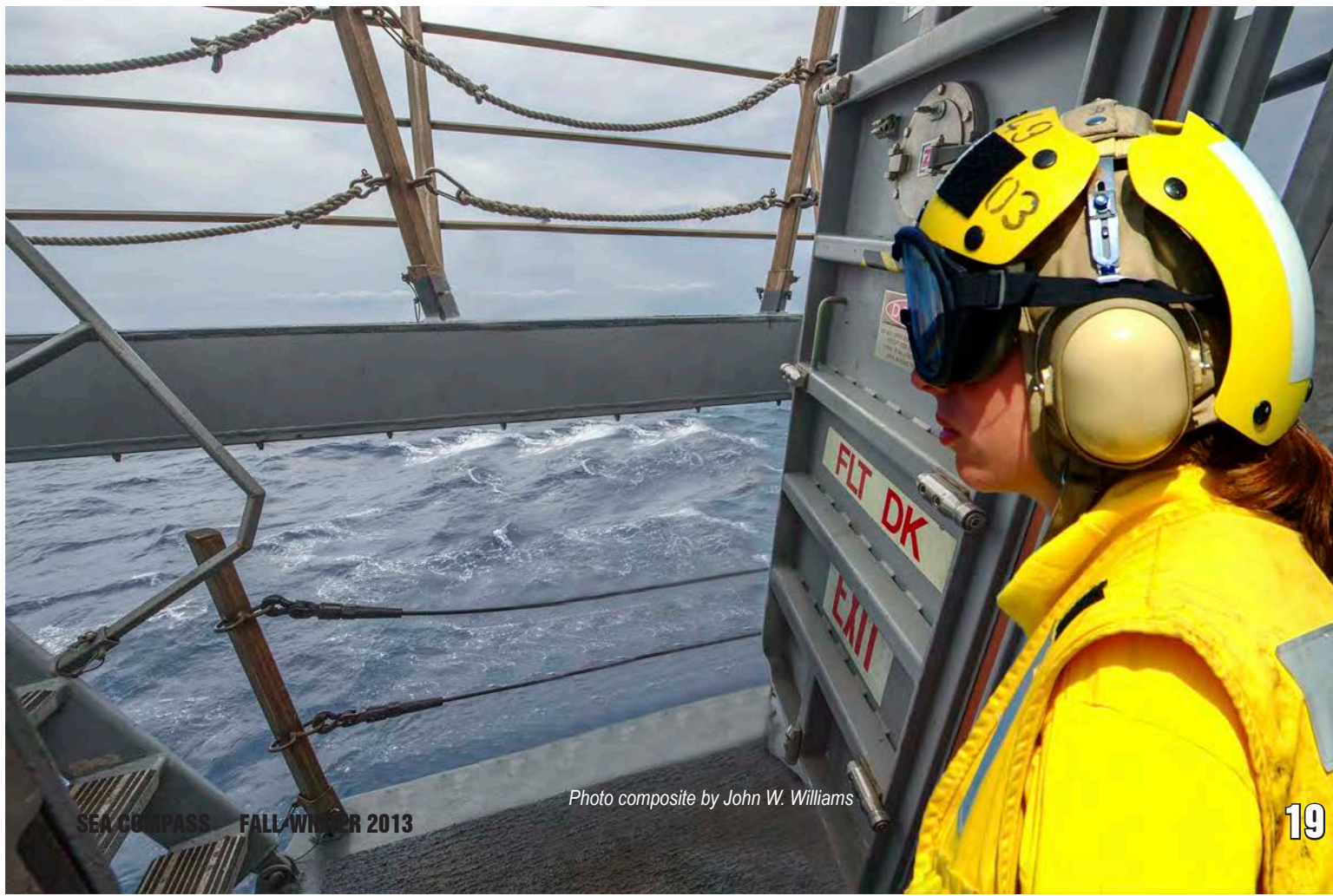


Photo composite by John W. Williams

B2BPMS is your basic guide on how not to fall a victim of complacency. It is a common-sense approach to keeping your ship on the right course. Have you ever taken a shortcut to save time, but instead, cost you and your ship time, resources or people? Share your short story with our readers so they might learn from your experience. Submit your article to safe-seacompass@navy.mil.

Do You Have the Right Working Lanyards?

By ETCS (SW/AW) Charlie Gauntt

Most ships have done a good job replacing their fall-protection equipment in accordance with message NAVSURFWARCENDIV PANAMA CITY FL 161233Z DEC 11. However, during some of our safety surveys, we're still discovering that the unauthorized, plastic-cover Dyna-Brake lanyards are being used as working lanyards.

We have worked with Naval Sea Systems Command and the supply system to get the correct working lanyard model number updated in the fall protection allowance equipage list (AEL). If you receive unauthorized lanyards, don't use them; work with your supply department to return them to the supplier.

Send any questions to safe-afloat@navy.mil.

.....
ETCS Gauntt is an electrical analyst at the Naval Safety Center.

Manning the bridge wearing fall protection equipment on USS *Dolphin* (AGSS 555).



U.S. Navy photo

Humidity Hazards

By DCC (SW/EXW) Justin Jones

Ships are always humid because of their operating environment. External areas are most likely to suffer the negative effects of corrosion and salt build-up. Most ships do an adequate job ensuring that monthly maintenance is done topside and in hangar areas, as referenced in the MIP 6641/004 Scheduling Aid 10 (SA-10). However, the additional requirements of SA-10 are often missed.

SA-10 says, "MRCs M-1R(C4SY), M-2R(W29Y), M-9R(C4TC) apply to high-humidity areas. High-humidity areas are considered all-weather decks, helo hangar areas, all main and secondary engineering, galley/scullery spaces, laundry spaces or any spaces/areas deemed by the unit to be high humidity."

ER09 work center supervisors and DCPOs must be aware of this scheduling requirement and ensure that the monthly maintenance requirement is being accomplished. Fire marshals and zone inspectors should inspect these items more frequently to ensure PMS compliance. Portable extinguishers are used more frequently and successfully at combating fires than hoses and installed firefighting systems. Therefore, it is most important that the portable extinguishers be kept in a reliable and ready condition. Immediate and successful fire suppression means a higher chance of preventing damage to equipment.

.....
DCC Jones is a damage control analyst at the Naval Safety Center.

Chains and Hoists

By GSCS (SW) Noah Lopez

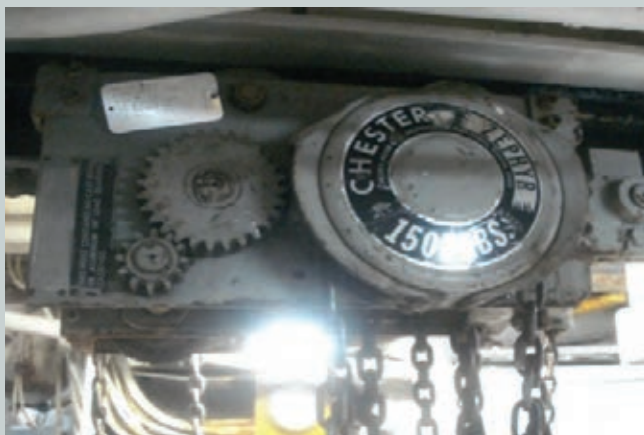
Are your maintainers doing PMS on your chain falls and monorail hoists? Does your work center have the associated MIPs?

These pieces of weight-handling equipment are important — and potentially dangerous — parts of various evolutions on naval ships and at shore facilities. It is important that they are properly maintained and working. But we continue to find problems during safety surveys. Common discrepancies include:

- 40 percent of the ships surveyed in FY13 had chain falls or monorail hoists that were not weight tested.
- The weight test data tags were not attached to the equipment.
- No PMS coverage or ownership.
- Weight capacities were not clearly marked.

PMS MIP 6645 contains basic information. GSO 665c says that material handling equipment and systems label plates must include capacity, weight-test data and the location of portable monorail sections during routine operations and shipboard damage control.

.....
GSCS Lopez is a main propulsion analyst at the Naval Safety Center.



Here are some do's and don'ts from OPNAVINST 5100.19E, paragraph D0204, regarding chainfalls and come-a-longs. Take care of the chain falls and monorail hoists and they will work well.

- Do not exceed weight for which the equipment was designed.
- Never kink, twist, or knot chains or slings, as these are among the greatest causes of failures.
- Never splice or shorten chains by bolting, wiring, or knotting.
- Clearly mark chain falls and come-a-longs to show the capacity. Do not exceed marked capacity.
- Do not use chain — whether new, repaired, or to which hooks or rings have been added — without meeting the requirements for inspecting or weight testing. Tag defective chains or slings or immediately cut up and properly dispose of them.
- Do not subject chains to sudden shock while in use. Jerky movements put severe strains on the chain.
- Keep chains free from grit and dirt. Keep brakes free from grease, oil, and rust. Adjust for wear as required.
- Do not drag chains or drop them on hard materials.
- Use attachments or fittings for chains of the type, grade and size suitable for service with the size of chain used.
- Do not operate unless the ratchet and pawl mechanism is engaged.
- Keep the equipment dry and rust-free. Lubricate only the load chain.



Potential **DANGER** in the Sink

By EMCM (SW) Matthew Kerridge

Our surveyors have found unauthorized waste-disposal units in galley deep sinks aboard various platforms. Although we haven't received a mishap report related to these units, they can seriously injure Sailors.

The opening of these unauthorized units have a larger sink flange and cutting blades less than 1.5 times the largest diameter of the sink flange opening. Disposal units without the required safety features place our Sailors at greater risk of injury due to exposed cutting blades and moving parts. Another risk is that some of the smaller units will run for one minute after you press the stop button.

Somat Co. scullery grinders are equipped with both a safety interlock switch and a cover that keeps Sailors from reaching their hands into running equipment.

According to COMNAVSAFECEN Afloat Safety Advisory 3-13 (091214Z APR 13), all ships using the smaller units should follow the procedure to danger-tag the unit and manufacture a guard to prevent someone from injuring their hands. **SC**

Reference: Units must comply with guidelines set by Underwriters Laboratories (UL) 430 and the American Society for Testing and Materials (ASTM) F917. The following units we have found don't comply with these guidelines: Fabwright, D.W. Boyd, Hobart, Insinger and American Delphi.

EMCM Kerridge is the fleet electrical analyst at the Naval Safety Center.





Time-Critical Risk Management

Because conditions can change with little or no warning, being ready allows you to manage that change and minimize risks associated with it.

- A - Assess the situation.
- B - Balance resources.
- C - Communicate to others.
- D - *Do and Debrief* the event.

Scan the code with your smartphone to visit the ORM web page. Data rates may apply.
<http://www.public.navy.mil/navsafecen/pages/orm/ORM.aspx>
U.S. Navy photo by MC2 Martin L. Carey



Confined Space Entry Checklist

By DCC (SW/EXW) Justin Jones

It is a good thing that Sailors don't typically work in confined spaces, because the hidden dangers are lethal. Whether it is a designated confined space (such as a tank and void) or a non-designated compartment that has limited access or egress, entering and working in such spaces is extremely hazardous and must never be considered routine. Confined spaces, especially in the engineering spaces, have access and egress points that can be inhibited by deck grating or machinery. Use the flow charts and checklists that are available in the *Naval Ships' Technical Manual* (NSTM 074 Vol. 3, Rev. 6) to ensure that your ship's Gas Free Engineering Program and confined-space entry are compliant. Here are some guidelines for filling out the "Closed Compartment and Void/Tank Opening Request Form" (page 74-C-13). Before crew personnel can perform any task, someone from the work center or division requesting entrance has to complete and route the form.

- 1 Describe the type of work to be done and list the personnel who will enter the space, the safety observers and the person in charge of the operation. Submit early to allow lead time and planning. The division leaders and the gas-free engineer (GFE) should address all hazards and ensure that all personnel on the list are qualified for the job.
- 2 The GFE should review the documents listed in the "Gas Free Procedural Working Guide" (page 74-C-27, NSTM 074). These items include:
 - *Previous gas-free certificates that were issued for the space or surrounding spaces to determine if hazardous atmospheres have been found in the area.*
 - *Damage control (DC) isometric diagrams that show the layout of the compartment and surrounding spaces.*
 - *DC book for information on ventilation systems, accesses, and system valves that may be encountered in the space.*
 - *Other diagrams (engineering or electrical) that may provide system information to support tagout of systems that could pose an additional hazard to personnel in the space.*
- 3 Once the hazards and controls have been identified, ensure that all equipment is ready for entry and use. Perform maintenance, or verify as completed, on all systems. Document current weight test data for harnesses and verify completion of required maintenance. Ensure that all SAR/SCBA components are ready for use, HP and LP air gauges are calibrated, primary air supply pack and reserve air supply pack cylinders are at or above 4,000 psi, and SCBA are at 4,500 psi. Ensure that primary and secondary communication systems are operating properly and that all personnel understand terminology and the planned communication path. Calibrate and test all equipment.
- 4 After completing step 3, open and evaluate the space. Ensure that barriers keep unauthorized personnel or onlookers away from the area. If flammable gases or vapors could be present, use non-sparking tools to open the manhole cover. Open the manhole cover and visually inspect the space. Note the distance to the bottom of the compartment or to any visible liquids in the bottom of the compartment. Test equipment must not become contaminated during the drop test. Perform the drop test and evaluate the space for safe entry of GFE-certified personnel who will do additional compartment testing. The GFE and an assistant — usually a GFE petty officer — should enter the space and conduct a thorough test of the space. Once complete, record results on the "Navy Gas Free Certification and Test Log." Based on the test results GFEs should list all requirements and recommendations. If additional information is required, use the continuation page also provided in NSTM 074. Record the time and date of the initial test; the initial test expiration time and date must not exceed eight hours. If additional testing is required, record results and log test and expiration times, as applicable, on the "Gas Free Certificate." If the compartment must remain open for work lasting longer than 24 hours, the GFE must issue a new certificate for the space. All recommendations and requirements must be conveyed on the new certificate at the expiration of the third re-test or re-certification.
- 5 After finishing the work in the space, follow the compartment close-out procedures outlined in the "GFE Procedural Working Guide." Return equipment to its readiness condition and stow for easy access in the event of an emergency.

DCC Jones is a damage control/firefighting analyst in the Afloat Safety Programs Directorate, Naval Safety Center. To receive weekly DC safety notes, send an email with your request to justin.m.jones1@navy.mil.

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1 Never enter a confined space before all hazards — atmospheric, engulfment and mechanical — have been identified and procedures have been developed to deal with them.

2 Always isolate the confined space from all unwanted energy sources or hazardous substances using blanking, blinding, double block and bleed, or lockout/tagout methods.

3 Always maintain proper mechanical ventilation in the confined space and make sure ventilation equipment doesn't interfere with entry, exit, and rescue procedures.

4 Never introduce hazards such as welding, cleaning solvents, etc., in a confined space without first making provisions for these hazards and incorporating the provisions into the Gas Free certificate.

5 Always monitor for atmospheric hazards (oxygen, combustibles, toxics) prior to and during entry.

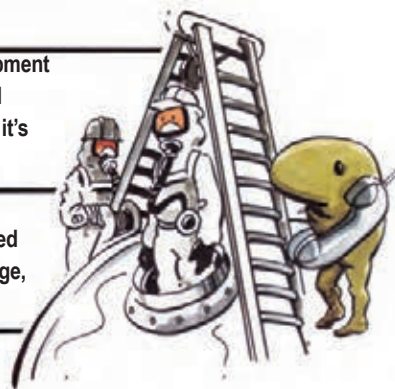
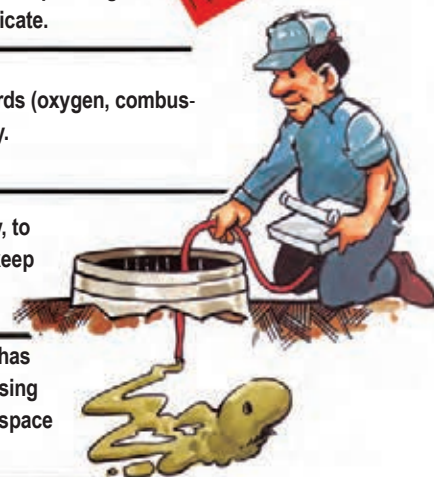
6 Always provide barriers, as necessary, to warn unauthorized personnel and to keep entrants safe from external hazards.

7 Never re-enter space once the permit has been revoked until the conditions causing the revocation are eliminated and the space is recertified.

8 Always provide constant communication between entrants and attendants, and remember to have backup communications if using two-way radios.

9 Always wear the personal protective equipment issued to you; be familiar with the use and limitations of that equipment; and be sure it's properly maintained.

10 Never attempt rescue of confined space entrants unless you are part of a designated rescue team and have the proper knowledge, skills and equipment to effect safe rescue.



**... AND NEVER, REPEAT NEVER,
ENTER A CONFINED SPACE ALONE!**

WHAT'S WRONG WITH THIS PICTURE?

Know the Risks Associated With Welding



By LCDR Richard Ray

What does this picture tell you? You can see that the Sailor in the foreground doesn't have the required PPE. The picture says at least two things.

- First, this is a very unsafe situation.
- Second, watch-team back-up and supervision failed.

The ship's safety officer, duty fire marshal and fire watch all can intervene to correct unsafe situations.

Does the at-risk Sailor understand the risks associated with welding? Does it matter that it's a small job and will only take a minute for a small bead of weld?

The Sailor in the foreground was apparently aware of the hazard of arc flash, because he was looking away from the light. However, looking away doesn't mean

he did not need eye protection, gloves and a welder's apron.

This picture is far from unique. About a year ago, we saw a photo of a Sailor and a naval shipyard worker who were both working aloft. The shipyard worker had on a safety harness, but the ship's force Sailor had determined that fall protection wasn't required due to the "unique environment."

While working at a small private shipyard, I saw something posted by the safety division that stuck with me. It was a caption at the bottom of the mirror in the men's head. The caption read, "Meet the person responsible for your safety." **SC**

We take submissions to "What's Wrong With This Picture." Please provide a brief narrative about the safety violations in the photo being submitted, any references related to correcting the errors, and your name (please provide an e-mail address for verification). Send your photo to safe-seacompass@navy.mil.

STANDARDIZING ELECTRICAL WORKBENCHES

By EMCM (SW) Matthew Kerridge, Fleet Electrical Analyst, Naval Safety Center

Our afloat safety surveys find that electrical workbenches are one of the items with the most discrepancies. Some of these shipboard workbenches are often downgraded to mechanical use because they're easy to maintain or there's no money to purchase the usual type.

Since *Naval Ships' Technical Manual* (NSTM) (300, Revision 9) was enacted in 2012, there have been some changes that some commands are still not following. Appendix H provides information and descriptive pictures with explanations to ensure electrical workbenches meet the standards. It states that there shall be, at a minimum, one electrically-safe workbench maintained onboard. It further states that all downgraded benches shall have a DFS (departure from specifications) in place and shall be authorized by the commanding officer vice the electrical officer.

Another important item is the foundation of the bench or the bench base-mount. The foundation requires a plastic laminate or electrical-grade rubber matting barrier in place. Figure 300-H-3 (illustrated) in NSTM 300 demonstrates this and addresses the requirement for a laminate along the horizontal surface underneath the cabinet itself.

HOW TO STANDARDIZE

How do you bring an electrical bench back up to standard from being a mechanical bench? In some cases, it is much easier to submit a job to have an outside

source complete the maintenance. If a command has the money to have ships' force complete the work, refer to the NSTM and the list of items with stock numbers in Appendix H, Section H.2 gives the procedure to cut and drill the benelex or arboron. If submitting a current ship's maintenance project (CSMP) work order, cite the NSTM to ensure the job gets done according to requirements. Appendix H also covers placards, nuts, bolts and the test panel with disconnect switches.

Once the bench is back up to standard and your command is following the guidelines delineated in the NSTM, break out the NSTM and MIP that covers workbenches and ensure you are in full compliance.

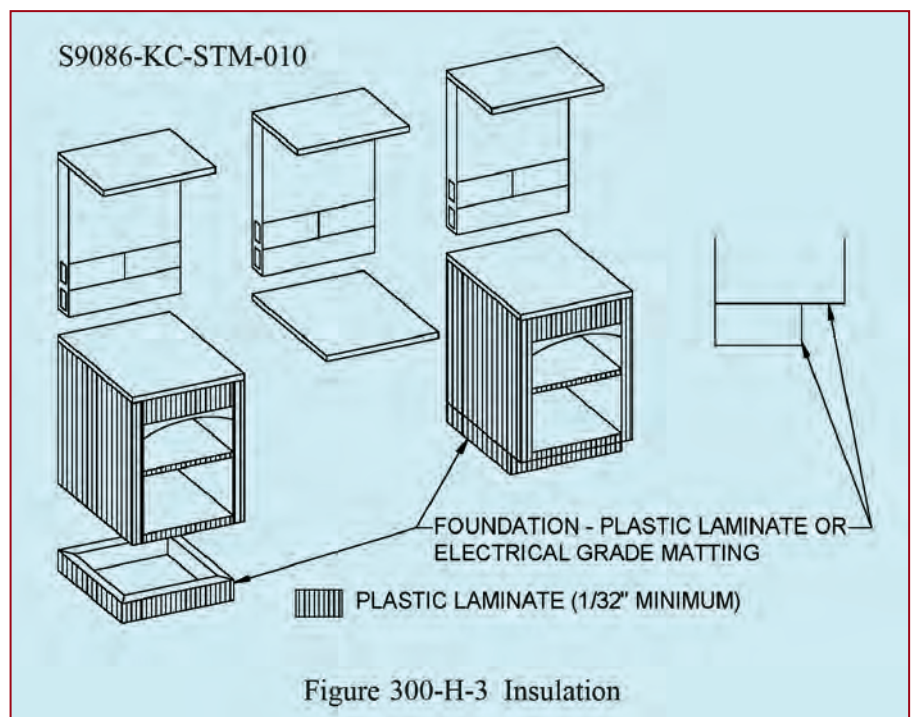


Figure 300-H-3 Insulation

What **Not** to Wear Aboard a Boat

By Mark Leishear

I was raised around water and have spent most of my 53 years around it, as well. It has always had a calming effect on me. So as the children moved away, my life migrated to my dreamed-about lifestyle aboard my sailboat.

Naturally, I make sure my guests know what to do if they fall into the water at the marina. I figured it would be simple. Depending on the tide, you can stand up and just wade to the dockside ladder. If you can't stand up, you have to swim. The ladder is about 40 feet away from the middle of a 60-foot pier.

The other factor in the drama I'm about to describe involves my choice of seasonal apparel. Predictably, during the winter, I wear thermal undergarments, t-shirt, sweatshirt, hoody, thick nylon jacket, and watch cap. I like to wear my steel-toed flight-deck boots, laced to the top around nice warm wool socks. I double-wrap and double-tie the laces.

One day in February, I stepped out to a relaxing setting as the sun was going down on the creek where my boat was docked. It was a clear day, a little chilly, with light winds. I looked into the dinghy hanging off the davits. I noticed some water on the seat. All it needed was a mild sway to drain it so it didn't turn into ice and mess up my waterline.

It was a routine chore: sit on the stern rail and push out with one foot. I started and decided to text my girlfriend, light a smoke and enjoy the view. Thanks to this multitasking, I wasn't paying attention to what I was doing. One foot on the dinghy turned to two. Then the

wooden gunnels on the dinghy gave way, the stern of the dinghy went down and so did I.

I immediately found myself submerged and scrambling for the bow of the dinghy still hanging onto the davit. Trying to climb the dinghy through the davit was impossible. The seats in the dinghy are lengthwise, not side-to-side. I rested for a bit and gripped the bow. Finally, I conceded. I need to go into the water and swim to the ladder.

The water was way over my head and I couldn't touch bottom. It took every bit of strength I had to surface. The weight of my wet clothes and boots were too much. I couldn't swim to the ladder. During Hurricane Sandy I had tied a line from stern to stern on the sailboat behind me as a precaution. That line came in handy. As I came to the surface, I grabbed it and started to the stern of the other sailboat. Soon I was between the sailboat and the dock. I kept my grasp on the line as I reached for the dock. The cleat was accessible, but I still couldn't pull my soaking body up on the pier. I hung on to it as I racked my brain for another plan.

I rested on the dock lines wrapped around my shoulders. My breathing was very heavy; I could hear my heartbeat in my head. My calves began cramping and, as the sun went down, the cold was affecting me. I tried to relax and kept telling myself that I was not going to drown. My energy was fading fast, but I knew I had to get out of the water soon.

I tried to raise my legs onto the other dock lines; they wouldn't raise an inch. So I went under and

grabbed my left leg. My grasp was now ineffective — four fingers were acting as one and the thumb was the pincher. I pulled up my left leg and laid it on the dock lines. That little exertion made me start panting and made my heart start racing again. I leaned back and tried to relax. Then I pulled the right leg over, stretched out on the dock lines and rolled onto the pier.

I felt sick, but I forced myself to get up and rush aboard my boat. I stripped off my clothes and jumped in my berth to warm myself. My body began to shake and the cramps on my calves weren't going away. I was afraid I was going into shock.

I made some coffee and gulped it down, then put some soup in the microwave. I got on the computer to send an email to my girlfriend. I needed to let her know that my cell phone was ruined when I fell overboard. She told me that an hour and 15 minutes had gone by since I had texted her. I assumed I'd been in the cold water for about 50 minutes. I took two aspirin, went to bed about 1930 and slept until 0830 the next day. My

legs felt like I had done too many squats with too much weight. There were bruises behind my knees. My back was tender from armpit to armpit, from resting on the dock lines.

Later, as I walked by the dinghy hanging of the stern of my boat, I just didn't feel like fooling with it. I looked at all my clothes for boating and clothes for work. They didn't even compare. I knew I needed shoes or boots that came off fast — maybe deck shoes or a pair of those lobster deckhand boots. My jackets were heavy. I should have worn my lightweight jacket.

I also have re-evaluated my dockside overboard plan. Now at each dockside cleat I have a minimum of bitter end to go over the pier and be able to form a loop to act as a stirrup. I could very easily slip my foot into the stirrup and pull and push myself onto the pier. This works well for a floating dock, since it does not accommodate swim ladders like a usual dock. **SC**

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Mr. Leishear works at VX-23, Patuxent River, Md.

The water was way over my head and I couldn't touch bottom. It took every bit of strength I had to surface.



Illustration by John W. Williams

Boat Refresher

Good for all ages, experience

By John Scott

After having spent 27 years owning and operating small boats, I found out that I had to take a mandatory training class. Would I learn some things that I didn't know already? I was curious.



Photo courtesy of the author

Most importantly I was made aware of the naval vessel protection zone, in which boaters must operate at minimum speed within 500 yards and contact the Navy ship and then pass no closer than 100 yards.

Thirty-six states have mandated some form of required boater-safety training. Not surprisingly, coastal states where the Navy tends to operate are well represented on that list (with the notable exception of California).

I purchased my first boat shortly after entering the Navy at age 22. I thought that instead of buying one of those dangerous ensign-mobiles or a just-freshly-made-popular-by-*Top Gun* Kawasaki Ninjas (movie buffs can now place my age at 49), I would get a used boat.

Drawing on that Navy can-do attitude, I bought it without even owning a tow vehicle. That's what friends are for, right? Soon after I bought the first of four tow vehicles that has spanned the 27 years. The first three had manual transmissions and weren't rated for the full load of my boat and trailer, but that is a separate safety article.

Fast forward 27 years and a whole slew of boat-ownership safety sea-stories later (like the one and only time I forgot to put the plug in the bilge was in 48-degree water with my newborn daughter in her car seat strapped to a chair). I am now a cautious, experienced and skilled operator. Virginia's requirement is being phased in by age. Technically, I wasn't due but I wanted to get it done as an example to my children and before my old-dog brain can't learn any new tricks.

I looked at the various options: one-day classes, two-day classes, free and paid on-line classes, and even a "challenge exam." I decided on a free on-line course that forces a minimum of 24 seconds spent on each page in order to meet the minimum three-hour time requirement. Most screens had more than 24 seconds on material, so the countdown clock had little bearing on my progress. I estimate it took six hours to complete the six sections.


The quiz items were definitely covered in the material presented but there were also items too nit-picky to be stored anywhere other than short-

term memory. I did learn some valuable items, such as that the gentleman from U.S. Power Squadron who boarded my vessel last month for a "courtesy inspection" was wrong in writing me up for not having proper signaling devices. These devices aren't required for my boat on inland waterways. Besides, based on a quick query of the WESS database, more people are hurt by signal flares than are saved by them.

Most importantly I was made aware of the naval vessel protection zone, in which boaters must operate at minimum speed within 500 yards, contact the Navy ship and then pass no closer than 100 yards. That could have been the ultimate safety tip for the motor boat this past 4th of July holiday that closed a CG to 150 yards at high speed in the Thimble Shoals channel. That guy was lucky the CO decided to release just an OPREP, instead of a burst of 50-caliber rounds.

Overall, the requirement is good. The training was a valuable review of my past training and experience along with a fair amount of fresh information (who knew you can't toss the crust of your sandwich in the water?). Frankly, I think it would be a pretty tough class for a 22-year old with no experience, which I guess is the point.

Note:

Various states have numerous permutations requirements based on age and vessel types. I suggest the Boat U.S. Foundation for Boating Safety and Clean Water as a comprehensive source for your state's requirements (<http://www.boatus.org>). 

Mr. Scott is the data management and services division head, Naval Safety Center.

About the photo: Unless she gets her Virginia boating safety certificate by next July, my wife won't be able to pull me waterskiing.

Recognizing and Preventing

When winter weather conditions become severely cold, prolonged exposure to low temperatures can result in frostbite and hypothermia.

Know how to protect yourself whether you're working on the flight deck, skiing on the slopes or shoveling snow after a blizzard. Sailors on ships or flight-duty status are trained to protect themselves by wearing the anti-exposure suits. Folks who are active in winter sports know the right gear when heading outdoors. Those who perform routine winter-preparedness chores must also protect themselves from cold-related illnesses.

Would you be ready for the worst? If you survive a man-overboard situation, what would you do after getting out of the water? If you must eject from an aircraft during a winter storm, would you be able to survive the elements? If you rescue someone who fell into a frozen lake, what could you do to help? Here are some tips to help you spot and put a halt to these winter hazards.

How to avoid cold-related illnesses

Dress properly. Wear several layers of loose-fitting clothing to insulate your body by trapping warm, dry air inside. Numerous modern, synthetic materials do an excellent job at trapping warm air and resisting dampness.

Exposed skin, such as the head and neck, lose more heat than covered skin. Your cheeks, ears and nose are the most prone to frostbite. Wear a hat, scarf and turtleneck sweater to protect these areas.

Avoid frostbite and hypothermia when you are exposed to cold temperatures by wearing layered clothing, eating a well-balanced diet, and drinking warm, non-alcoholic, caffeine-free liquids to maintain fluid levels.

Frostbite: What to look for

The extent of frostbite is difficult to judge until hours after thawing. There are two classifications of frostbite:

- **Superficial frostbite** is characterized by white, waxy or grayish-yellow patches on the affected areas. The skin feels cold and numb. The skin surface feels stiff and underlying tissue feels soft when depressed.
- **Deep frostbite** is characterized by waxy and pale skin. The affected parts feel cold, hard, and solid and cannot be depressed. Large blisters may appear after rewarming.

What to do

1. Get the victim out of the cold and to a warm place immediately.
2. Remove any constrictive clothing that could impair circulation.
3. If you notice signs of frostbite, seek medical attention immediately.
4. Place dry, sterile gauze between toes and fingers to absorb moisture and to keep them from sticking together.
5. Slightly elevate the affected part to reduce pain and swelling.
6. If you are more than one hour from a medical facility and you have warm water (102 to 106 degrees Fahrenheit), place the frostbitten part in the water. If you do not have a thermometer, test the water first to see if it is warm, not hot. Rewarming usually takes 20 to 40 minutes or until tissues soften.

Frostbite, Hypothermia




What not to do

1. Do not use water hotter than 106 degrees Fahrenheit.
2. Do not use water colder than 100 degrees Fahrenheit since it will not thaw frostbite quickly enough.
3. Do not rub or massage the frostbite area.
4. Do not rub with ice or snow.

Hypothermia

Hypothermia occurs when the body loses more heat than it produces. Symptoms include change in mental status, uncontrollable shivering, cool abdomen and a low core body temperature. Severe hypothermia may cause rigid muscles, dark and puffy skin, irregular heartbeat and respiration, and unconsciousness.

Treat hypothermia by protecting the victim from further heat loss and seeking immediate medical attention. Get the victim out of the cold. Add insulation such as blankets, pillows, towels or newspapers beneath and around the victim. Be sure to cover the victim's head. Replace wet clothing with dry clothing. Handle the victim gently because rough handling can cause cardiac arrest. Keep the victim in a horizontal position. 

Visit the Naval Safety

Center winter resources page at <http://www.public.navy.mil/navsafecen/pages/media/seasonal/index.aspx>.

The main deck aboard the U.S. 7th Fleet USS *Blue Ridge* (LCC 19) is covered by snow during a winter storm in Yokosuka, Japan. *U.S. Navy photo by MC2 Mel Orr*



“I urge my fellow Sailors at sea and on shore to not become complacent in the fundamentally hazardous jobs we perform daily. If your procedures can be modified to increase safety while allowing effective mission accomplishment, then get that change routed.”

— LT James Walsh
“Peril at Sea”