

SEA & SHORE

FALL 2007

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- ▶ **Negligent discharges**

... plus features on

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Mishaps waste our time and resources. They take our Sailors, Marines and civilian employees away from their units and workplaces and put them in hospitals, wheelchairs and coffins. Mishaps ruin equipment and weapons. They diminish our readiness. This magazine's goal is to help make sure that personnel can devote their time and energy to the mission, and that any losses are due to enemy action, not to our own errors, shortcuts or failure to manage risk. We believe there is only one way to do any task: the way that follows the rules and takes precautions against hazards. Combat is dangerous and demanding enough; the time to learn to do a job right is before combat starts.

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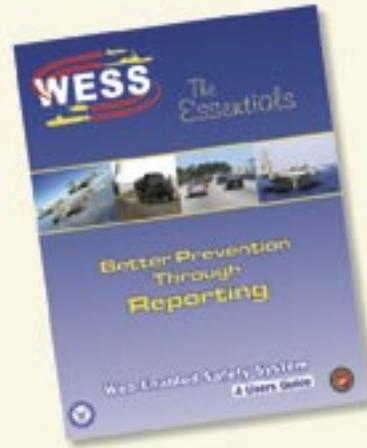
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FRONT COVER

An electronics technician climbs a ship's mast to do predeployment maintenance on a satellite system. [Note: The Sailor shouldn't be wearing a hat.]



Photo by MC1 James E. Foehl



This new guide to using WESS to report mishaps is on the street, and you should have a copy by the time this issue of *Sea&Shore* reaches your hands. If you haven't received this guide and would like one, contact April Phillips, the Naval Safety Center PAO. Address your e-mail to SAFE-PAO@navy.mil.



The Naval Safety Center has begun issuing one-page Preliminary Loss Reports (PLRs) for all off-duty and traffic fatalities. The goal is to increase awareness of these costly (and preventable) mishaps and to help high-risk Sailors/Marines to understand the impact of decisions made on- and off-duty.

Each PLR contains a brief narrative about the mishaps, updated trends comparing Navy, Marine and combined rates for the past three years, and a series of suggested actions to help avoid similar mishaps.

If you'd like to automatically receive these PLRs, e-mail our public affairs officer at safe-pao@navy.mil.

Check Your Tools!

By PR2(AW) Brian Arner,
HSC-3

When you hear the word “tool,” you automatically think of a wrench, ratchet, hammer, screwdriver, or other item indicating mechanical maintenance. You do a thorough ATAF (“all tools accounted for”) at work, but have you ever stopped to look at the condition of your tools for cooking?

Pots, pans, electrical appliances, and utensils should be considered invaluable tools of daily use. Therefore, shouldn't you probably apply some minor tool-control processes to your kitchen inventory? Take a minute to look at your cabinets and drawers; you may be able to stave off disaster.

In my case, it started as an easy Saturday evening with family visiting from out of town, which called for a fancier-than-normal dinner. I started a ham cooking in the oven and put potatoes into a large aluminum pot with water to boil. After several minutes, I noticed the water still hadn't heated up, so I felt for heat at the base of the pot. “No problem there,” I thought. The burner was on high, and the new electric range didn't take long to heat.

Between visiting with a cousin and trying to work around my 3-year-old, I didn't notice the pot was beginning to smoke lightly. The moment I turned my back, “it” happened—with an electrical crack that sounded like lightning, a bright blue flame shot out from the base of the pot. The fire extinguisher automatically kicked on, and all eyes fell on me.

Luckily, the flame was doused instantly, but flashes of electricity continued arcing all over my water-covered stove. I quickly secured power to the range top and oven, grabbed some cloth potholders, and swung the pot into the kitchen sink. Let me clarify here that no potatoes were harmed in the making of this mishap.

After cleaning up all the water and transferring what was left of dinner into more pots and pans, we discovered what had happened. The base of the large aluminum pot had melted on the element, causing water to soak the electrically powered coil, which then ruptured and short-circuited through the standing water. Fortunately, no one was hurt. The only damage was a gaping hole in the bottom of the pot,



a ruptured heating element, and one short-circuited range. Thankfully, we had dodged the potential for an electrocution.

The moral of this story is simple: Take care of your tools and keep an eye on them, whether you're fixing aircraft or dinner. 🚫

Resources:

- www.cpsc.gov/library/foia/foia99/idi/cookware.pdf [Re:FOIA Request S9050019: Aluminum Cookware and Melting Incidents/File Search 1990 to Present]
- <http://www.theworkshop.net/CTVGoodMorningCanada/appliances/appliancemaint.htm> [Appliance Maintenance Tips To Help Around Your Home]

Have You Read the Owner's Manual?

By Jonathan Bach, CIH, CSP, PE,
Naval Submarine Base, New London

During my Air Force days (sorry), I had the unfortunate task, on more than one occasion, of investigating the cause of deaths in military families. These deaths occurred in their homes while they were sleeping.

I remember one case in which a mother and father died in their bedroom, leaving the kids without parents. They died because they didn't read the instructions for the UL-approved, American-made, high-quality, portable, kerosene heaters they were using. Those instructions said to open doors and windows to prevent carbon-monoxide poisoning.

"Wait a minute!" perhaps you're saying. "Why would you open doors and windows when you're trying to heat the place?" Granted, it seems illogical, but read the owner's manual for any kerosene heater, and you'll find it says you need plenty of fresh air coming in to keep the space safe. To you I say, "Read the manual."

"But, they're UL-approved!" perhaps you're still arguing. Yes, they are—if you knock them over, the flame is supposed to go out so it doesn't cause a fire. What about the stuff kerosene heaters put into the air, though? Again I say, "Read the manual."

At the same time these folks died, a consumer's magazine tested such units and advised pregnant females and young children not to use the heaters at all. Young children especially are susceptible to carbon-monoxide poisoning.

If you're faced with a loss of power and have to run a kerosene heater just to keep the pipes from freezing,



I seriously urge you to consider living somewhere else while the heater is running. If you can't follow that advice, then please read the manual and keep plenty of fresh air in your home.

I can't emphasize enough the deadly consequences of carbon-monoxide poisoning. In another case I once investigated in off-base housing, a permanently installed water heater had an exhaust pipe that ran through the house. There was just one problem. The pipe had a very small hole in it—in the bathroom where a young mother was soaking in the tub, with the door locked.

After a while, her toddler banged and banged on the door, calling for mommy. It was too late, though; she already was dead from carbon-monoxide poisoning.

Please pay attention to safety messages, and before you use anything that burns fuel, read the owner's manual. ■

Homes with any type of furnace or water heater, or with a garage attached, should have carbon-monoxide detectors, as well as smoke/fire detectors.—Ed.

The author is a supervisory industrial hygienist.

Resources:

- <http://www.epa.gov/iaq/pubs/coftsht.html> [Protect Your Family and Yourself From Carbon-Monoxide Poisoning]
- <http://www.iii.org/media/publications/brochures/kerosene/> [Kerosene Heater Safety]

Slips, Trips and Falls: A Big Problem

The latest Bureau of Labor Statistics (BLS) rankings available show falls second only to highway crashes for causing the most unintentional deaths. Meanwhile, the National Safety Council ranks falls behind motor-vehicle crashes and poisoning, and if you look hard enough, you may find even other results. The bottom line is this, though: In the workplace, at home, or in the community, slips, trips and falls (whether from the same level or a different height) are a serious matter.

Recent studies show that homes alone account for 20,000 deaths and nearly 25 million injuries every year. About 80,000 of these injuries cause lifelong damage.

The goal, of course, is not to slip, trip or fall, but what if you just can't avoid it? Here are some tips to keep in mind:

- Tuck in your chin, turn your head, and throw up an arm. It's better to land on your arm, than on your head.
- While falling, twist or roll your body to the side. It's better to land on your buttocks and side, than on your back.
- Keep your wrists, elbows and knees bent. Don't try to break the fall with your hands or elbows. While falling, the objective is to have as many square inches of your body touch the surface as possible to spread out the impact.

After a fall, calmly assess the situation, and determine if you're hurt. Get up slowly, and if you feel injured and can't stand or walk, don't panic. Call for assistance (if serious, call 911). If you're not injured, rest for a while and regain your composure before getting up. If the fall occurs at work, make sure you notify your supervisor.

One device that figures into many falls is a ladder. There are some things you can do to avoid problems, starting with inspecting a ladder each time before you use it. Ensure the rungs are in good condition and free from cracks or broken parts. Never paint a wooden

ladder because the paint can hide possible damage. If you use a stepladder with a spreader frame, fully open the ladder and lock the bars in place, as designed. Never use a folded stepladder leaning against a wall.

Most importantly, select the right ladder for the job (correct type, height and material—fiberglass ladders for electrical work, for example). Maintain three points of contact while on the rungs, and never try to overextend your reach up or to the side. Stay off the top two steps of a folding ladder and the top four rungs of an extension ladder. Use a bucket or tool belt to keep your hands free, and use a spotter to steady the ladder from below. Never let another person climb the ladder you are using.

Always face the ladder, and remain centered between the rungs. A good rule of thumb is to keep your belt buckle between the rails to avoid overreaching. The ladder's base should be on a clean, dry, level surface, with the base of an extension ladder positioned one foot away from the wall for every four feet of ladder height.

Here are some tips designed to help you evaluate the risk of slip, trip and fall hazards outdoors, in the office, and at home:

Outdoors

Keep walkways, parking areas, stairwells, and sidewalks well-illuminated, level, and free of obstructions, snow, ice, or standing water.

Make sure water drains away from parking areas and walkways.

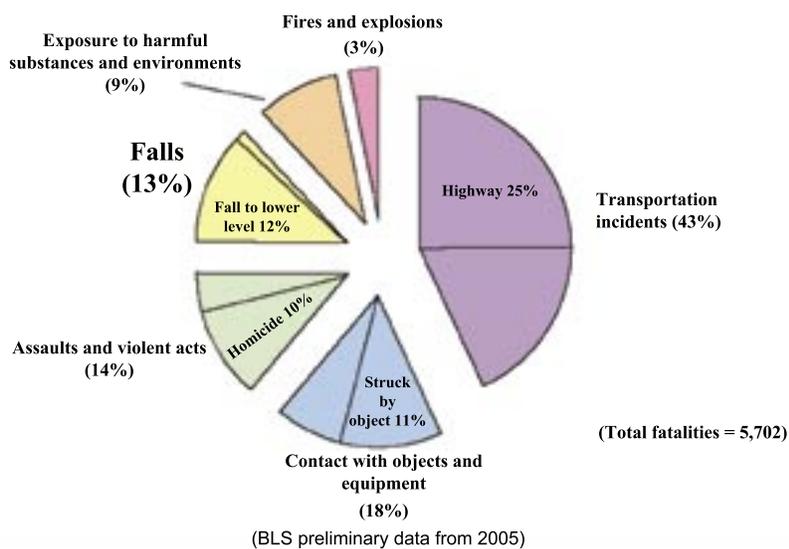
Mark changes in elevation or surface levels.

Inspect steps and walkways for broken or loose bricks, cement or stone.

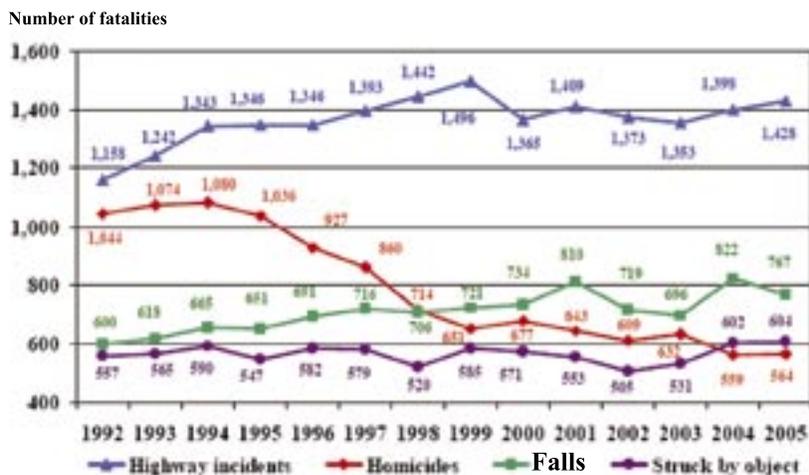
Office

Ensure file and desk drawers open and close easily.

Fatal Work Injuries



The Four Most Frequent Work-Related Fatal Events 1992-2005



Inspect furniture and fixtures for sharp edges.
Keep aisles and passageways clear for easy movement.

Provide floors with non-slip surfaces.

Maintain non-slip treads on stairways; also make sure they are equipped with standard handrails.

Ensure generator or battery-powered emergency lighting is available in stairwells and areas without natural light.

Provide small flashlights at every desk for emergency evacuation.

Maintain adequate illumination in all areas during normal, non-emergency operation.

Equip all stepstools and stepladders with safety tread.

Secure all electric cords and telephone and computer cables to prevent trip hazards.

Home

Protect all stairs and steps with a full-length handrail on both sides.

Put non-slip mats on the floor in every bathroom.

Install grab bars in showers and bath tubs.

Use maximum wattage bulbs (as marked in fixture) in hallways and stairways, with switches at both ends.

Keep a sturdy stepstool or ladder available for out-of-reach items.

Tuck away phone and electric cords in halls and pathways but not under carpets.

Install window guards and stair gates in homes with younger children.

Use nightlights in hallways and bathrooms.

Avoid using kitchen and bathroom cleaners that leave a slippery residue. ■

Resources:

- <http://www.cdc.gov/nasd/docs/d000001-d000100/d000006/d000006.html> [Preventing Injuries From Slips, Trips and Falls]
- <http://www.osha.gov/SLTC/smallbusiness/sec15.html> [Walking-Working Surfaces [Slips, Trips and Falls]
- <http://www.nsc.org/library/facts/eldfalls.htm> [Preventing Slips and Falls in the Home]
- <http://www.nsc.org/library/facts/kidfalls.htm> [Keeping Kids Safe From Home Falls].



Big Problem = Big Money

Coast Guard photo by PO1 Danielle DeMarino

A 2005 insurance-company study concluded that workplace slips, trips and falls account for nearly 14 percent of all costs (medical, legal and other) related to workplace injuries. The National Safety Council (NSC) estimates that these expenses total approximately \$70 billion per year, excluding the impact and expense of reduced worker productivity when injured workers have to take days (or sometimes months) off work. This lost time typically averages one to two weeks.

In the case of a death on the job, the average cost has been estimated at \$1.15 million. Add to these figures the personal and family costs and trauma, and it's evident that slips, trips and falls should be avoided. In 2005, the latest year in which figures are available from NSC, 17,700 people lost their lives in falls from one level to another or on the same level. Not

included in that number were falls in or from transport vehicles, or those that occurred while boarding or alighting from the vehicles.

Concern over these numbers has been a driving force for change. The National Safety Council and the Department of the Navy are working to enhance awareness of the crippling impact falls have on the workforce. We're educating workers through various community-service projects, preventive on-the-job training, and improved dialogue with employees. ■

Resources:

- http://www.safetycenter.navy.mil/osh/downloads/Slips_trips.doc [*Slips, Trips and Same-Level Falls Within the Navy*]
- <http://www.nsc.org/issues/fallstop.htm> [*Falls in the Home and Community*].

How Navy People Are Taking a Tumble

According to a 1 May 2006 report done by the CNO Fall-Protection Working Group, slips, trips and same-level falls accounted for nearly 17 percent of all Navy mishaps in FY2002, 2003 and the first six months of 2004 [see accompanying charts]. These mishaps injured Sailors and their civilian counterparts in many different locations and situations.

To reduce the number of slips, trips and falls, the Navy is taking a proactive approach in identifying factors that lead to these mishaps. 

Navy Slips, Trips and Same-Level Fall Mishaps			
Type of Fall	FY02	FY03	FY04*
Fall down stairs or steps	137	212	103
Fall from floor, deck or ground level	60	19	5
Fall from ground level to lower level	15	4	1
Fall from loading dock	6	5	2
Fall from moving vehicle	36	12	7
Fall from non-moving vehicle	31	45	13
Fall on same level (includes NEC and unspecified)	457	251	130
Fall onto or against objects	90	145	62
Fall through existing floor opening	8	8	1
Fall through floor surface	11	3	0
Fall to floor, walkway or other surfaces	357	1,035	458
Falls (NEC)	148	128	50
Slip and trip (loss of balance without a fall)	391	214	73
Walking without other incident (but injured)	115	78	14
Stepped on object and fell	87	34	22
Falls, slips	0	4	0
Total Slips, Trips and Same-Level Falls	1,949	2,197	941
Total Mishaps	11,571	14,237	4,872
% Slips, Trips and Same-Level Falls of Total Mishaps	16.8	15.4	19.3
<i>* Data for the first six months of FY04</i>			
<i>** NEC (Not Elsewhere Classified)</i>			

All Types of Fall Mishaps Within the Navy			
Type of Fall	FY02	FY03	FY04*
Fall down stairs or steps	137	212	103
Fall from floor, deck or ground level	60	19	5
Fall from ground level to lower level	15	4	1
Fall from building girders or other structures	2	6	0
Fall from ladder	65	93	39
Fall from loading dock	6	5	2
Fall from moving vehicle	36	12	7
Fall from non-moving vehicle	31	45	13
Fall from piled or stacked material	11	4	1
Fall from roof, edge and unspecified	2	2	2
Fall from scaffold or staging	8	9	0
Fall from ship/boat/NEC**	6	0	4
Fall on same level (includes NEC and unspecified)	457	251	130
Fall on ship or boat	29	8	0
Fall onto or against objects	90	145	62
Fall through existing floor opening	8	8	1
Fall through floor surface	11	3	0
Fall to floor, walkway or other surfaces	357	1,035	458
Fall to lower level (includes NEC and unspecified)	67	165	134
Falls (NEC)	148	128	50
Falls (unspecified)	47	92	41
Slip and trip (loss of balance without a fall)	391	214	73
Walking without other incident (but injured)	115	78	14
Stepped on object and fell	87	34	22
Falls, slips	0	4	0
Falls from and struck by equipment	0	0	1
Total Falls	2,186	2,576	1,163
Total Mishaps	11,571	14,237	4,872
% Falls of Total Mishaps	18.9	18.1	23.9
<i>* Data for the first six months of FY04</i>			
<i>** NEC (Not Elsewhere Classified)</i>			

Resource:

- <http://safetycenter.navy.mil/osh/downloads/AshoreFallProtectionGuide.pdf> [Department of the Navy Fall-Protection Guide for Ashore Facilities].

Our Own Worst Enemy

Sailors hurt themselves every holiday season while stringing and taking down lights like this.



The former Commander, Naval Safety Center, RADM George Mayer, once said, “The vast majority of mishaps are the result of our own doing—our errors and poor decisions.” If you had any doubts, just take a peek at these incidents:

- It doesn't pay to get in a hurry, especially when you're working 20 feet off the ground. That's the lesson an E-6 learned the hard way. While backing up, moving a tarp over an unshingled section of a new roof, he accidentally stepped off the edge. The E-6 broke his left fibula and severely bruised the sole of his right foot.

- An E-4 had consumed a large amount of alcohol and was making his way back to the ship with a liberty buddy when, for unknown reasons, he decided to jump from the main pier to a barge 8 feet below. Both of his ankles buckled when he landed on the barge. While the liberty buddy ran to the ship's quarterdeck to get help, the E-4 climbed a ladder from the barge to the pier, where ship's medical personnel helped him to the ship. They then took him to a hospital, where X-rays revealed two broken ankles. Surgery followed, and the victim spent two months in ankle casts.

- If you think water fights are just for kids, tell that to an E-4 who went running down some stairs during such a fight. He slipped and fell, landing on his

back. He felt immediate pain but waited a week to see a doctor, who diagnosed muscle strain and ordered a week's light duty.

- If you're going to walk and eat ice cream at the same time, you'd better pay attention to your surroundings. An E-6 didn't, and he ended up in a hospital with a broken right foot. He landed wrong after stepping off a four-inch curb at a beachfront.

- Springtime tasks around the house can be a pain in more ways than one. An E-5 had finished cleaning out the gutters on his house and was climbing down a ladder when he missed a step and fell about 10 feet. He landed on his left shoulder and broke his clavicle.

- An E-4 had been out partying with some shipmates after returning from an at-sea period. The group was returning to their motel at 0215, when they saw some more shipmates in the motel's swimming pool. They hurried upstairs to change clothes, so they could join their friends. As the E-4 was coming back down the stairs to the pool area, he missed a step and landed wrong on his heel. He dismissed the initial pain as nothing more than a slight sprain but found out a few days later, when he went to medical for X-rays, that he had a broken heel bone. ➡

Stepping Up To Prevent *Falling Down*

A good housekeeping program is paramount to preventing slips, trips, and same-level falls in the Navy. How do you establish such a program? It requires planning ahead, assigning responsibilities, and implementing the program as part of the daily routine. The command safety office should be responsible for running the program.

Wet or Slippery Surfaces. Here are some control measures that can be implemented indoors:

- Have wet-floor signs readily available and display them.
- Use anti-skid adhesive tape to combat slips and trips.
- Use moisture-absorbent mats in entrance areas during inclement weather conditions.
- Establish a policy and identify procedures to be taken if a spill occurs.

- Apply chemical treatment to floor surfaces, which increases the coefficient of friction.

- Use continuous mats or rugs on highly polished floors, such as marble, terrazzo or ceramic tile, which can be extremely slippery, even when dry. Such flooring definitely will increase the potential for a slip when moisture is present.

Traction on outdoor surfaces can change drastically when subjected to environmental factors. Here are some controls that can be implemented:

- Keep parking lots and sidewalks clean and in good repair.
- Remove snow and ice where feasible, or treat surfaces with sand or other environmentally friendly materials that prevent slipping.
- Use adhesive stripping or anti-skid paint whenever possible.

Fall mishaps from loading docks are many.





Navy photo by PHAN Leonard J. Mandap

these docks often are congested. They're also often wet, and with the edges usually made of metal, they can become very slippery. Here are some recommended control measures:

- Use removable railing when the docks aren't in use.
- Use abrasive, skid-resistant surface coatings.

Besides using various abrasive, skid-resistant surface coatings and different kinds of rubber or rubber-like mats, here are some more control measures you can take to reduce the risk of slips and falls:

Obstacles in Walkways or Other Areas. Here are some recommended control procedures:

- Avoid stringing power cords or lines across hallways or walkways; if necessary to do so, tape them down or up to the overhead.
- Encourage safe work practices, such as closing file-cabinet drawers after use and picking up and stowing loose items from floors.
- Urge people to use caution about where they leave boxes, bags, and other items.
- Keep all work areas clean and orderly; remove and store any equipment or material away from pedestrian traffic.
- Allow sufficient clearance for maneuvering around equipment in such areas as hallways; periodically inspect these areas.

Falls From Vehicles and Equipment. Many injuries occur from the simple process of getting in and out of vehicles, equipment, machinery, or truck beds. When the steps of machinery or equipment are metal, the coefficient of friction is low and gets even lower when the steps are wet, muddy or oily. Here are some suggested control measures:

- Keep the steps clean and dry.
- Whenever mounting or climbing into a vehicle, have a good hand hold on it.

Falls From Loading Docks. Fall mishaps from loading docks are many. Part of the problem is that

Signs and Striping. These devices are helpful in reminding people about fall hazards.

Footwear. Protective footwear is required to prevent injury in wet or slippery areas. Shoes with slip-resistant soles can play a big role in preventing injuries from slips or same-level falls. Always evaluate the sole and heel of shoes to determine if they are worn out.

Lighting and Illumination. Poor and inadequate lighting in a workplace is associated with an increase in slips, trips and same-level falls. Proper lighting will ensure that personnel will be able to detect obstructions and avoid slippery areas.

Individual Behavior. Behaviors such as walking too fast or running can cause a problem. Also contributing to more slips, trips and same-level falls are people getting distracted, not watching where they're going, carrying materials that block their view, wearing sunglasses in low-light areas, and not using handrails. Other contributing factors include a lack of knowledge, impatience and bad habits.

Training and Awareness. Personnel should be trained to recognize the risks associated with slips, trips and same-level falls, as well as the changes they can make in their habits to avoid those problems. ■

This information was taken from a 1 May 2006 report by the GNO Fall-Protection Working Group.

Negligent Discharges: The Statistics



Nationwide, accidental firearms-related fatalities remain at record lows, according to the 2007 Injury Facts report from the National Safety Council. That report also shows fatal accidents involving youths continuing to decline significantly. These downward trends are occurring, even though firearm ownership continues to rise in the United States. The estimated number of citizen-owned firearms is up to more than 290 million, while the number of American households with at least one firearm is now about 47.8 million.

Statistics in the National Safety Council's 2007 Injury Facts show a 40 percent decrease in accidental firearms-related fatalities over a 10-year period ending in 2005. The decline in firearms-related accidents involving children ages 14 and under between 1995 and 2003 was 69 percent.

All of these declines are attributed to a number of factors, starting with the shipment of free locking devices with all new firearms. Other factors have been industry-supported firearm-safety-education programs and technological advances in firearm designs and manufacturing processes. Last but not least are educational efforts by groups like the National Shooting Sports Foundation, the National Rifle Association, and state agencies.

Gun safety has been a concern in this country since the firing of the first firearm. The rules have changed very little from the early days, when round lead balls were tamped down the muzzles of rifles and pistols with hickory ramrods. Make it a point to learn the rules [see the list on pg. 13 and check out all three firearms-related articles that follow]. ■

While cleaning a personal handgun, a Navy PO2 decided to load it. Moments later, he accidentally dropped the weapon on the ground, and it discharged. The round hit the PO2 in his chest; he was pronounced dead on arrival at a local hospital.

A Marine corporal was killed by his brother, who was clearing a rifle in the rear of a truck. The round hit the corporal in the back.

These fatalities are recorded in the Naval Safety Center's database for negligent discharges that occurred both on and off duty between FY1997 and FY2007 (through May 26). The Navy has had a total of seven such fatalities during this period, while the Marine Corps has lost 16 from negligent discharges.

Resources:

- <http://www.gunsafetyeducation.com/> [Gun Safety Education.Com]
- <http://w3.agsfoundation.com/home.html> [Educating Americans About Gun Rights and Responsibilities]
- <http://www.nrahq.org/education/guide.asp> [NRA Gun Safety Rules]
- http://www.kidshealth.org/kid/watch/house/gun_safety.html [Gun Safety]

Quick—Shoot

By Lt. Tim Osborne,
VAQ-130

I had been waiting for weeks to go hog hunting, and the time finally had come. It was about 0500 Saturday morning when my buddy came to pick me up in his dad's brand new Ford F-350. The truck was spotless, inside and out, but it didn't stay that way very long.

We hit the highway and headed to a ranch in West Texas. On the way, we drove through several canyons and past a lot of wildlife. We saw deer, turkey and rodents, which got us excited and hopeful we would have good luck in the day's hunt. We were anxious to start our adventure and did everything we could to get to our hunt location quickly.

Once there, we were ready to hit the trail on our four-wheelers. There was just one problem: They wouldn't start. We subsequently decided to use the truck for the day's hog hunt.

I had brought along my Marlin 450 Magnum, which packed enough punch for hog hunting. My friend, on the other hand, had his Winchester 375 H&H Magnum, an incredibly powerful rifle specifically built to hunt African big game. The ballistics produced by his rifle far exceeded the requirements of what we needed that day. Specifically, the 375 H&H Magnum produces 4,265 foot-pounds of energy, which is more than twice as powerful as a standard hunting cartridge. Bottom line:

That Truck!

We had some major firepower with us.

My friend drove, while I rode shotgun. We rested our rifles between us, with the barrels pointing toward the floorboard. That's a standard way of carrying rifles if you want to be able to get to them quickly.

We drove through the ranch in about an hour, without seeing any movement. We both had rounds loaded in the cylinders of our rifles but had agreed not to chamber a round unless we saw something we were about to shoot. While heading back to the ranch, I was looking down at my friend's rifle when I saw it didn't have a safety feature on it. I thought this situation was rare and asked him how he safes the gun to prevent it from firing accidentally.

At this point, my friend started playing with the hammer and trigger assembly of his rifle, explaining to me how to safe the weapon once the hammer had been pulled back. As he spoke, I watched him keep fiddling with his rifle. I couldn't help thinking how reckless he was being. I knew my rifle wasn't chambered, but I wasn't sure about my friend's weapon. His actions (pulling back the trigger and then safing the rifle) were making me nervous.

He continued displaying the gun's features until he finally cocked the hammer and pulled the trigger, thinking a round wasn't chambered. If about now you're thinking the rifle went off, you're right. The explosion was horrific. It sent what seemed like a shockwave through the closed cab of that F-350. We spent the next few seconds in a confused and dazed state.

I was trying to figure out if either of us had been injured, but my shock wouldn't let me think straight. With the gun's barrel having been pointed at the floorboard, pieces of carpet, metal, engine block, and gunpowder had blown into our faces. More shrapnel lay in the dirt road. As we both were walking away from the "dead" truck, I questioned my buddy about what just had happened. He looked at me and said, "I thought it wasn't loaded."

Comments like that are heard a lot after someone makes a mistake with a gun. Mistakes with guns never are good, and too many times, a person dies

from a firearm someone didn't think was loaded. Here are 12 rules to live by when it comes to handling firearms—commandments, actually—12 of them. Here they are:

- Firearms and alcohol or drugs (including the prescription kind) do not mix.
- Treat every firearm as if it's loaded.
- Never point the muzzle of a gun at anything you don't intend to shoot.
- When hunting in a party, always point the muzzle in a safe direction.
- Leave the safety on until you are ready to shoot.
- Know your target and what is beyond your target.
- Never give or take a firearm with the bolt or magazine action closed.
- Never pick up a firearm by the muzzle.
- If friends are with you, give your firearm to one of them before crossing obstacles (e.g., fences and ravines).
- Always check a barrel to make sure it's clear before loading.
- Before storing your firearm, do a sight-and-feel inspection of the chamber.
- Never trust others to follow these rules; make sure they do. The life you save may be your own.

Here's something else you need to remember: **It's illegal to hunt from a moving vehicle in the United States.** We were overly anxious to get to the big hunt that day. A little complacency could have led to much more than some explaining about a hole in the bottom of a new truck and a story for the campfire. Learn from our mistake; incorporate risk management into all your adventures. ■

Resources:

- <http://www.gamecalls.net/huntingtips/safetytips.html> [*Hunting & Fishing Safety*]
- http://w3.agsfoundation.com/safety/r_hunting.html [*Gun Safety Program*]
- <http://www.nrahq.org/education/guide.asp> [*NRA Gun Safety Rules*]
- <http://safetycenter.navy.mil/safetips/a-m/guns.htm> [*SafeTips Guns*].

Paging Wyatt

By John Mapp,
MARMC

Come to think of it, let's call in a couple of driving instructors, too.

Sailors excel at multi-tasking, which usually is a good thing. However, some tasks never should be attempted together. Take the case of our latest addition to the ranks of gunfighter wannabes.

The star of this particular western tried to combine the mutually exclusive tasks of driving and firearms handling.

Confused? Welcome to the club. Our hero's supervisor, LCPO, division officer, and department head share your confusion, along with everyone else familiar with the details of this little comedy.

Let us slip back to the thrilling days of yesteryear—or, at least to the winter of 2006. Our stalwart hero, whom we will call Petty Officer Festus, was on leave in Georgia. Festus hitched the mules to the family buckboard—OK, he really got behind the wheel of his mom's car. He and dear old Ma, who presumably was wearing a gingham dress, bonnet, and white apron, were driving to a local shooting range for some target practice—family time, togetherness—you know.

Festus and Ma carefully had placed his shootin' iron, a .45-caliber Glock, in the glove box and had tucked the ammo in the center console. Festus was *certain* the weapon was unloaded because he just had cleaned it the night before.

The closest range was located on a nearby Air

Force base. Military installations have very strict procedures for bringing weapons onto the base: The magazine must be removed, and no cartridges may be in the weapon. On the way to the base, our hero, who was certified to carry concealed firearms and therefore should have known better, decided that the best time to make sure his weapon was unloaded was while driving down the street.

Stopped in traffic, at a red light, Festus practiced his best Clint Eastwood squint, reached into the glove compartment of the family buckboard—I mean his mom's car—and took out the pistol. He then pulled back the slide a little to make sure the chamber wasn't filled with a live round. When he didn't see a cartridge, he released the slide. For some reason, Festus decided the next logical step was to point the muzzle toward his left thigh and pull the trigger.

No one even vaguely involved in the investigation of this incident has any idea how Festus failed to notice that a round did, in fact, remain in the chamber. Festus himself swears up and down the weapon had been unloaded when he'd cleaned it the previous night. Similarly, no one ever has come up with a sat-



Earp...

isfactory explanation why Festus thought his leg was an acceptable substitute for a clearing barrel *[or pointing the weapon in a safe direction]*.

Pop quiz: What happens when you pull the trigger on a pistol with the safety off and a round in the chamber? If your guess involves a loud noise, a high-velocity projectile, and possibly a great deal of foul language, you already may be a winner.

By a series of miracles so improbable that calculating the odds is impossible, the .45-caliber bullet struck Festus inside his left thigh, traveled through the leg without hitting the femoral artery or any bone, and exited behind the left knee. A millimeter one way or the other, and the bullet would have shattered the thigh bone or severed the femoral artery. The latter likely would have been fatal—it absolutely would have caused a great many long-term medical problems, including permanent disability. As it is, the bullet gouged through a lot of muscle tissue and did an unknown amount of damage to a group of nerves behind the knee.

Ma took the reins—sorry, she got behind the wheel—and tried to drive Festus to the hospital but soon gave up on this idea and called for an ambulance. Festus was transported to the local ER, where the docs gave him a couple of bandages, a splint, and a handful of painkillers. The police, meanwhile, took away his shootin' iron (they gave it back the next day) and decided not to charge him for discharging a firearm inside the city limits. Ma presumably gave Festus a hard time for ruining the buckboard's upholstery with blood and for punching a hole through the floor, although that probably helped the blood drain out.

When Festus got back to work a few days later, he also received a great deal of more-in-sorrow-than-in-anger abuse from his entire chain of command. Based on his behavior in this incident, Festus was told he has no business handling firearms *anytime*.

The command's safety personnel sighed deeply, shook their collective heads, and proceeded to create an update for the safety-training program. Here are a few of the highlights from that training update:

Driving is dangerous. Maneuvering one-and-a-half tons of metal and plastic along concrete or asphalt streets filled with similar vehicles is inherently hazardous. While driving, the *only* thing the driver should be thinking about is driving—period, full stop.

Handling firearms is inherently dangerous. While handling firearms, *do nothing else*—ever, period, full stop.

All firearms are assumed to be loaded until proven otherwise—always, period, full stop.

Never point or aim a firearm at anything you do not wish to shoot. If the shooter does not want a bullet hole in something, he or she should not point a gun at it—ever.

Always assume the weapon will fire every time you touch the trigger. That's every time, with no exceptions.

Festus should have checked the weapon the moment he took it out of the safe. He should have put on the safety, made certain the firing chamber was empty, and the magazine was removed. He should not have handled the weapon in the car—no matter how long the light stayed red. He should not have pulled the trigger on the weapon. He should have pointed the weapon in a safe direction. Had any one of these conditions changed, Festus would not now be walking around with a cane and a splint. Hopefully, Petty Officer Festus will recover the full use of his left leg. In the meantime, the command is trying to help others avoid the mistakes Festus made. ■

Resources:

- <http://www.nrahq.org/education/guide.asp> [*NRA Gun Safety Rules*]
- http://en.wikipedia.org/wiki/Gun_safety [*Gun Safety*]
- <http://www.bradycenter.org/let/safety/safety.php> [*Responsible Gun Ownership and Safe Storage*]

Loose Lips Sink Ships, Loose Bullets Kill People

By Lt. Greg Hracho,
VAQ-140

As part of our scheduled deployment, our squadron was supposed to do split-site operations between a forward operating base (FOB) in Iraq and our carrier. This plan meant the entire squadron had to become pistol-qualified because we lived and worked within the FOB. The qualifications included a Navy online tutorial, an online test, and a pistol shoot.

I was checking my e-mail in the squadron's operations space when I noticed a holster lying on the floor. This being Iraq, the holster already was dusty, so I picked it up and put it on a desk. As I did, I saw a single bullet lying on the floor and immediately picked it up and took it to the operations duty officer (ODO), who had a list of all the crew. We printed out a copy of that list and told everyone to inventory their ammo.

The bullet was given to the maintenance material control officer (MMCO), who called maintenance control and had any maintainers who might have been in the space also to inventory their ammo. The ODO and I watched all the aircrewmembers inventory their bullets and checked them off the list. One jet was airborne, and we narrowed down the missing bullet as belonging to one of the crewmembers aboard that jet. Once it landed, we found who that crewmember was and returned the bullet to him.

Twelve hours later, I was getting ready to go flying and walked into maintenance control to read the aircraft report and saw that everyone again was inventorying their bullets. This time, it turned out a maintainer had lost a bullet, but since everyone had gone through maintenance control, we all had to do another inventory.

Bullets and handguns are controlled items and rightfully so. People issued guns and ammo are responsible for their upkeep, as well as their inventory. If something is missing, charges could be brought up of dereliction of duty, loss of government property, and not being able to deploy to that base. Because of the limited manning that split-site operations cause, every Sailor is valuable, and losing a person to something like irresponsibility cannot be afforded. In short, the loss of a Sailor's ability to deploy to this base hurts the squadron. It also could have a trickle-down effect

and hurt the people being supported by the squadron's jets due to an increase in maintenance time.

Another consideration is that random bullets lying around don't contribute to a safe environment. We are all adults, so the chances of someone playing with a bullet are slim but still exist. Second, a person inadvertently stepping on one of the bullets could have set off the primer. Last, trash on this base is burned. If either of these bullets had been swept up without anyone noticing, it could have gone off in the trash pile, possibly killing or hurting a Marine.

Aside from poor attention to detail, another cause for the random bullets is the design of the holster. Once personnel enter their shop, they take off the guns and put them on a desk or in a locker. The constant lifting and swinging rubs against the clips and loosens the first bullet.

The fix to this problem simply is to pay attention to issued items. People putting on their guns after working on a jet should open the clip holsters and make sure the mark on the clip reads full. These guns are issued as a self-protection measure. If we're going to protect ourselves, as well as those around us, we need to follow the proper procedures for storage and upkeep. ➡

Here's something you need to remember: OpNavInst 5530.13 (Department of the Navy Physical Security Instruction for Conventional Arms, Ammunition, and Explosives) clearly states in paragraph 0101(a), "Individuals issued or in possession of AA&E are responsible for its security." It is highly recommended that all commands review this instruction to evaluate their AA&E program for compliance in accordance with Appendix F.—Cdr. Al Dean, Explosives and Weapons Division Head, Naval Safety Center

Resources:

- <http://www.brooksidepress.org/Products/OperationalMedicine/DATA/operationalmed/Safety/WeaponsHandling.htm> [Weapons Handling]
- http://www.safetycenter.navy.mil/bestpractices/other/downloads/Safety_Corner_weapons.pdf [Weapons Safety].

Navy photo by MCSN Derek R. Sanchez

Knowing When To Stop and Reassess



By Cdr. Randy Blackmon,
XO, VAW-116

My wife's red, '65 Mustang convertible was looking good after a fine wax job, except for one thing: It drooped slightly in the rear. "No problem," I thought; "now I have an excuse to replace those old, worn-out, rear leaf springs with some new, heavy-duty ones."

After getting the replacement springs, I cleared the garage for the removal and replacement procedure. I did my ORM, starting with making sure I had two proper-capacity jack stands to keep the rear of the car suspended. I also chocked the front tires, and I had all the tools and PPE I needed.

I first took off the front "hanger bolt" nuts so I could remove the springs' hanger bolts. The nuts came off without a problem. The first bolt, however, was stuck and wouldn't slide out of the spring eyelet, so I grabbed a hammer. After banging away with no results, I got a bigger hammer but still had no luck. I then took a hacksaw and tried to saw the bolt at the base on both sides of the spring. This method was

working nicely, but there was one drawback. Based on my calculations, I would need a week to complete the task, and my hands, arms and shoulders weren't going to last that long.

My solution to this problem was to call a squadronmate—you know, the guy who has all the cool tools and ideas. I borrowed his 1,200-watt, 2,600-stroke-per-minute, DeWalt reciprocating saw, then slid back under the car and resumed sawing. Metal flakes were flying, and the entire car was vibrating. "Great!" I thought. "At last, I'm making some progress."

It turned out that some of the metal dust flying around was coming from the saw blade—but not a problem. My buddy had supplied plenty of blades. While changing the blade, I noticed the jack stand on my side of the car didn't look right. The safety pin nearly had backed out of the stand. A little more sawing would have resulted in more than 2,000 pounds of Detroit metal landing on my side!

I lifted the car with a hydraulic jack, repositioned the jack-stand's safety pin, and then duct-taped the pins in both stands so they couldn't back out. I finished the job without further incident.

What did I learn from that event? Spending about 20 more dollars would have bought me jack stands that had non-backing secure safety pins. The best equipment always costs more, but where safety is concerned, it's worth every penny.

The biggest lesson from this experience was that I hadn't stopped to think how using the power saw was going to change things. My simple plan of using a wrench had been modified, but I hadn't used ORM to reassess the new hazards and risks involved. Bottom line: When your plans change, you must reevaluate the possible repercussions. ➡

Resources:

- <http://www.safetycenter.navy.mil/orm/> [*Operational Risk Management (ORM)*]
- <http://www.safetycenter.navy.mil/orm/generalorm/introduction/> [*Operational Risk Management*]
- http://findarticles.com/p/articles/mi_m0IBQ/is_2000_August/ai_68535039 [*ORM: Keeping Sailors Safe One Step at a Time*]

A Weekend in the Desert: Lessons in Off-Duty ORM

By CS1 Eugene Kolanowski,
HSL-47

September is a great month in Southern California. Desert season starts at the end of the month, so I spent much of the summer getting my quad [*four-wheeled, all-terrain vehicle*], a Raptor 700R, ready for the sand.

I bought a new exhaust and new nerf bars (bolt-on equipment designed to keep other ATVs' tires from getting stuck between your front and rear tires). Once I had packed everything I needed for my first trip of the season, making sure I had all the equipment—helmet, goggles, gloves, chest protector, safety flag, and boots—I was off. The site I had chosen was Buttercup, located 180 miles east, or just 10 miles from the Arizona border.

My wife and I arrived at the dunes at 0900 Saturday morning and were excited to get going. A lot of sand dunes, many hundreds of feet tall, are in that area. I had been there countless times before and had experienced the effects of wind storms; they cause hills to change shape.

I took my time on the first ride of the day. There weren't many people out yet, since two-stroke ATVs wouldn't be allowed for two more weeks. The sand was smooth as I went in and out of the dunes and over the whoops (rolling bumps anywhere from five to 10 feet apart and one to three feet high). I thought to myself, "This is great! With just a few people out here and good sand, I'm gonna kick it up a notch!"

I got over the dunes and down to the hard pack with no problem. My speed increased to more than 70 mph at one point, but I backed it down to 40 or 50 when I started swerving around the small desert trees. I didn't have a second thought about my speed because I had been here before—I knew this desert. I assumed nothing could happen to me, but just to be safe, I had made sure I was wearing all my PPE.

While flying around a turn, I looked ahead and saw a deep rut—maybe 2 feet wide and about 3 feet deep—in the dirt. The rut was diagonal across the trail. Having no where else to go, I hit my brakes, both front and rear. I was thinking to myself, “I’m not going to stop on time.” My next thought was, “This is going to hurt!”

I hit the rut going about 40 mph. The left front tire dove into the rut and hopped up as it came out the other side. The left rear and right front tires dove into the rut next, instantly stopping my quad; however, I didn’t stop. I kept moving 40 mph and hit the ground headfirst, shearing off the visor from my helmet. My shoulder dug in, causing my feet to go over my head and flipping me onto my back. My previous thoughts were correct: It did hurt.

I was on the ground wondering how seriously I had been hurt when I realized I could move my fingers, toes, arms, and legs. I assumed since everything was moving, I must not have broken any bones. I slowly stood up and walked around a little to make sure everything was all right, then got back on the quad and headed to camp at a snail’s pace.

When I arrived at the camp, I took off my helmet and dumped about five pounds of sand from it. All eight pads inside the helmet had come unsnapped. When I took off the rest of my gear, I started noticing pain in my back; I thought I must have twisted it in the wreck. I then checked out the quad—there wasn’t any serious damage.

I spent the night in the desert and enjoyed a few drinks around the campfire, even though I was in a little pain, which I attributed to some strained muscles. When I woke up the next morning and decided to take a morning ride, I noticed I was a little stiff. It didn't take long for me to realize my body was damaged more than I had thought at first; I felt severe pain in my back from even minor bumps in the road. I decided to turn around, head back, and call it a weekend. I packed up the quad for the trip back to San Diego.

When we arrived, I dropped off my wife and the quad and went to the emergency room at Naval Medical Center, San Diego. I spent six hours there

and found out I had a compression fracture of my L1 vertebrae. I also had a concussion and other soft-tissue injuries. The doctor said I was lucky, and that if I hadn’t been wearing the chest protector and helmet, I would have been much worse off. The doctor placed me on light duty for six weeks, put me in a back brace, and gave me some painkillers before sending me home.

My accident has taught me that ORM needs to be practiced all the time, regardless of how much confidence you have in your abilities. I practiced ORM by wearing the proper PPE and initially going slowly in the dunes. However, I failed to think about ORM when I was on the hard-packed ground. I had accelerated to a high speed and wasn’t aware of the conditions of the trail I was driving on. If I had taken time to ride the trails at a slower pace and had learned the condition of the trails, I would have had a much nicer time—certainly a less painful one. ■

*There are unknowns in unexpected conditions. People need to be trained to use the time-critical mnemonic: **A** (Assess the risks), **B** (Balance your resources), **C** (Communicate during the event), and **D** (Do and Debrief). Part of the assessment should be contingency planning—what could go wrong and what to do if it does—and a review of emergency procedures. Part of the balancing is making sure all players know what to do and are alert. Part of communicating is what to say (and to whom to say it) when something starts going wrong. The next time similar events occur, anyone who was caught off-guard (or who didn’t know what to do) this time stands a much better chance of being prepared and ready to act.—Ted Wirginis, ORM program coordinator, Naval Safety Center*

Resources:

- <http://www.atvsafety.gov/> [ATV Safety.gov]
- <http://www.atvsafety.org/> [ATV Safety Institute]
- <http://www.nsc.org/library/facts/agriatv.htm> [All-Terrain Vehicle (ATV) Safety]
- http://www.consumerfed.org/pdfs/Final_ATVReportLinks.pdf [All-Terrain Vehicle (ATV) Safety Crisis—America’s Children At Risk]
- <http://safetycenter.navy.mil/articles/CRITICALDAYS/2006/ATV.htm> [ATV Mishaps: On the Rise and Very Serious]
- <http://safetycenter.navy.mil/toolbox/offroadvehicles/default.htm> [Off Road Vehicles Resources].

ORM

Improving on Success

By Lt. Anthony J. Schwarz,
USS *Boxer* (LHD-4)

In March 2007, the safety department aboard USS *Boxer* (LHD-4) started focusing their attention on the USMC backload scheduled for April. We were headed back to the same anchorage point (off the coast of Kuwait) we had used during the debarkation five months earlier.

The November 2006 offload had been very successful in many ways, and it was completed on time. However, a pervasive feeling of “being rushed” had existed throughout the weeklong evolution. One young Marine had been injured seriously when his hand was smashed between a seven-ton truck and a steel stanchion on the upper vehicle deck.

The safety department brainstormed about initiatives that might make this evolution more manageable. We determined that making operational risk

management (ORM) an integral part of the process could make the backload even more successful than the offload—and minimize injury along the way.

We decided to create a “Backload ORM Metric” that would address both major and minor hazards associated with receiving the 15th MEU and their equipment. We solicited ideas from every department on the ship, and my staff and I chose the 50 we assessed as most relevant. We listed them in a spreadsheet format [see copy at <http://safetycenter.navy.mil/bestpractices/orm/downloads/Boxer ORM Marine backload.xls>]. Using their respective hazard-severity categories and probabilities of occurrence, we devised risk-assessment codes (RACs) for each.

Then we generated multiple controls for mitigating associated risks. Every department submitted a



Navy photo by PH2 Michael D. Kennedy



list of backload hazards they considered most dangerous. The departments also were encouraged to propose hazard controls, and many did. It was an all-hands effort. After considering the potential effectiveness of each control, we devised new RACs for each hazard. Finally, we color-coded each RAC to show risk assessments before and after control implementation.

Two weeks before the backload, I briefed the XO and department heads on the metric. My staff held training for division safety petty officers (safety reps), who, in turn, held training in their respective divisions. We asked the safety reps to submit muster sheets after completing this training, so we could ensure 100 percent contact. Our command training officer entered this training in the relational administration (RAdm) program. Each division safety rep also was required to post the metric in a conspicuous, high-traffic area within the division.

Using the metric as a guide, we generated a PowerPoint brief (consisting of 55 slides) about each hazard and how to minimize its related risks. Our mass communications specialists (MCs) then ran this brief over closed-circuit TV continuously for the three days leading up to the backload.

The morning of the event, our ship was filled with alert, assertive, and safety-minded personnel, eager for action. We received 1,400 Marines, 138 vehicles,

28 aircraft, and more than 500 pieces of cargo without sustaining a single injury or mishap. And, interestingly, although we moved at a more controlled pace, we actually finished the backload in less time than it had taken for the offload.

Everyone involved had no problem staying ahead of the evolution and maintaining situational awareness. Every department had been engaged during the hazard/control brainstorming session three weeks earlier, and crew members were anxious to see the fruits of their preparation. During the ORM planning, we were able to rehearse this high-risk evolution in our heads, and when “game time” came, we were ready. ORM helped make this evolution a colossal success! 

The author is the ship's safety officer.

Resources:

- http://safetycenter.navy.mil/orm/ORM_Explanation/CO-XO_Gouge.htm [*CO/XO Gouge: The Leader's Role*]
- <http://safetycenter.navy.mil/orm/generalorm/downloads/introtoorm.doc> [*Operational Risk Management*]
- http://safetycenter.navy.mil/orm/ORM_Explanation/Overall_ORM_Assessment_v1.xls [*Overall ORM Assessment*]

A Navy Job With a View.



Navy photo by PHAN Kenny Swartout

A chief electronics technician (left) works aloft on radar equipment. We realize there are a couple of safety violations (e.g., he has no working lanyard, and the leg straps are loose), but we couldn't find a single photo without at least some violations—hence, the reason for this story.

Sailors often have to work aloft, and there's nothing routine about the evolution. That's why everyone involved with such operations always should have their what-if mindset of operational risk management (ORM) fully engaged.

The precautions and procedures outlined in paragraphs C0802 and C0804 of the Safety and Occupational Health Program Manual for Forces Afloat (OpNavInst 5100.19E) say not to go aloft on masts, stacks or kingposts without first obtaining written permission from the officer of the deck (OOD). Getting this permission involves completing a Working Aloft Checksheet (part of OpNavInst 5100.19E). Available at http://www.safetycenter.navy.mil/instructions/OSH/5100-19E/OPNAV_form_5100_23.pdf, this checksheet ensures workers follow the precautions and procedures for working aloft.

Supervisors and those concerned with working aloft should become familiar with this checksheet and all the procedures contained in Chapter C8 of OpNavInst 5100.19E. Among these procedures is the requirement to have a completely dressed-out safety observer (with full-body harness, sleeve, working and safety lanyards) stationed on deck.

The cognizant division-training plans must include regularly scheduled training on this material,

By LCdr. Joe Mayers, USN (Ret.)

Two hundred feet is a long way to fall—a real long way. At that height, most people are frightened, panicky shells of their normal selves. Nevertheless, that's the average height above water a Sailor climbs when working aloft.

Some would say it's a good thing the Navy is filled with daring young Sailors who laugh in the face of the average person's fears. But few who have to work aloft laugh about it; in most cases, they take this work very seriously. As one young Sailor remarked, "It's my job, so I keep telling myself it's something I have to do, and it'll be over soon... oh, and I try not to look down."

.. And Its Share of Risks

and OODs should review the material periodically. It is recommended that ships include this material in the OOD required-reading folder.

Harnesses, climber sleeves, and lanyards used for working aloft are better controlled and issued from a single point on board. Harnesses and climber sleeves also can be serialized to facilitate documentation of accomplished planned maintenance (PMS) and inventory.

Equipment to be worked on and all rotating equipment in the aloft area must be danger-tagged out, according to OpNavInst 5100.19E's Working Aloft Checklist. Hazardous transmitting equipment near the aloft working area must be secured with hanging placards to prevent transmission while personnel are aloft. The latest NavSea (Naval Sea Systems Command) NSWCCD (Naval Surface Warfare Center, Carderock Division) radhaz (hazards from electromagnetic radiation) survey should be used to design a tagout matrix.

One problem we often find during safety surveys is poorly maintained climber-safety rails (*references: GSS/GSO 622, NavShips Drawing 804-4563125 Rev C, MIP 6231/002*). To pass our scrutiny, rails should be free of all paint and corrosion and have a "light" coating of machine oil to help prevent corrosion. It's also important to ensure all climber-safety rails on a ship are on an equipment guide list (EGL) and are maintained according to PMS specifications. Too often, we find that rails on masts are in good condition, while those on stacks, kingposts and cranes are in very poor shape because no one has taken ownership.

The hole at the top of a rail is for a retaining pin to prevent the climber-safety sleeve from inadvertently coming off. Ensure the pin is there, and replace it after each use.

I strongly encourage electronics material officers (EMOs), communications officers (CommOs), electronics officers (ElecOs), chief electronics technicians (ETCs), chief information systems technicians (ITCs), chief fire controlmen (FCCs), and chief cryptologic technicians technical (CTTCs) to get up the mast periodically. Check your respective areas (e.g.,

navigation lighting, radar and antenna material condition, antenna weatherproofing, grounding-bonding, condition of nonskid, preservation, climber-safety rails, ladders, antenna cutout-switch condition and labeling, cable standoffs, and life rails/ropes). Don't forget to inspect the safety sleeves, harnesses, and working and safety lanyards before use, in accordance with established PMS. The lanyard length shall not exceed six feet or the distance from the work to six feet above the deck, whichever is shorter.

Both ship's force and outside-activity personnel should not violate aloft/radhaz procedures by disregarding warning signs and personnel barriers.

The combat systems officer of the watch (CSOOW) should not rely on e-mail to notify applicable leadership and workcenters of systems radiating status—we have seen that problem before. Don't assume that communications and coordination among all applicable ship's force workcenters, CSOOW, and OOD have taken place or still is in effect. Cognizant supervisors and leadership must verify aloft and radiation status. All affected personnel, including the OOD, CSOOW, engineering officer of the watch (EOOW), and appropriate department leadership's maintenance personnel, must have situational awareness for the scope of all topside aloft work or radiation status before, during and after aloft work has been completed.

The OOD, combat systems officer (CSO), engineer officer (EO), systems test officer (STO), EMO, CSOOW, and EOOW all must adhere to and enforce established aloft/radiation-zone safety procedures. That's the only way to keep aloft work safe and prevent mishaps among personnel from both ship's force and outside activities. We also reiterate targeted training for CSOs, operations officers (OpsOs), EMOs, STOs, CSOOWs, and cognizant systems personnel during our safety surveys.

As a former InSurv inspector, I'm amazed at some of the things found aloft that have gone unidentified, unreported and/or not acted upon by responsible divisions or departments. The communications, combat systems, operations, and engineering departments



Two electronics technicians third class work aloft on radars. Unfortunately, like the other photo, this one also has its share of safety violations (e.g., ball caps are a no-no in this situation, the hammer and all tools need to be tied off, the Sailor on the right has a line run around his neck and his shoulder strap has slid out of position, neither Sailor appears to have a safety lanyard, and the soda can behind the Sailor on the right could become a drop hazard).

have something installed topside in an aloft zone. It's essential that leadership and maintenance technicians in these departments have the training and awareness for finding all the related personnel and equipment hazards. ❌

At the time the author wrote this story, he was assigned to the Afloat Safety Programs Directorate at the Naval Safety Center.

The opening for this article was adapted from a July 2004 All Hands article entitled "Overcoming Fears Aloft," by Charles L. Ludwig.

If you would like to see a safety brief that hits all the most important aspects of working aloft, you can't do much better than the one that follows. The combat systems maintenance officer aboard USS George Washington (CVN-73)

gave the author a copy, which he used as an example of "how it should be done" during safety-survey visits to the fleet. As noted by the author, "With some minor modifications, you, too, can have a standardized safety brief available for your ship's aloft personnel at the harness-issue point."—Ed.

Resources:

- <http://safetycenter.navy.mil/afloat/surface/downloads/workingaloft.doc> [*working aloft instruction, based on DDG platform*]
- <http://safetycenter.navy.mil/acquisition/fall/> [*Acquisition Safety Fall Protection*]
- <http://safetycenter.navy.mil/orm/checklists/afloat/ENCLOS4A.DOC> [*USS Arkansas Sample ORM Work Permits*]

CVN-73's Answer to Working Aloft Safely

All personnel will adhere to these safety precautions when working aloft:

- Extreme personnel hazards exist on the mast, antenna platforms, and radar tower (e.g., electromagnetic radiation, electrical shock, radar-antenna rotation, and falls).
- In no case will the safety of personnel working aloft be compromised to increase the speed of repairs.
- Personnel shall not go aloft in rain or snow or if winds are expected to be more than 30 knots, unless an emergency exists. In these instances, permission must be granted by the commanding officer.
- All personnel shall keep clear of rotating and/or communications antennas. Do not touch ungrounded cables or structures.
- Personnel shall not lean or rest against safety railings. When work dictates that personnel rest their weight against a safety railing, they first shall secure their safety harness to some rigid structure, other than the safety rail or its stanchions.
- While working aloft, all tools, buckets, paint pots, brushes, etc., must be secured to lanyards, which are fastened to safety harnesses or a rigid structure. All equipment being used must be listed on a tool-inventory list to ensure nothing is left behind when securing. The tool-inventory list shall be maintained by the working-aloft petty officer in charge (POIC). Additionally, personnel working aloft shall not wear covers/hats.
- All personnel working aloft, including the safety observer, must be qualified in accordance with the working-aloft job-qualification requirement. No one shall be allowed to go aloft without an approved full-body safety harness, safety dynamo, and working lanyard. Safety harnesses shall be secured to a rigid structure when going aloft.

Use a climber-sleeve assembly in conjunction with the safety harness when going aloft wherever a climber safety rail is installed (*also see pg. 30*).

- Personnel going aloft shall do so in **pairs**, and a safety observer will be used. The safety observer will be stationed at the base of the mast for groups going aloft on the main mast, and on the 010 and 1/2 level aft (flag-bag platform) for groups going aloft on the AN/SPS-49 radar tower. The safety observer shall be dressed out with all safety equipment required for going aloft. The safety observer also must establish communications with the combat systems maintenance center (CSMC) watch, via the X6J sound-powered phone circuit. He/she shall be positioned so personnel aloft may be visually observed at all times.
- Should communications be lost between the safety observer and the CSMC watch, the safety observer shall instruct all personnel aloft to descend until communications are restored.
- The POIC will be the **second** person aloft and shall ensure the **first** person in the work detail has properly secured required antenna-rotation safety switches in the "stow/off" position as they ascend.
- Upon completion of work aloft, the POIC for each work detail shall ensure no equipment or tools are left behind. The last POIC descending the mast shall ensure all antenna safety-cutout switches are returned to their normal operating position, ensure all antennas are free from obstruction, and conduct a FOD walkdown of the entire mast.
- The last POIC coming down the mast will direct the safety observer to report to CSMC (via the X6J circuit) that all personnel/equipment have been properly secured from working aloft before requesting to secure communications. 

“Man Overboard, Man Overboard!” MOBI to the Rescue

By Don Neuman,
Naval Sea Systems Command

“**M**an overboard, man overboard!” is one of the more spine-tingling phrases you can hear while serving aboard a Navy ship—especially if you happen to be hearing it from the water as the ship you had been standing on steams away from you. What if no one saw you fall overboard, though?

Fortunately, some seagoing Sailors in today’s Navy don’t have to worry so much about a circumstance like that, thanks to the man overboard identification

(MOBI) system. If you fall overboard with this device, someone will know you have fallen from the ship, whether anyone saw you or not.

Nearly 100 Navy ships, across all classes, already have the MOBI system, and every ship in the fleet is slated to have it installed within the next two years. These installations are being done by alteration installation teams (AITs) at the rate of about one per week. However, the MOBI transmitter currently is installed only on Mk-1 float coats and inherently buoyant life

Navy photo by PH2 Seth C. Peterson



vests, including the float coats of Navy and Marine aviation-support personnel, who bring their own aboard during deployments.

The MOBI system is changing the way Navy ships are alerted to and conduct man-overboard rescues. The system consists of three primary components: transmitters, receivers and direction finders. An individual transmitter, small enough to fit in a specially designed pocket on the float coat, is water-activated within three to five seconds after full submersion. Upon activation, the transmitter sends a signal to the MOBI receiver.

This receiver gives bridge personnel an instant alarm, alerting them to the fact someone has fallen from the ship. With the alarm comes other critical electronic information displayed on the bridge-mounted receiver. This information includes the individual identification of the transmitter and the ship from which it fell.

Once bridge personnel are alerted to a man overboard, radio-direction finders on the bridge and in the rescue boats home in on the MOBI signal and provide a heading. The ship then steers toward that heading.

If an incident occurs at night, the transmitter has an integrated strobe light to provide a visual reference to the survivor. A GPS feature also has been incorporated to fix location and further ease recovery efforts.

It's unknown exactly how many times the MOBI system has been used to rescue Sailors and Marines who have fallen from ships. The only confirmed cases of MOBI use in notifying or recovering personnel involved these five ships: USS *Vicksburg* (CG-69), USS *Abra-*

ham Lincoln (CVN-72), USS *Mobile Bay* (CG-53), USS *Leyte Gulf* (CG-55), and USS *Belleau Wood* (LHA-3).

Many man-overboard incidents, however, occur when the person who has fallen from the ship isn't wearing a flotation device. As a result, many commanding officers who have had the ShipAlt installed have requested a transmitter for each embarked Sailor and Marine to provide increased safety measures for everyone on board. With each transmitter costing about the same as a float coat, such requests are not cost-prohibitive.

In late 2006, the Navy evaluated one-per-man transmitters aboard USS *Leyte Gulf* and USS *German-town*. Each embarked Sailor and Marine was assigned a transmitter, which didn't have to be worn on a float coat, for the duration of the deployment.

These two ships recommended that the Navy protect all embarked Sailors and Marines with a MOBI transmitter. This recommendation, however, came with some recommended design changes, which are being made by the manufacturer, BriarTek Inc. It's likely that modified one-per-person MOBI transmitters will be tested again before the end of the year.

As the Navy increases the number of joint exercises and operations with allied navies, the capability to be interoperable is increasingly important, especially in areas of safety. The Navy already has fielded a number of inquiries from foreign counterparts about the MOBI system. In February 2007, the Navy provided a formal briefing of the MOBI system to a NATO working group charged with safety standardization. As a result of that briefing, a number of foreign navies are actively evaluating the MOBI system.

With the current emphasis on increasing safety awareness and safety measures from the secretary of defense and the secretary of the Navy, the MOBI system has proven to be a cost-effective tool.

The next time you or a loved one deploys, everyone involved should feel a little more assurance about your safety since you may be wearing a MOBI transmitter. ■

The author is the MOBI program manager at NavSea.

Resources:

- <http://safetycenter.navy.mil/media/fathom/issues/OctDec02/pdf/mobi.PDF> [*MOBI: New Device Will Revolutionize Man-Overboard Responses*]
- <http://safetycenter.navy.mil/media/fathom/issues/OctDec02/Overboard.htm> [*Abe Tests New Man-Overboard Detector*]



BEST PRACTICES

USS *Kitty Hawk* Sailors Play To Win

By Cdr. Jim Koeltzow,
USS *Kitty Hawk* (CV-63)

It's late in the fourth quarter, with your favorite NFL team leading, but instead of aggressively going for a decisive, killing blow, the coach tells his team to hold the ball and try to run time off the clock. Ultimately, the team has to kick the ball, then play defense. The opponent subsequently marches down the field in a desperate frenzy and somehow

figures out a way to score just enough points to win the game in the final moments of play.

Sound familiar? Let's face it; we've all seen this scenario unfold at one time or another.

The safety team aboard USS *Kitty Hawk*, however, has taken this lesson to heart. We play to win!

Our concept is focused on the principle that it

The aircraft carrier USS *Kitty Hawk* pulls into Laem Chabang, Thailand, during its summer 2006 cruise.



Navy photo by MC3 Stephen Rowe

takes an uncompromising positive mental attitude to be successful. Safety has a tendency to orient itself on trying not to make mistakes. We look at it the other way: If we concentrate on executing to by-the-book perfection, the chance for errors decreases significantly.

We incorporate many lessons from the sports world to illustrate qualities that are found in winning teams and in winning organizations. Sports are a great medium to illustrate ideas you can link across various shipboard tasks. Most Sailors have played sports, so they can relate to the ideas and then translate the message to their tasks. I try to incorporate winning lessons into all of our ORM briefs for complex evolutions, such as RAS, navigation and missile exercises, which require significant teamwork.

I use golf-swing fundamentals to emphasize repetition of known procedures, and I use basketball free-throw shooting to illustrate that practice makes perfect. I often cite Magic Johnson's ability to make others around him play better and Scotty Bowman's detailed game plans and emphasis on by-the-book game-time execution.

When I discussed the concept and some of my ideas with the commanding officer, Capt. E. P. McNamee, he gave me my plan his full support. He liked the positive message. His primary concern was the ominous challenge: how to consistently get the word out to all hands.

"We have a very talented crew of dedicated professionals and an aging asset that remains in top-notch condition," said the CO. "If there's a new way to help us stay focused and striving to be the best, I'm all for it."

When I first came to Yokosuka, DC1 Rodriguez invited me to try out for one of the ship's softball



The author has incorporated many lessons from the sports world into a winning safety program aboard *Kitty Hawk*.

teams. Our first practice wasn't just about throwing around the ball and taking batting practice. We were talking fundamentals, taking infield practice without gloves, setting up game situations, and emphasizing positioning and hitting the cutoff man. I thought to myself: "This is the formula for a winning team."

Despite being a team with a preponderance of engineering personnel and many nights of last-minute line-up shuffling to accommodate work schedules, we went on to win the Yokosuka Class A Intramural Softball Summer 2006 championship. More importantly, we gained the framework for an innovative approach to shipboard safety during our summer 2006 underway period. ■

The author is the ship's safety officer.



Ladder-Climber Safety-Rail Systems

Interim Safety Advisory

Issued for Fall Protection

Maintenance and repair of equipment at high elevations present significant fall hazards when workers access the equipment by climbing vertical ladders. Ashore, fixed vertical ladders often are designed with the familiar cage enclosures that meet OSHA regulations but do not, by themselves, provide state-of-the-

who uses these ladder-climber-rail systems, both ashore and afloat, of the safety notices concerning them and pending product recalls.

Fixed-rail fall-prevention systems can provide safe, effective climbing conditions for workers on any site and on straight or curved ladders. On water tanks, chimneys, antennas, communication towers, wind generators, ship's masts, or any other structure, rigid-rail fall-prevention systems give climbers the protection and security they need to be effective and productive (*see fig. 1*).



Fig. 1—A worker moves along a water tower's curved surface using a fixed-rail system.

art fall protection. The method of fall protection commonly used shipboard is a fixed-rail climber-safety system attached to the ladder. It provides an alternative to cage designs, as well as greater benefit in terms of fall protection.

This article highlights recent safety concerns with these fixed-rail systems, offers interim hazard-control measures, and provides guidance for minimizing the risk of falls during climbing operations. It is important to advise everyone

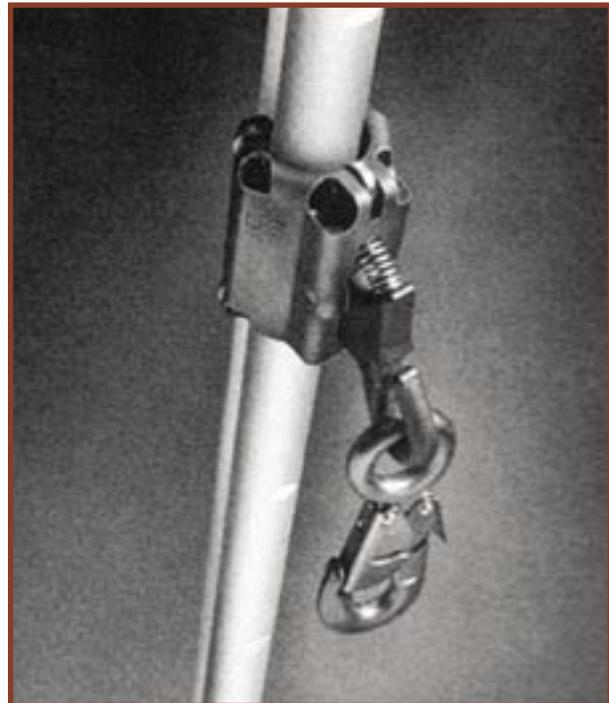


Fig. 2—People who use this Antenna Products SCE-2 safety sleeve and rail are urged also to use a shock-absorbing Y-lanyard.



Fig. 3—This North Safety Products Saf-T-Lok climber sleeve is another device for which it's recommended that users have a shock-absorbing Y-lanyard in place, too.

The major benefit of these fixed-rail systems is that they provide secure attachment of the climber's harness to the rail and sleeve, automatically actuate a locking pawl in case of a fall, and lock the sleeve onto the notched rail. The safety sleeve therefore allows the climber to focus on climbing and keep his/her hands on the ladder at all times.

However, fall incidents involving fixed-rail ladder-climbing systems have been reported in the Netherlands, Austria and Germany. Three cases, one fatal, involved the arrestor sleeve running off the end of the rail, even though end stops were installed. In two cases, falls occurred with little injury, although the arrestor sleeves failed to operate properly. In two more cases, device failure resulted in death or serious injury, and in one instance, the arrestor functioned properly, but the connector failed, causing serious injury. As a result of these employee falls and/or slippage of the fall-arrestor sleeve along the rail, two suppliers of fixed-rail climber-safety systems have issued safety notices regarding these products and their usage. Both have indicated that, upon design review and change, the existing safety sleeves will be recalled and free replacements issued.

North Safety Products, manufacturers of the Saf-T-Climb fall-protection system, issued an advisory in late October 2006. The advisory noted that a product review and upgrade was being conducted, and based on that review, a recall and free replacement of the existing safety sleeves would be the probable outcome. On 12 March 2007, Antenna Products Corporation followed with a similar safety notice, stating that “under certain conditions, the SCE-2 safety sleeves may fail to function as designed and may allow a climber to free-fall a distance sufficient to cause serious injuries or death.”

Both advisories recommend the use of a shock-absorbing Y-lanyard, in addition to or in place of the safety sleeve, as an interim measure to minimize the fall potential. Access both safety advisories from the Safety Center's website at www.safetycenter.navy.mil/ashore/recalls/.

Affected climber-safety sleeves are the following:

- Antenna Products Corp. (Cage 06032), SCE-2 sleeve, part No. 1000-1672-401 and 1000-0425-401, NSN (9B)4240-01-042-9688. Refer to www.antennaproducts.com/tubular.html (*see fig. 2*).
- North Safety Products (Cage: 0VTP4), Saf-T-Lok sleeve, part No. 602-100-001 and 602-100-002, NSN (9B)5445-00-915-3121. Refer to www.saf-t-climb.com (*see fig. 3*).

These two suppliers account for most, if not all, of the climber sleeves used in the fleet. Ashore, however, it is not clear how widespread the usage of these ladder-climber systems may be, or whether similar products by other vendors are in use. If other vendors' sleeves are being used,



Fig. 4—A double shock-absorbing North Saf-T-Y lanyard like this is recommended when using the items in figures 2 and 3.



Fig. 5—Here is an offset climber-rail installation on a narrow shipboard ladder. Installation in the center of a ladder is preferred.

they also may exhibit the same design deficiency and should be subject to the same level of inspection, use of shock-absorbing Y-lanyards (as an interim safety measure), and follow-up with the manufacturer regarding the safety of use and/or recall status of the safety sleeve.

Interim Control Measure

All users of climber-safety sleeves **must** tie off with an appropriate shock-absorbing Y-lanyard, not more than six feet long and which complies with the ANSI Z359.1 standard, Safety Requirements for Personal Fall-Arrest Systems, Subsystems and Components. The Y or double lanyard allows the climber to be tied off by at least one leg of the lanyard at all times, during the climb. These lanyards must be used in accordance with the instructions of the manufacturer or supplier.

Users of all Antenna Products SCE-2 climber systems and North Saf-T-Climb stainless steel or galvanized rail systems must use the double or

Y-lanyard **in addition to** (e.g., as a supplement to) the climber sleeve and harness equipment.

Users of North systems having aluminum rails must use **only** the double or Y-lanyard, instead of the climber sleeve. For further guidance or clarification, refer to the specific manufacturer's safety notice. This interim guidance remains in effect until the recall of the current climber-safety sleeves is resolved and/or further guidance is formally published.

Additional Guidance

The use of Y lanyards impedes the rate of climbing. Climbers will be required to latch and unlatch alternate snap hooks every two to three ladder treads. Therefore, it is critically important that caution be exercised when performing this leap-frogging action, because hands are not dedicated solely to the act of climbing. Until Y lanyards and/or replacement sleeves are available, it is recommended that climbing aloft be limited to essential purposes only.

Climbers should exercise the following caution when ascending or descending a ladder with a climber-safety rail:

- Keep body as vertical as possible and tight against the ladder face.
- Hands shall be free and dedicated to climbing only.
- All equipment and tools shall be hoisted up or down with a tether line or carried in backpacks.

All users immediately shall inspect all climber-safety sleeves in accordance with PMS maintenance requirements cards (MRCs) or the manufacturer's maintenance guidelines. Pay particular attention to the condition of the locking pawl to ensure its tip is not worn or dam-



Fig. 6—An MSA lanyard with tie-back rings like this is an authorized model.



Fig. 7—Another authorized lanyard is this DBI-SALA EZ Stop II.

aged. Ensure springs are operational and that the locking pawl returns freely to the catch position when released. Remove any discrepant or suspect sleeves from service and retain for turn-in during the recall effort.

Inspect all ladder-climber safety rails and mounting brackets. Pay particular attention to the mounting hardware. Ensure that hardware securing the climber rail to guide channel and climber rail to structural mounting brackets are not loose, missing or broken. Ensure ladder-rail notches are not deformed or clogged with dirt/debris. (*Note: Notches should be 5/32-inch deep with a square bottom*). Where sections of climber rails are spliced together, ensure a connecting strap is installed. If discrepancies are found, remove ladder and climber rail from service and report discrepancies to the workcenter supervisor for corrective action.

All users of ladder-climber safety-rail systems, sleeves and Y lanyards must be trained in the appropriate donning, attachment points, usage procedures, and routine inspections of the equipment.

Afloat users of fixed-rail ladder-climber-safety systems and sleeves should refer to the NAVSSES In-Service Engineering Advisory No. 029-07, Safety Recall/Notice of Climber Safety Sleeves on Surface Ships and Procedures.

Recommended Vendors

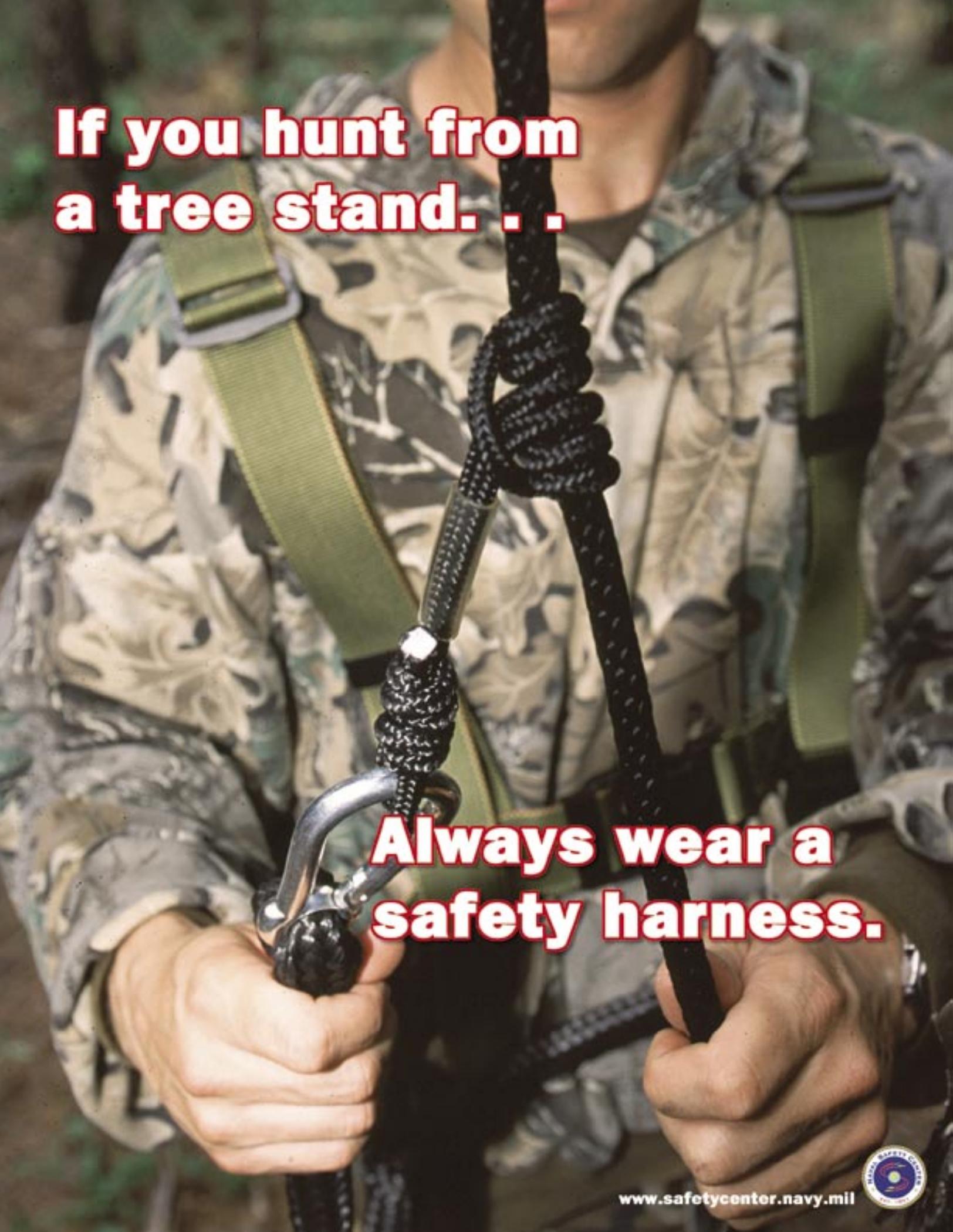
Authorized Y lanyards can be purchased from the following vendors, at a cost range of \$75-\$150 each:

- MSA part No. 10021673, lanyard with Dynabrace, twin leg, with tie-back rings (*see fig. 6*).
- MSA part No. 10021661, lanyard with Dynabrace. MSA customer service POC: Karen Limbert, (866) 672-1001, request ext. 3090, or e-mail karen.limbert@msanet.com.
- DBI-SALA part No. 1220416, EZ Stop II shock-absorbing lanyard. Contact DBI-SALA customer service at (800) 328-6146, selection No. 1. E-mail solutions@capitalsafety.com (*see fig. 7*).
- North Safety Products, part No. 732-201-076, Saf-T-Y-Lanyard. North customer service POC: Tina Bhela, (416) 675-2810, ext. 313, e-mail tbhela@northsafety.ca. (*see fig. 4*). ■

References

- OPNAVINST 5100.23G, Navy Safety and Occupational Health Manual, Chapter 13.
- North Safety Products – Safety Notice – Re: Use of Shock-Absorbing Y-Type Lanyards – 30 Oct 2006 (*see www.saf-t-climb.com*).
- Antenna Products Corp. – Safety Notice – SCE-2 Safety Climb Fall-Protection Systems dated 28 Feb 07 and revised 12 March 2007 (*see www.antennaproducts.com/tubular.html*).
- NAVSURFWARCEN NAVSSES Philadelphia PA, R171205Z MAY 07 – ISE Advisory 029-07 – Safety Recall/Notice of Climber-Safety Sleeves on Surface Ships and Procedures (*refer to www.safetycenter.navy.mil/ashore/recalls*).

POC: Chuck Almond, Code 26
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A close-up photograph of a person wearing camouflage clothing and a green safety harness. The person is holding a thick black rope with both hands. One hand is positioned near a silver metal carabiner attached to the rope, while the other hand is near a knot. The background is a blurred natural setting.

**If you hunt from
a tree stand. . .**

**Always wear a
safety harness.**

