

Reducing Mishaps · Saving Lives · Improving Readiness

SEA & SHORE

WINTER 2005-06

The Naval Safety Center's Magazine for Afloat and Shore Safety

A diver in a red dry suit is working on a ship's hull. The diver is wearing a blue and white diving mask and a yellow and blue glove. A large blue air hose is connected to the diver's equipment. The diver is using a hammer to work on the hull. The background is dark and shows the ship's structure.

**Expecting
the Unexpected...**

SEA & SHORE

The Naval Safety Center's Magazine for Afloat and Shore Safety

Vol. 8, No. 1, 2005-06

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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.

Sea&Shore (ISSN 1550-1434) is published quarterly by Commander, Naval Safety Center, and is an authorized publication for members of the Department of Defense.

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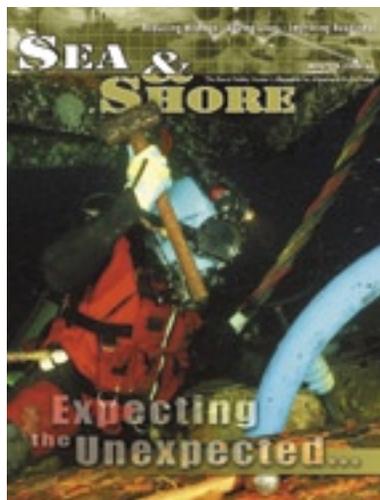
COAST GUARD: Send address changes or requests for more copies to Commandant, USCG, G-KSE, U.S. Coast Guard Headquarters, 2100 2nd St., S.W., Washington, DC 20593.

MARINE CORPS: To be added to *Sea&Shore's* distribution list, increase or decrease number of copies, or take yourself off the list, see your unit publications clerk and have him access MCPDS, *Sea&Shore's* PCN is 74000001900.

POSTMASTER: Send address changes to: Commander, Naval Safety Center
 Attn: *Sea&Shore*, Code 71A
 375 A Street, Norfolk, VA 23511-4399

Send articles and letters to the address above, or e-mail the editor, kenneth.testorff@navy.mil. Visit us on-line at www.safetycenter.navy.mil.

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 Navy photo by PH2 Eric Lippman.

Cover graphics by Jeff Hobrath of KR Systems, Inc. (krsystems.com)

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STATEMENT OF OWNERSHIP, MANAGEMENT AND CIRCULATION 01 October 2005

The United States Postal Service requires all publications publish a statement of ownership, management and circulation.

Date – 01 October 2005

Title of Publication – Sea&Shore

ISSN – Publication No. – 1550-1434

Frequency of Issue – Quarterly

Publisher – U.S. Navy

Editor – Ken Testorff

Owner – United States Navy

Total No. Copies Printed – 29,266

No. Copies Distributed – 28,941

No. Copies Not Distributed – 325

Total Copies Distributed and

Not Distributed – 29,266

Issue Date for Circulation Data

Above – Fall 2005

Location of Office of Publication

Commander

Naval Safety Center

375 A Street

Norfolk VA 23511-4399



Admiral's CORNER

FROM COMMANDER, NAVAL SAFETY CENTER



Why Motorcyclists Must Wear Their PPE

A 19-year-old, student E-3 wrecked his motorcycle. He was admitted to a hospital with broken right foot, arm and femur; a collapsed lung; and lacerated liver. According to eyewitnesses and the police officer at the scene, the E-3 suddenly had downshifted while rounding a curve at about 30 mph, causing the front wheel to slide out from under him. The bike hit the ground and slid under a parked truck.

A line-of-duty investigation concluded that the E-3 had purchased his motorcycle three days before the incident and had a motorcycle operator's permit. However, he had not completed the basic rider course, and he wasn't wearing all the required PPE (didn't have on gloves, long sleeves, and boots).

This mishap resulted in the E-3 losing 65 work-days, and he spent eight months on light duty for rehabilitation and recovery.

Elsewhere, a 21-year-old E-4 was giving his friend, a 20-year-old E-4, a ride to pick up the latter's motorcycle. The passenger E-4 wasn't wearing any safety equipment because his own was with his motorcycle.

As the operator was slowing for a red traffic light, it turned green, and the operator accelerated. The passenger was caught off guard, lost his grip, and fell off the rear of the motorcycle. He hit his head on the pavement, causing a laceration that required 12 staples to close; he also suffered road rash on his shoulders and back, all of which resulted in a 48-hour hospital stay.

As reflected in a Feb. 14, 2005 message issued to wing commanders and commanding officers during my tenure as CNATRA, I feel strongly about

people being held accountable for their actions, including those who choose to ride motorcycles. In that message, I warned:

"Motorcycle riders will wear all appropriate personal protective equipment at all times, both on and off base. This includes helmets and reflective vests/clothing and is mandatory for all military personnel, regardless of state statutes. Non-compliance will result in revocation of on-base driving privileges, citation for failure to obey a lawful order, and may characterize line-of-duty findings in the event of accident, debilitating injury, or death. Ensure this word gets out, as enforcement will directly affect the loved ones of those who willfully disobey these mandates and get injured or worse."

That tough stance was precipitated by the fact that between Feb. 6 and 14, 2005, there had been three fatalities within Navy Region South and NATRACOM—among them, two recreational and off-duty safety (RODS) deaths. Meanwhile, FY05 totals for Navy/USMC personal motor-vehicle and RODS fatalities stood at 44 and 10, respectively, on Feb. 14. In other words, 54 real people—fathers, mothers, sisters, brothers, sons, daughters, and shipmates—were gone forever.

I said then, "It must stop!" And, I still feel the same way.

RADM George Mayer

WORK ZONE

Winter Driving

Driving in the winter means snow, sleet and ice that can lead to slower traffic, hazardous road conditions, hot tempers, and unforeseen dangers. To help you make it safely through winter, here are some suggestions from the National Safety Council.

Weather. At any temperature, weather affects road and driving conditions and can pose serious problems. It's important to listen to forecasts on the radio, TV, and cable-weather channel, or read the forecasts in the daily newspapers.

Your Car. Here's how to prepare your car for winter:

- Check the ignition, brakes, wiring, hoses, and fan belts.
- Change and adjust the spark plugs.
- Check the air, fuel and emission filters, as well as the PCV valve.
- Inspect the distributor.
- Check the battery.
- Check the tires for air, sidewall wear, and tread depth.
- Check the antifreeze level and the freeze line.

Your car should have a tune-up (check the owner's manual for the recommended interval) to ensure better gas mileage, quicker starts, and faster response on pick-up and passing power.

Necessary Equipment. An emergency situation on the road can arise at any time, and you must be prepared. Besides making sure your car has a tune-up, a full tank of gas, and fresh antifreeze, you should carry these items in your trunk:

- A properly inflated spare tire, wheel wrench, and tripod-type jack
- A shovel
- Jumper cables
- Tow and tire chains
- A bag of salt or cat litter
- Tool kit

Essential Supplies. Be prepared with a "survival kit" that always stays in the car and that you replenish after use. The kit should contain these essential supplies:

- Working flashlight and extra batteries
- Reflective triangles and brightly colored cloth
- Compass
- First-aid kit
- Exterior windshield cleaner
- Ice scraper and snowbrush
- Wooden-stick matches in a waterproof container
- Scissors and string or cord
- Non-perishable, high-energy foods, like unsalted canned nuts, dried fruits, and hard candy.

If you're driving long distances under cold, snowy and icy conditions, you also should carry supplies to keep you warm, such as heavy woolen mittens, socks, a cap, and blankets.

Stranding. If you become stranded, follow these tips:

- Don't leave your car unless you know exactly where you are, how far it is to help, and are certain you'll improve your situation.
- To attract attention, light two flares and place one a safe distance away from each end of the car. Hang a brightly colored cloth from your antenna.
- If you're sure the car's exhaust pipe isn't blocked, run the engine and heater for about 10 minutes every hour or so, depending on the amount of gas in the tank.
- To protect yourself from frostbite and hypothermia, use the woolen items and blankets to keep warm.
- Keep at least one window open slightly. Heavy snow and ice can seal a car shut.
- Eat some hard candy to keep your mouth moist. ■

Permission to reprint granted by the National Safety Council, a membership organization dedicated to protecting life and promoting health.

Best Practices

Taking Care of Their Own From the Top Down

By Cdr. Dan Spagone,
SWOS Command, Newport R. I.

Motorcycle safety begins at the top aboard USS *Peleliu*, where the CO, XO, CHENG, MPA, dental doc, and several other wardroom and CPO mess members all ride motorcycles. The ship's safety officer has set up a database that tracks information on every motorcycle rider.

When Sailors report aboard *Peleliu* for duty, they are questioned at I-Division about their drivers' and motorcycle licenses. They also are lectured on motor-vehicle and motorcycle safety, then are offered an opportunity to attend both the driver-safety course and motorcycle-safety class during normal working hours on no-cost TAD orders. The ship further has every motorcycle rider read, agree to, and sign a page-13 entry that states they understand and will follow DoD motorcycle-safety regulations. Finally, every safety stand-down features encouragement to all riders to attend the advanced motorcycle-safety course; no-cost TAD orders are made available for those riders who want to attend.

Sailors aboard *Peleliu* often are

invited to ride with the CO for short day trips over the weekends. These trips give younger, more aggressive riders a chance to have fun while learning to ride safely with more experienced riders. "Sailors don't always do what we say, but they usually do what we do," said the engineer officer.

Another initiative the CO has adopted is to bring all *Peleliu* motorcycle riders aboard the ship and have them ride their bikes up the vehicle ramps to the flight deck for a group photo in front of the big "5" on the island. Once everyone is assembled, the safety officer and his staff check for proper PPE, drivers' licenses, and Basic Motorcycle Rider course certification cards. All motorcycles also get a cursory inspection for condition and to make sure they meet both state and naval base regulations.

During a trip between the ship's homeport and Hawaii, the CO offered motorcycle riders who meet all DoD standards an opportunity to bring their bikes on board for the roundtrip cruise. "Just in time" refresher training was provided to all riders during the transit. ■

The author is a former Naval Safety Center employee.

Navy photo by PH3 Ryan M. Kitchell

Looking Out for Shipmates Is All-Hands Job

By JO2 Kimberly R. Stephens,
USS *Theodore Roosevelt* (CVN-71)

On any given day, families are hoping and praying their loved ones will return home from deployment, a temporary duty assignment, or from war. Let's face it: Being in the military can have its consequences. Plenty of risks exist on the job, but Sailors get hurt and killed other ways, too.

Sailors on USS *Theodore Roosevelt* must take safety seriously, whether on the job or off. "We rarely see injuries to people while doing their actual duties on the ship," said HMC Michael Felton. "Why? Because Sailors know the safety rules for their jobs. It's usually the non-working time, while doing something like transiting a passageway, playing around in berthing, or exercising on the hangar bay, when injuries occur."

"Safety first, and keep your head on a swivel" are phrases *TR* Sailors hear frequently. What do they mean? You must pay attention to your surroundings all the time. A ship at sea is one of the most dangerous environments anywhere; everything around the crew is unforgiving.

"With all the work being done around the deck plates, it's important to maintain situational awareness," said YN2 Courtney M. Hart of the safety department. "You always have to be prepared for the unexpected.

"Complacency is one of the leading contributors to injuries," Hart continued. "Sailors doing the same job day in and day out get into a routine and start feeling like nothing will

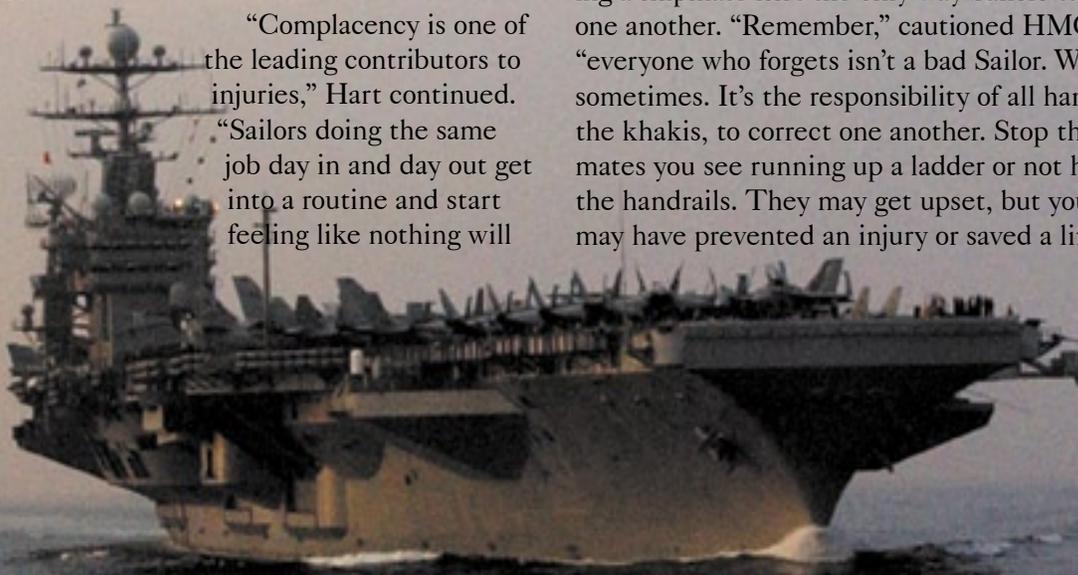
happen. This over-confidence leads to rushing, cutting corners, and making mistakes."

It's then that something as simple as transiting a passageway or climbing a ladder can become life-threatening. "One of the major issues we see in the safety office," explained Hart, "is people rushing up and down the ladders without holding the handrails or sliding down the rails to the next level."

"Now that we're well into our current deployment," added HMC Felton, "some of our junior troops think they have their 'sea legs' and have started slacking. It's now that we most often hear 'medical emergency, medical emergency' called away over the 1MC."

What kinds of injuries occur aboard ship? "On the lighter side, everything from bleeding lacerations to blunt traumas and bruises," according to Felton. "On the moderate side, we have bad sprains, strains and back injuries. Broken bones, dislocated hips and shoulders, and, recently, a fractured vertebra, round out our serious injuries. So far, we've been lucky; none of our shipmates have died."

Safety often is as simple as paying attention and getting help from another shipmate, but just helping a shipmate isn't the only way Sailors can help one another. "Remember," cautioned HMC Felton, "everyone who forgets isn't a bad Sailor. We all forget sometimes. It's the responsibility of all hands, not just the khakis, to correct one another. Stop those shipmates you see running up a ladder or not holding onto the handrails. They may get upset, but you very well may have prevented an injury or saved a life." ■



Navy photo by JO3 Joe Burgess

Don't Ask, Don't

A ship's standing orders called for the OOD or XO to brief the CO anytime he walked on the bridge, but that didn't happen. Likewise, the CO didn't ask for a report on the operational picture. That lack of situational awareness led to some equipment being damaged and lost and some Sailors being injured when their RHIB was swamped by screw wash.

This incident happened while a ship was on station in the North Arabian Gulf, conducting maritime interdiction operations (MIO) in support of Operation Iraqi Freedom. The area was a deep-water anchorage for several large tankers and cargo vessels, waiting to be boarded or to be authorized entry into port.

At the start of this evolution, one vessel was approximately 1,000 yards off the Navy ship's port bow, with another anchored about 1,200 yards off the starboard bow. The Navy ship's course was 235 degrees, and the engines were at all stop. The wind was on the starboard bow; the current (2 knots) was setting the ship to starboard, resulting in a 258 course over ground.

Everything was OK as the Sailors manned the port boat deck to lower a RHIB for transporting one of the ship's visit, board, search, and seizure (VBSS) teams to the vessel on the port bow. The ship's deck department lowered the RHIB without incident and moved it to the port-side fantail to embark the VBSS team.

During the time this team was being embarked, the ship slowly was being set down on the vessel on its starboard bow. About 10 of the 13 VBSS members had boarded the RHIB when the ship's CO appeared on the bridge.

Seeing his ship being set down on the anchored vessel, the ship's CO ordered, "Hard right rudder." The OOD, however, told the CO if he was concerned about being set down on the anchored vessel, he should order a left rudder. The CO then ordered the conning officer to shift the rudder.



Navy photo by PH1 Greg Messier

Upon being informed the ship was at all stop, the CO ordered, "All engines ahead one-third for five knots." Shortly thereafter, he ordered a port twist (starboard engine ahead two-thirds and port engine back one-third). The OOD immediately informed the CO that the RHIB still was tied up along the port-side fantail, which caused the CO to order, "All engines stop."

Momentarily, the XO (on hydra radio with the fantail) called away "man overboard" over the 1MC. Screw wash from the port screw during the port-twist maneuver had caused water to flow over the RHIB's sponson, and the craft capsized. Ten VBSS-team members and three boat-crew members had been thrown into the water.

The ship launched the starboard RHIB and recovered all hands. Four VBSS-team members suffered minor injuries, and the port RHIB sustained minor damage to the bridge-to-bridge radio and electrical system. One 12-gauge shotgun, 600 rounds of M60 ammunition, and 90 rounds of 12-gauge ammunition also were lost when boarding-team members jettisoned them.

What are the lessons learned from this mishap?

Tell



Navy photo by PH1 Bart Bauer

Navy photo by PHAN Rex Nelson



The critical point of failure was the CO not having the full operational picture when he came on the bridge. Had the OOD or XO briefed him when he first arrived (as required by standing orders), or had the CO asked for a report, he would have known about the RHIB's location and the VBSS team's embarkation in progress. This knowledge undoubtedly would have precluded his ordering the port twist that ultimately swamped the RHIB.

When this incident occurred, the ship had been conducting multiple VBSS boardings each day for about two weeks in close proximity to numerous anchored vessels. It's likely a sense of normalcy or complacency had developed that allowed inherently dangerous operations to become routine.

To ensure there are no recurrences, all tactical watchstanders (including OODs, conning officers, CIC watch officers, and tactical-action officers) aboard the ship thoroughly reviewed the CO's standing orders. They discussed the implications of allowing themselves to get complacent while operating in dangerous situations.

The ship also implemented a new standing order for small-boat operations to ensure positive control of all internal and external variables that affect safe operations. The new standing order cautions against using any backing bell while embarking or debarking personnel. ■

All Jacked Up

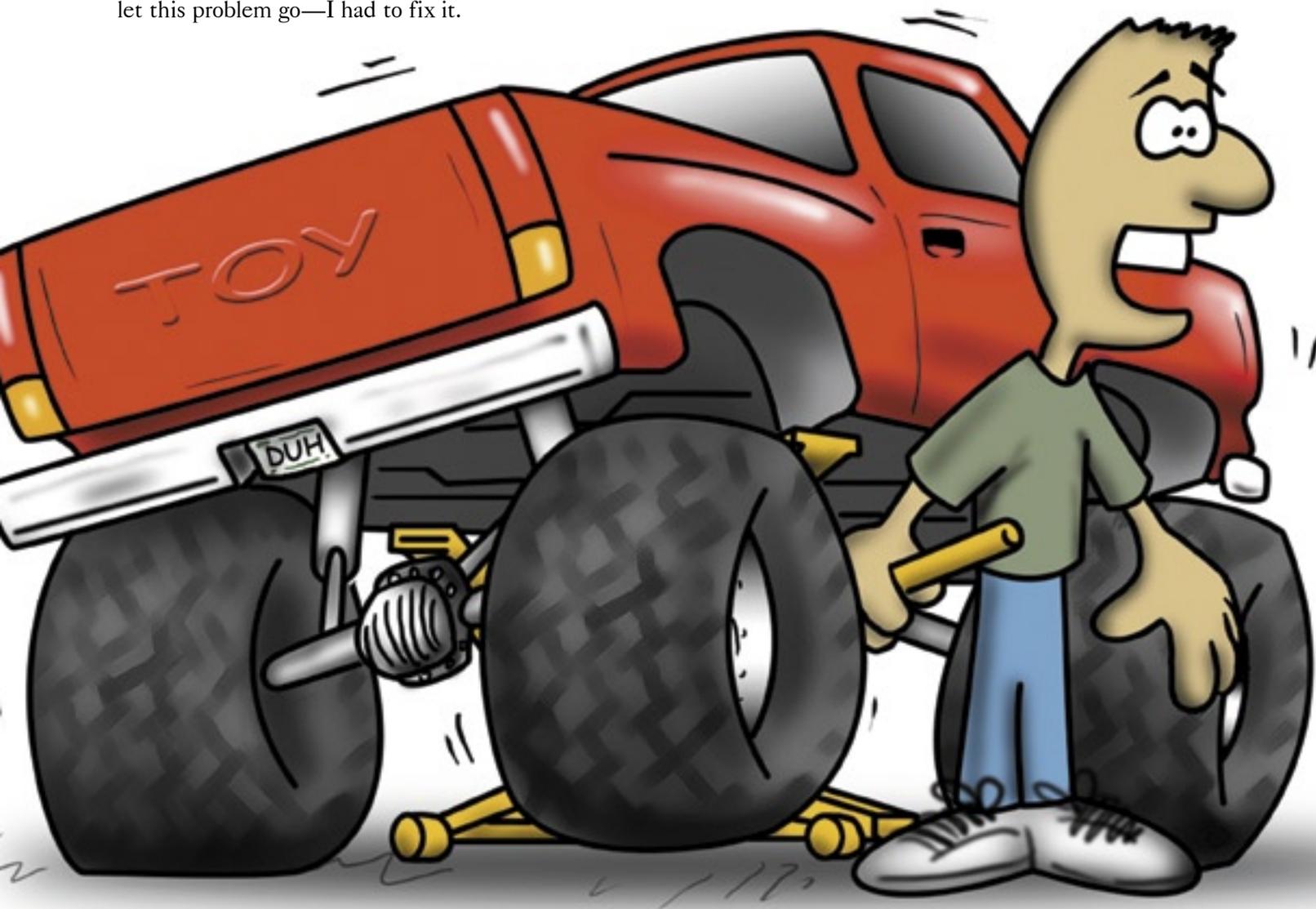
By Cdr. Christopher E. Sund,
Organization of the Joint Chiefs of Staff

Recreational activities often are in the mind of the beholder. I find that doing routine maintenance, and sometimes not-so-routine maintenance, on my 14-year-old pickup can be one of my most enjoyable recreational activities.

My truck is nothing special to most people, but, to me, it is a source of constant pride. You can imagine the heartache it caused me to drive around with a broken lug nut on the right, rear wheel. I just couldn't let this problem go—I had to fix it.

Besides, I have this really cool floor jack that was aching to be used. It was the kind you see NASCAR pit crews sling around so effortlessly. How hard could it be to lift a truck and repair a broken lug? On TV, it looks like a two-minute job. I'm here to tell you that those harmless-looking floor jacks can be one of the most dangerous tools in your garage.

My job started well. After I had chocked the front wheels, lifted the truck, and removed the wheel,



it took only about a half-hour to figure out how to remove the broken lug and replace it with a new one. I don't consider myself slow—just meticulous. I didn't want to do the job so fast my neighbors would miss the sight of me with a floor jack and dirty hands, doing my own maintenance. Besides, half the fun is letting all the guys come over and tell me the right way to do the job.

The one thing nobody noticed was my precarious positioning of the floor jack under the axle and the fact the jack handle was close to the frame rail. When I got tired of showing off and had finished checking out all the various parts, replacing the wheel, and snugging down the lugs, it was time to twist the floor-jack handle and let the pickup return to the ground. Here is where things went wrong for me.

I was so focused on the actual jack point on the axle and making sure the truck was clear of all obstacles when I eased it back down that I didn't notice the position

of my right hand. It was on top of the jack handle, directly under the frame rail. As I slowly released the pressure from the jack, the frame rail settled on my right thumb, which was clamped firmly around the jack handle. The 3,500-pound truck trapped my thumb like a mouse in a trap. I didn't feel the pain as much as I did the instant embarrassment.

I quickly called out to my wife, who came to see what kind of a mess I had gotten myself into this time. Together, we lifted the truck enough so I could pull out my thumb. It took only one look to know my wife needed to take me to an emergency room—my thumb was a crushed mess. Unfortunately, her car was parked in front of my now-half-jacked truck, so she couldn't help me. I was able to convince my neighbor to take me to the hospital. The on-call doctor banded up my thumb until I could see a hand surgeon the next day.

I don't need to cover the details of the two surgeries and subsequent therapy I had. Suffice it to say I was able to keep my thumb, and I nearly have full mobility with it. Here are lessons I learned from this experience:

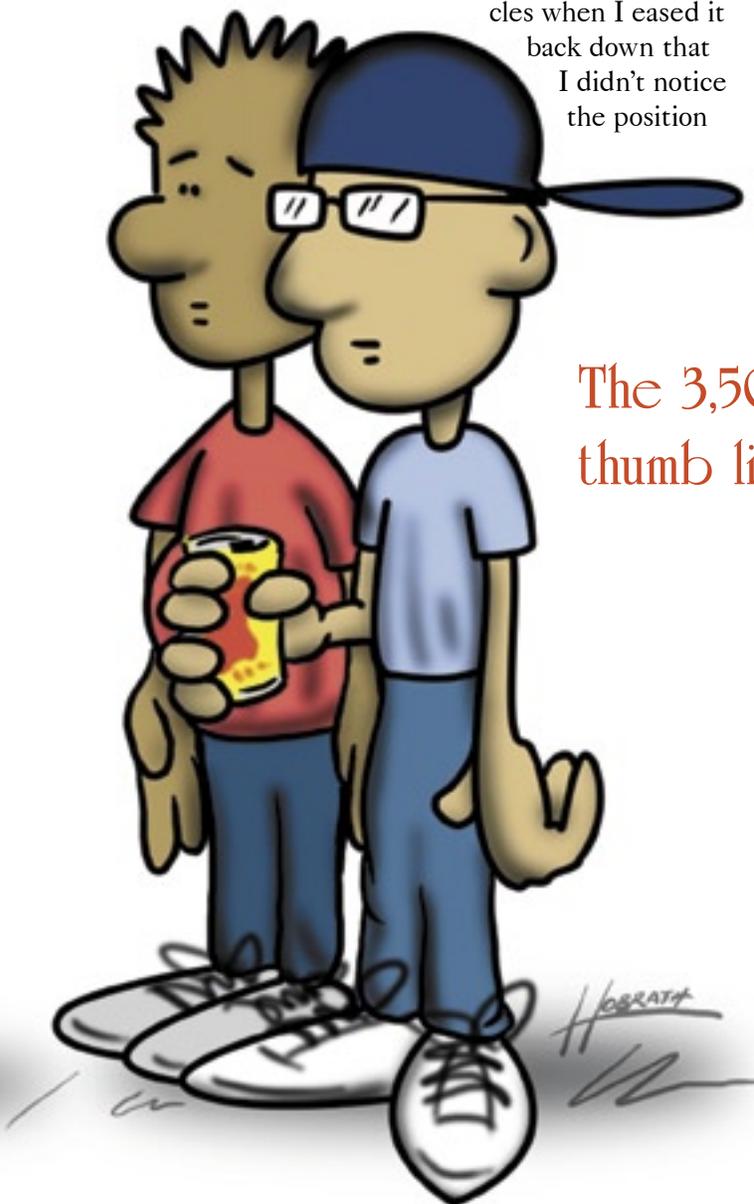
- Floor jacks inherently are dangerous! They quickly can lift heavy objects but can lull an unsuspecting mechanic into a sense of complacency.
- Always use jack stands with floor jacks.

The 3,500-pound truck trapped my thumb like a mouse in a trap.

- Always chock the correct wheels when lifting your vehicle. Lift your vehicle on a level surface.
- When lowering your vehicle, take the time to clear all tools—and body parts—that may be in the path.
- Read the jack's operating instructions and make sure it's working right.

I'm sure a professional mechanic could add some important tips to this list, and you'd probably be smart to see one before using a floor jack. I was lucky—the Navy ensured I had the best medical treatment available, and I was able to keep my thumb. Some people aren't so lucky—I've heard about a few who died in floor-jack mishaps. ■

The author was assigned to VAW-117 when he wrote this story.



Life After

Tragedy

By Dan Steber,
Naval Safety Center

As Navy DC1(SW) Neal Beard strapped into a rented 2003 Mitsubishi Diamante for an Oct. 25, 2003, drive from Corpus Christi to Houston, Texas, he was excited. He had a set of orders. After three ships in four years (split tour between USS *Doyle* and USS *Chief*, and a flag-directed tour aboard USS *Blackhawk*), he was ready for a change. The trip to Houston was to place a down payment on an apartment.

Riding with Petty Officer Beard that day were his children: 11-year-old son, Jesse; 9-year-old daughter, Breana; and 10-year-old son, Brandon. He had sole guardianship of these youngsters, and they were the focus of his life, but he was looking for a new career challenge, too.

The orders to Naval Reserve Center, Houston, would offer such a challenge. It was a chance to become a school-trained instructor.

“I always had wanted to teach,” Neal said. “I spent most of my career training and ‘teaching’ aboard various ships and while ashore. I also had worked with and mentored kids in elementary schools since 1997.”

The Beard family left Corpus Christi at 0940, arrived in Houston around noon, looked at the apartment, and made the payment. Before heading back to Corpus Christi, they stopped for lunch. It was about 1400 before they got on the road for home, with Neal driving, Jesse in the front-passenger seat, and Breana and Brandon settled comfortably in the rear seat. All of them had their seat belts fastened.





“I always had been very emphatic about using seat belts,” Neal said. “I would not move the car unless everyone was buckled up, so my children never questioned it. They were taught from birth to buckle up or to use a child-safety seat.”

It was one of those days that bounced between light and dark as clouds moved across the sky. The lighting changes and the passing scenery were creating a hypnotic state—one that would change the Beard family’s lives forever.

Neal had been busy the past few months. After completing his third training cycle in three years, the final one as the engineering department LPO, he was ready for shore duty. He had left the ship and was TAD to MWR while waiting to transfer. Working on the Navy Ball kept him busy during the day, and taking care of his kids filled his nights. He didn’t get much sleep in the days, weeks and months before the trip to Houston. In fact, Neal said a “good night’s sleep” had meant only five or six hours of shut-eye.

Getting ready for the upcoming move, fretting over marital problems, dealing with work-related issues, and being the father of three had taxed his body and mind. One hundred thoughts raced through his head as he turned the vehicle southbound on U.S. Highway 77. He was tired but didn’t know it.

At 1620, Neal and his family were about 13 miles north of Refugio, Texas, which is about 54 miles from Corpus Christi. Fatigue finally took control, and Neal nodded off. The 2003 Diamante left the road, crossed the median, struck a tractor-trailer, and rolled over, coming to rest upright in a side ditch.

The trucker was OK, but the right front section of his rig was damaged. The front of Petty Officer Beard’s vehicle also was smashed, and the rear end was crushed. He doesn’t remember anything about the events just before or after the mishap. However, the police report contains a quickly sketched drawing that shows the step-by-step details of the mishap.

Pat and Kim Moya of Bay City, Texas, were two of the first people on the scene, which was a god-send. Kim is a licensed vocational nurse (LVN). They parked near the wreckage and ran to the Diamante. She had her husband keep Neal’s airway open, while she gave Brandon CPR, hoping to revive him. They kept Neal alive until paramedics arrived.

“I have no memory of the accident itself,” he said, when asked to recall what had happened. “In fact, I don’t remember much about the two hours before the crash. I was told at one time I’d be lucky to remember anything about the two days leading up to my mishap.”

Neal survived the horrendous crash, as did 11-year-old Jesse. Breana and Brandon, however, were killed instantly.

Neal was in a coma when a HALO Flight took him to Corpus Christi’s Spohn Memorial Hospital at 1720 with serious injuries. His son, Jesse, meanwhile, had been transported to Citizens Hospital in Victoria, Texas, about 20 minutes earlier. Jesse had one cut to the back of his head that required a single staple. He also had a small cut and a chemical burn to the inner bicep.

Texas state troopers tried to find information about Jesse and his family, but, with Neal in a coma,



This pre-mishap photo shows Neal's son, Jesse (behind), along with Brandon and Breana, the two who died in the crash.

the left side and one on the right) and five hemorrhages. His body was hurting, but he still didn't know about the deaths of his beloved son and daughter. That pain would come later.

The doctors and nurses at Spohn Memorial Hospital patched up Neal and sent him by Life Flight to Brook Army Medical Center in San Antonio, Texas. The staff there kept him in a medicinal coma to evaluate his condition, to operate, and to let him heal. He spent 10 weeks in that facility.

"The doctors told my mother I wouldn't be the same Neal she had known just two weeks earlier," said Petty Officer Beard. "They said I probably wouldn't walk or talk. I had an eight on the Glasgow coma scale, which is just inside the severe range. The doctors did well, and I fought through it. However, I can't take the credit because I have no doubt that God healed my brain."

"We prayed that he'd recover," said Linda Smith, Neal's mother, "and, in time, he did. I'm terribly thankful to the truckers, passersby, EMTs, and especially the nurses and doctors at Corpus Christi and Brook Army Medical Center. They saved my son. I also am thankful to Chaplain Moreno at Corpus Christi for his help and to the Navy in general for their tremendous support."

Neal stayed in that drug-induced coma until Nov. 10, and he didn't find out his children had died until Nov. 26. At that point, his family, specifically his two brothers-in-law, already had buried Breana and Brandon. They made a DVD so Neal could see the funeral and burial.

Petty Officer Beard had three skin grafts and a "flap," or plastic-surgery procedure. He also faced 13 weeks of physical therapy and 11 weeks of neuro-cognitive therapy, as well as dental work and other outpatient care. He spent 30 more days on convalescent leave. Neal lost 355 workdays, and the hospital bills

they were stumped. An emergency-contact list, part of a family-care plan, had been inside the vehicle, but it was tossed out during the mishap. Jesse did mention a family member from Oklahoma, and, with only that information, an officer called the Oklahoma State Police. Trooper Duane Miller took the call and pondered what to do next with such little data.

As luck would have it, fellow trooper Nick Green just had left a church event and decided to call the office to see what was happening. He was told about the accident in Texas and subsequent search for a Coast family living in Oklahoma. Nick knew an Eddie Coast, who turned out to be the father-in-law of Neal Beard's sister. Once notified, the Coast family immediately left to get Jesse and to see Neal.

Petty Officer Beard lay in the hospital with several pelvic fractures, a collapsed lung, pneumonia, a full thickness burn at the LUE (left, upper extremity), and a neck fracture at C2. He was in a coma and had some brain damage—seven contusions (six on



Petty Officer Beard as he lay in an ICU after his crash.

friends, families and shipmates also suffered through this loss and the long recovery of a dedicated father and Sailor.

Neal's physical wounds have healed, except for a nagging problem with his elbow and a few other issues. "I improve a little every day," he said. "However, I have a two-to-three degree loss of motion in my elbow. I can't write very well now because it's painful. I also can't run because of dexterity and heart-rate problems, and I have a slight loss of hand-eye coordination." *[Neal has been working hard to overcome these challenges and, as of May 25, 2005, was able to run 1.5 miles in 14 minutes.—Ed.]*

The emotional scars will last a lifetime, and it's hard for Neal to talk about that part of the healing process. He moves on, though, because Jesse still needs him. In fact, they need each other. "If you lose a parent, they call you an orphan," Neal said, pausing slightly. "If you lose a spouse, they call you a widow. But, there's no name for the loss of a child."

This incident, like so many other private motor-vehicle (PMV) mishaps, was preventable. In FY04, the Navy and Marine Corps lost 119 people in PMV crashes. We lost at least 10 of them because of fatigue, but that number could be higher. Data isn't always available in mishap reports, so it's hard to determine the real value. That number, though, compares to 20 people lost in alcohol-related mishaps and 10 who died without seat belts. ■

and other costs totaled \$763,600, but these losses pale in comparison to losing his two young children.

Jesse spent just one night in the hospital and recovered quickly. He occasionally talks about his late brother and sister—he was closest to his brother. He often tells his dad that Brandon would have liked this toy or that game. Jesse also remembers a small detail about that fateful trip. "Dad, you know it was Breana's turn to sit up front," he said. "But, when you were going to pull over and let us switch, I said we could wait because she was asleep—that's why I wasn't in the back."

Neal was cleared of any negligence or wrongdoing; however, he lives with the fact he was the one responsible for the deaths of his two children. Neal and Jesse dearly miss Breana and Brandon. Their

It was tough for DC1(SW) Neal Beard to share this story and to relive such a horrific incident. He bared his heart and soul to make us all think before we get in our cars or climb on our motorcycles. His story reminds us that a PMV mishap reaches beyond the victim; it affects everyone—from family, to friends, to the survivors. It also warns us of the danger from stress and cumulative sleep-deprivation. I applaud his courage and hope you will learn a lesson from his story.

On Neal's website (www.nealbeard.com), which is dedicated to his family and the mishap, he leaves a simple message: "It's not what happens to you that matters; it's what you do with it that matters." With this story, DC1(SW) Neal Beard has done a lot to help each of us.—Dan Steber

The Rest of the Story...

Navy DC1(SW) Neal Beard wanted to share some research information on fatigued driving because he doesn't want any other Sailor or Marine to face the same pain and suffering. He urges people to follow six common-sense steps before taking a trip:

- Allow enough time.
- Don't speed to get there or return.
- Get plenty of rest, and beware of fatigue.
- Notify someone about your plans—where you're going, when you're leaving, and when you'll return.
- Carry emergency contact information in the vehicle.
- Wear your seat belts.

Petty Officer Beard also passed along several other statistics in a presentation he did to share his story:

- One of five drivers will be involved in a traffic crash this year.
- Motor-vehicle crashes are the leading cause of death among people younger than 44 years of age; they're also the No. 1 cause of head and spinal-cord injuries.
- About 35,000 people die each year in motor-vehicle mishaps (about half could be saved simply by wearing seat belts).
- In a 30-mph collision, an unbelted, 160-pound person can strike another passenger, go through a windshield, or hit the interior with a 4,800-pound force. A common cause of death and injury to children is from unbuckled adults.
- One in four serious injuries happen when occupants are ejected from a vehicle.
- Eight of 10 children who die in crashes would survive if an approved child-safety seat or seat belts were used and secured properly.

Here are a few more facts about Petty Officer Beard's mishap and its aftermath:

- The tractor-trailer driver quit his job and refused to drive again because of the death of Breana and Brandon Beard. He did so, even though the mishap was not his fault. What he saw and thought had been a suitcase flying from the car in reality was Breana being ejected.
- Neal's family told him about the Oklahoma state trooper who had helped to find and tell them about the mishap. Neal wanted to meet the officer



Navy photo by Fred Klinckenberger

Petty Officer Beard's left arm is a reminder of what happened Oct. 25, 2003. This photo was taken 19 months after the crash.

and to thank him personally. Before that meeting could happen, though, an unknown suspect shot and killed Trooper Nick Green near Devol, Okla. The trooper had stopped to check what apparently was a disabled vehicle. When dispatch didn't hear from him, a county deputy was sent to the scene and found Trooper Green's body. An in-car camera showed the suspect had been cooking methamphetamine on the side of the road and got caught. A fight broke out, ending in the trooper's death. He left a wife and three daughters.

- In one last twist of fate, Neal's grandmother (Grandma Beard) died on the very day of his mishap!

For more information on the Naval Safety Center's traffic-safety program and off-duty-mishap efforts, visit our website at www.safetycenter.navy.mil/ashore/motorvehicle/. The Oklahoma Department of Public Safety's website (oktrooper.com/memorial.html#31) honors Trooper Nick Green and other troopers lost in the line of duty. 📌

IN THE LINE OF FIRE

By Ken Testorff,
Naval Safety Center

“**L**ocked and loaded...the way it should be,” declared a gun owner, as he showed his Beretta .40-caliber handgun to guests at his home for a barbecue and birthday party.

The homeowner had taken the guests on a tour of his residence. While in the master bedroom, he took out his handgun and showed everyone the clip was full of hollow-point bullets. He then put one of the bullets into the chamber and walked out on the patio to where other guests were gathered, including a PO3 who was sitting on the patio stoop.

While standing in the doorway messing with his gun, the owner started pointing it around. When he aimed it at the PO3, she told him not to, but, about five seconds later, the gun accidentally discharged. The round hit her upper right thigh and traveled into her lower abdominal area before exiting through the left buttock.

Alcohol was present at the party. In fact, the PO3 said when she first met the homeowner at the barracks, he had appeared to be very intoxicated—a fact borne out in his 0.132 BAC. He pleaded guilty to a misdemeanor violation of possessing and handling a firearm while under the influence of alcohol. He also was charged with a gross misdemeanor of aiming and discharging a firearm at a human being where a person might be endangered.

This mishap demonstrates that drinking and driving isn't the only mix that doesn't work; booze and firearms is another. As noted in the mishap report, “As long as our Sailors continue to use alcohol and irresponsibly expose themselves and others to hazardous situations, we will continue to see these types of unnecessary incidents.”

In a separate case, another PO3 was trying to free a round that was jammed in the slide of his room-



mate's .25-caliber pistol. He pulled back the slide, which, in turn, repositioned the round, and the gun discharged. The bullet hit the PO3's foot, and he lost four workdays. He also spent 30 days on light duty and required physical therapy.

The victim was counseled on the importance of never trying to clear a loaded weapon indoors and always knowing exactly where a gun is pointed.

Here are some other tips to remember when handling firearms:

- Assume they are loaded until proven otherwise.
- Never clean a weapon while it's loaded.
- Ensure the safety devices are engaged. Remember the saying, “If you see red, you're dead.” This statement refers to the red color on most safety mechanisms. A red dot or red switch usually indicates safety locks are off.
- Stay alert while cleaning a weapon. Fatigue plays a big role in any evolution. For example, you never would want to get in your car and drive a long distance without being well-rested. The same principle applies to handling weapons.
- Read the instructions, mentally review safety precautions, and take classes on weapons handling.
- Never take a gun for granted.

The Navy loses Sailors every year in mishaps that could have been prevented. Whether you use a gun for recreation or on the job, planning is the key to avoiding mishaps. The solution may be as simple as asking for help or using the right safety equipment. Take time to evaluate the precautions and risks of a task before you start it. ■

If I Only Knew Then

By Kurt Garbow,
Director, Aviation and Operational Safety,
Office of the DASN(Safety)

The services have been nibbling away at the PMV-fatality problem for decades; yet, despite our efforts, the rates continue with little to no sustainable improvement. Privately owned motor vehicles and the young 18-to-25-year-old drivers remain the No. 1 cause of death for our Sailors and Marines.

Of all the causes of accidental Navy deaths in FY02, 58 percent of our Sailors died on the highway. At the end of FY05, following a two-year initiative to cut mishap rates in half, 57 percent of all accidental Sailor fatalities were the result of PMV mishaps.

First, the good news: Because of our collective efforts during the FY04 and FY05 mishap-prevention campaign, at least 17 Sailors are alive today, thanks to the fact we maintained our campaign's FY02 baseline PMV-fatality rates. Now, the bad news: Nine sailors have been killed in PMV mishaps during the first two weeks of FY06, which is nearly three times worse than the previous five-year-to-date average. If Navy PMV-fatality rates continue at their current trend, FY06 will be **worse** than each of the previous **24** years.

If ever there was a need to change the way we attack this epidemic, the time is **now**. It's apparent that our ALSAFE and ALNAV messages, our drive-safe lectures, and our posters are not having an effect. Our on-base, mandatory, seat-belt laws aren't being enforced adequately. Our requirement for formal motorcycle training and correct PPE before bringing one's 120-plus mph motorcycles on base aren't curbing the problem off base. Neither is the state trooper with his horrific movies at base theaters, nor the demolished vehicle on display at main gates, getting through. It's obvious, or it should be, that if we continue to fight the battle with the same tactics, we merely will achieve the same results.

Several years ago, as the father of 18- and 14-year-old boys, I took an excellent series of parenting classes, in which I learned the best person to fix a problem is the one who takes ownership of both the problem **and** the solution. One can lecture (scream, rant and rage), but, until the owner of the problem is given the responsibility to find the solution, the problem only gets worse.



While our efforts have been well-intentioned, Navy leadership has failed to lead or to mandate a change in the way our 18-to-25-year-old target population behaves when at the controls of a car or motorcycle. When it comes to off-duty driving behavior, they don't listen to us, nor do they hear our message. How many average teenagers truly listen and comprehend when their parents lecture them over and over to change their behavior?

While it's true our PMV-fatality rate is somewhat better than the 18-to-25-year-old civilian population, losing more than 400 Sailors and Marines every three years **never** should be considered the cost of doing business. Neither should its impact on our unit morale and our combat readiness be taken for granted. Ask any CO who lost a member of his/her command in a PMV mishap if (in hindsight) there was anything he/she could have done differently to prevent such a senseless loss of life. Ask him/her how long it took the command to regain the same level of readiness that was evident before the death of a Sailor.

Every CO and XO has one exceptional E-4 or E-5 in the command who stands out among his/her peers—the Sailor others go to for advice and assistance, the one respected by both peers and leadership for his/her professional expertise, dedication and ability to lead. If I were a CO again, I would call this Sailor, along with his/her department head, division officer, CPO, LPO, and the CMC into my office and discuss the Navy's PMV-fatality rate. I would explain

What I Know Now



to them how each night I go to sleep praying that I don't get a call from the duty officer, telling me that one of my Sailors has been killed behind the wheel. I would tell them I'm not convinced we're doing all we can do, and, while our efforts have been well-intentioned, I don't think we're getting to our younger Sailors. I then would inform this junior petty officer that, based on the level of respect he/she has earned among his/her peers, I was selecting him/her to be petty officer in charge of the command's new peer-advocacy group (PAG).

Comprising this PAG would be our youngest Sailors, who would have the job of reviewing, revamping and revitalizing our PMV and off-duty safety programs. I would ensure the junior petty officer knew he/she and the PAG had the full support of the CMC, the XO, and me and whatever resources I could make available. I also would ensure the PAG was afforded the full support of my wardroom, the chief's mess, and the first-class mess. I would tell him/her that the PAG was responsible for initiating all new off-duty safety initiatives and developing new training opportunities to elevate our PMV and recreational/off-duty safety programs. The PAG would work closely with our safety office. The PAG would **approve** all new PMV safety initiatives (POD notes, safety lectures, presentations at quarters, etc.) to make sure the message being generated was appropriate and was being presented in a manner that ensured it was heard loudly and clearly by our target population.

One of the first initiatives I would ask the PAG to accomplish would be to create a comprehensive list of all the “negative” and “positive” *consequences* involved if/when a Sailor made one or more of the following decisions:

- Not to wear a seat belt behind the wheel
- Not to make everyone in his/her car wear a seat belt
- Not to stop a shipmate from driving drunk
- To get behind the wheel after drinking
- To get in a vehicle being driven by someone drunk

Because Navy commands historically are bombarded with all the **bad** things that can happen to Sailors when they don't buckle up or when they drive drunk, I would tell the PAG POinC to file away the list of negative consequences. Instead, I would ask him/her to carefully discuss and sequentially attack each of the real and/or perceived *positive consequences*—those “good” things that are so powerful they outweigh common sense and (the now engrained) “bad things” that often happen when we make poor decisions behind the wheel. These *positive consequences* likely would include such things as:

- Wanting to look “cool” behind the wheel
- Being able to turn around and talk to those in the back
- Not being viewed as a nerd
- Being able to reach his/her CDs
- Peer pressure
- Just wanting to have more fun
- Being able to get out of the car quickly before it catches fire in a crash (my favorite)
- Increased self-confidence

Before the POinC reconvened the PAG, I would offer to help him/her prepare answers on how best to address each of the positive consequences the group came up with. By attacking each perception individually, the group likely would come to a better understanding of how to help themselves and one another collectively to reduce peer-pressure influence and to make better/smarter decisions.

The creation of the PAG and my selection of the PAG POinC would be announced at quarters, 30 minutes following our meeting. I would tell my command and my new PAG POinC that I'd still lie awake at night worrying about my Sailors, but that our newly formed group was my *champion for change*. ■

Held Hostage by



By MMC(SW/DV) Kevin Gest, USN(Ret.)

While diving on USS *Monitor* in 1998 to recover its propeller, another diver and I found ourselves surrounded by 30 overly curious and overly large barracudas. They literally were in our faces, zipping behind and between us, then suddenly stopping inches from our faceplates, with one huge eye glaring in and their jaws jacking open and shut, as if tasting us.

We thought we were dinner, and it was a little late to consider enclosing our platform with a “Hooper cage.” It especially was nerve-wracking because we had more than 30 minutes of decompression due before surfacing. In the end, my partner chickened out; we got yanked from the water early and made up for omitted decompression in a recompression chamber.

I had flashbacks of that “hostage” event when I read the story about a lieutenant commander who was scuba diving with a group off a charter boat. The first dive went fine, and the second one did, too, until the group started ascending. A pod of whales congregated above them and drove them back down to 120 feet for eight minutes.

Once the whales left, the divers headed back up, making a couple safety stops along the way. The divers were using computers to track their dives, but it is unclear if the mishap victim knew how to use hers because she later would report she was unsure about her decompression stops during her ascent to the surface.

Twenty-six hours later, while aboard an airliner, she felt pain in her joints and took some anti-inflam-

Sea Creatures



matories, to no avail. Two days later, she still was in pain and walking with a decided list. A visit to a dive doctor revealed she had type II decompression sickness (DCS). The doctor hustled her into a recompression chamber.

While there is no way to account completely for loitering whales, planning for the unexpected should have prompted the diver to take along a written set of the decompression tables. Available on plastic, these tables would have allowed the diver to do a ballpark check on what her dive computer was telling her to do. They also would have provided a backup in case the battery in her computer died, or a shark ate it. Complete dependence on an electronic device to direct the flow of your dive in a wet environment is foolhardy (not necessarily a view supported by all diving commands).

Some divers copy parts of the dive tables onto a waterproof slate, taking into account possible variations to their planned dive. A second dive computer is another alternative. Costing \$300 to \$800, it's well worth the money if you dive frequently. However, if you're a frugal diver, and you still haven't found your first treasure ship, the wiser decision may be to rent a second dive computer.

Also, a better familiarization with the dive tables would have clued the diver into the fact that a 50-foot

decompression stop was quite unusual for her dive profile. The bottom time required for a 50-foot stop when diving to 120 feet is 180 minutes or more. Then, she would have had more than 280 minutes' worth of decompression due, divided into 10-foot increments, all the way to the surface.

The greater lesson here is learning what to do after an act of God occurs—one that you haven't planned for. You immediately need to assess the situation to minimize collateral damage and, after the dive, review the incident to prevent recurrence. If decompression was missed for this dive, someone should have caught it immediately afterward by comparing the depth and time of the dive with "standard air" decompression tables. Diving medical experts then should have been called in for their advice, even if there were no symptoms of DCS.

A review of this incident should question why decompression was missed. Did the dive computer work incorrectly? Did the diver know how to use the computer?

Here are some facts about commercially available dive computers (confirmed with a local dive shop that sells them):

- Dive computers track depth and time throughout your dive, with depth and time being inversely limiting factors. They register the deepest depth



Once the whales left, the divers headed back up, making a couple safety stops along the way.

attained during a dive, but they also credit the diver for time spent at shallower depths during the “bottom time” phase. Regular dive tables consider all time during the “bottom time” phase as being spent at the deepest depth of the dive. This feature allows a diver using the dive computer to stay in the water longer than a diver using regular dive tables for a dive of equal “deepest depth” but lesser “average depth” (pushing the envelope).

- The computer tells whether you need to make decompression stops, indicating their depth and length of time.
- For dives of equal depth and time (without upward excursions), dive computers follow the “standard air” decompression tables fairly closely. The diver in this mishap would have been on this type of table.
- Most dive computers cannot account for body composition. Muscle and fat content, among a great many other factors, influence the speed of off-gassing inert gas (nitrogen) from the body’s tissues.

Several conflicts existed in this diving incident. The Navy “standard air” table for such a dive requires a stop at 20 feet for 15 minutes and another at 10 feet for 31 minutes; commercial tables closely follow this schedule. Five-minute stops at 50 and 30 feet were decidedly odd. The diver actually may have been on-gassing (taking on nitrogen) at her 50-foot stop, and, at the least, her off-gassing would have been negligible. If her dive computer was functioning normally, it should have told the divers when and where to stop

and for how long. It’s hard to tell, without knowing their variations in depth, but, for the divers to have missed more than 40 minutes of decompression in comparison to “standard air” tables, it appears the computer was broken, or the divers were.

Why didn’t the diver experience problems until 26 hours after the dive, while she was on a flight? Off-gassing continues in the body after surfacing from a dive until the inert gas (nitrogen) in all tissues equalizes with ambient air. The blood carries small molecules of nitrogen from tissues in the body to the lungs where it is expelled. If the nitrogen is off-gassed too rapidly at the tissue level, large bubbles will form and block the flow of blood.

Different tissues off-gas at different rates. Because of fatty tissue’s lack of vascularity, it off-gasses slowly and can act as a reservoir of inert gas in the body. This off-gassing will not cause a problem as long as the blood is able to carry the nitrogen to the lungs before bubbles form. A sudden decrease in ambient pressure, such as in an airline cabin, increases the speed of off-gassing. While decompression is considered complete after 12 hours, flying after this period, or even driving to a higher altitude, still may result in residual nitrogen being released from fatty tissues fast enough to cause bubbles to form in the body and block blood flow. ■

The author was assigned to the Naval Safety Center when he wrote this story.

Saving Christmas

By HMC(FMF/NAC) Trevor Dallas-Orr,
NSTI Det West

It was Christmas Eve, and, like many families, we were going about our business without much regard for the beauty of life. We had attended church and a great Christmas party at a local friend's house, then had returned to our warm and cozy second-floor condo. The children were excited about all the presents under the tree, but little did they know how closely all of us would come to losing our lives before they had a chance to open anything.

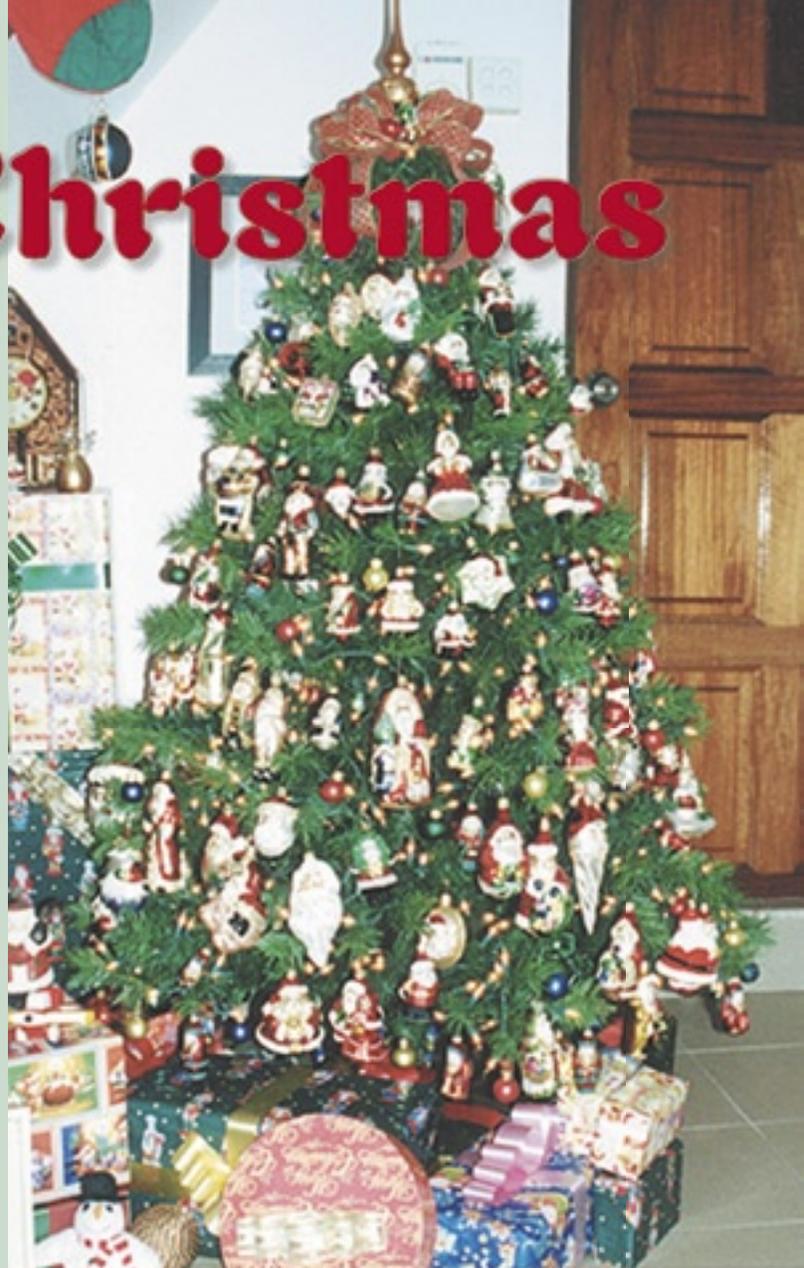
My wife and I completed the usually frantic, last-minute wrapping that has become a tradition in our household. With cinnamon apples boiling on the stove, the aroma of Christmas filled the condo as we put finishing touches on our preparations for the coming morning. We finished shortly after midnight and sank into bed, exhausted but looking forward to the reactions of the children the next morning.

Sleep came very quickly. At 2 a.m., though, an alarm rudely awoke us. The carbon-monoxide alarm was beeping, and its audible warning had sounded. I quickly got out of bed to see what was wrong. "Was our alarm faulty like some rumors we had heard, or was this the real thing?" I wondered.

We opened all the windows, then called the local gas and electric company. About an hour later, a technician showed up, and I apologized for disrupting his Christmas Eve sleep. He started trying to find the reason for the alarm, asking if we had left a heater or stove on. I said no. A test of the carbon-monoxide levels revealed they were really high, so he told us to get out of the house and into the fresh air.

The technician didn't stop there. He headed to the enclosed garages under the condos, checking for the source of the high readings. He soon found the problem: An old gentleman accidentally had left his car running, with the garage door closed. I went to awaken him. When he finally pushed a remote, opening the garage door, the heat and fumes that flew out nearly were strong enough to knock a person over.

The technician and I then quickly awakened the residents of the other five condos in our building so they could test the carbon-monoxide levels in each. All the



readings were high, so we called the local fire department. All residents subsequently were evacuated into the cool and rainy early-morning air. The fire department left about an hour after arrival since no one had been injured, but the technician stayed until all the condos had safe carbon-monoxide readings.

Thanks to him and our carbon-monoxide detector—the only one in the whole building—lives were saved, and everyone indeed had a Merry Christmas. ■

Every home, including condos and apartments, should have a carbon-monoxide detector. Furnaces, hot-water heaters, and cars running in adjacent garages produce colorless, odorless carbon monoxide that can build up to toxic levels in enclosed spaces. Carbon-monoxide detectors should be placed in the same locations as smoke detectors.—Capt. Charlene Brassington, former NavOSH programs director, Naval Safety Center

Why VPCs Need

By MM1(SW) Karlus Smith,
Naval Safety Center

It's payday Friday morning, and you hear a familiar story: "CS3, we need to get these stores moved to the galley ASAP. When you are done, you can go on liberty. Now, let's get hot!"

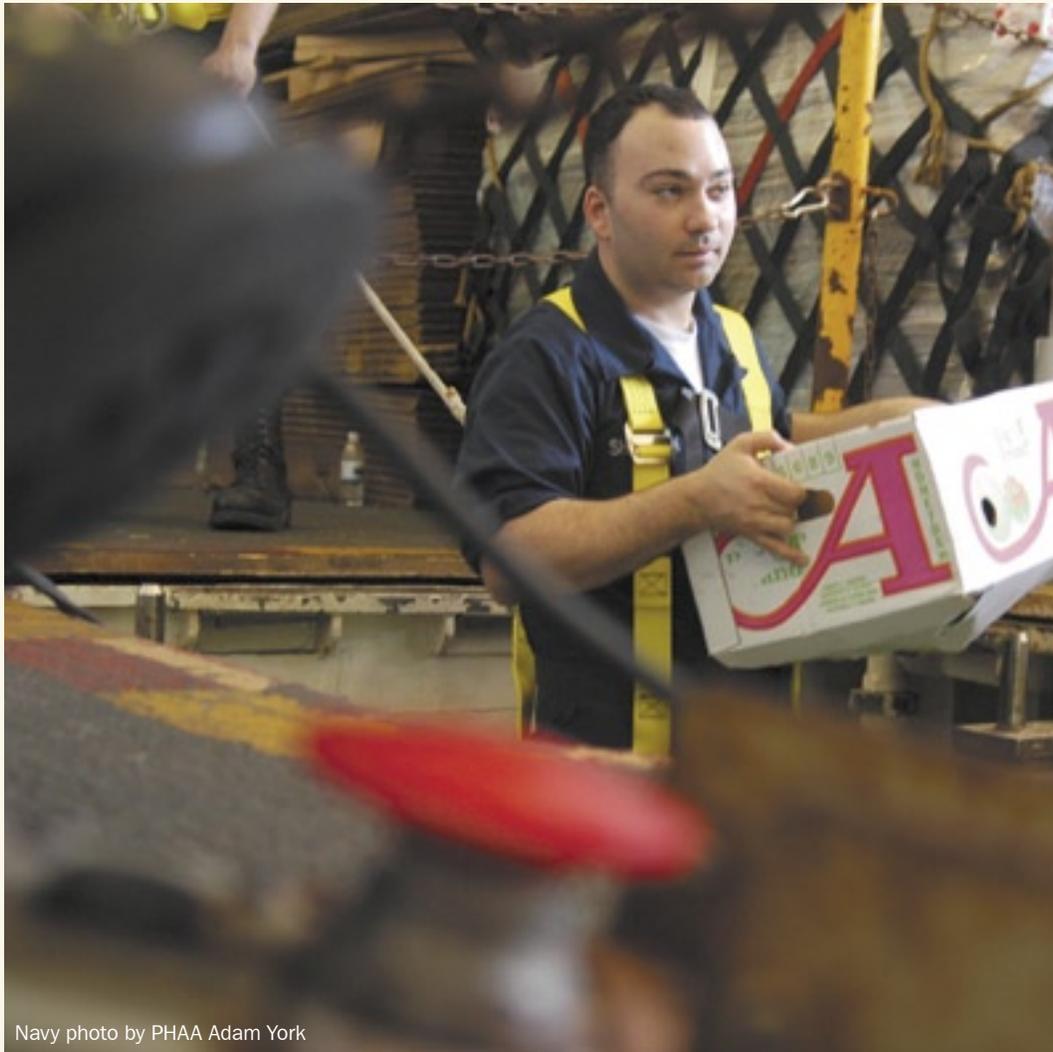
The CS3 contacts an MM3 to unlock doors at the upper and lower levels of the conveyor trunk. The CS3 and food-service attendants then start moving stores to the galley. Meanwhile, the MM3 returns to his workcenter and reviews the PMS schedule. He notices he has several checks to complete before he can enjoy payday Friday.

At 1500, our machinist's mate has one check remaining, but he sees it is 28 pages long. What happens? He looks at the time, puts an "X" beside all the checks as being completed, and secures for the day—he isn't about to miss liberty call.

Shortly afterward, an injury report is generated, stating, "During the operation of the package conveyor, a Sailor was injured because the emergency-stop and run-stop switch didn't work." The Monday morning after payday Friday, the chain of command interviews the workcenter supervisor and LPO as a mishap investigation begins.

The first questions are, "Were any pre-operational checks done?" and "When was the last SOT [*system operability test*] completed?" The two petty officers look at each other with confusion as if to ask, "What is a SOT?"

Vertical package conveyors (VPCs) require a SOT (MIP 5721) for safe equipment operation and to prevent injury. A SOT is an intense, time-consuming PMS check that covers everything from the motor



Navy photo by PHAA Adam York

and chain to making sure all lights and switches work. The SOT covers the conveyor from top to bottom and must be completed as scheduled, or use of the VPC is prohibited.

These checks must be taken seriously and must be performed with caution and attention to detail. The two-man rule applies (one safety observer and one operator), and communications through installed shipboard communications devices always must be in effect during any VPC operation.

The SOT's mechanical portion requires inspecting the motor for corrosion and loose or missing parts. The PMS also requires cleaning (while wearing the proper PPE) around the plug and sight-glass with an

a Little TLC



A Navy culinary specialist moves boxes of fresh fruits and vegetables onto a ship's package conveyor.

approved solvent and rags. Inspect the oil level, the seal for leaks, and follow the MRC line-by-line.

A qualified electrician must perform all electrical work indicated on the MRC, so make sure you coordinate your PMS with all personnel involved. If the VPC was installed with ShipAlts CV-8872D, CVN-8873D, or Smart Carrier conveyor, clean and inspect the photoelectric lens, reflector, light-stick lenses, and Q45 lenses.

When the bulk of the check is completed, inspect potentially overlooked items. According to the MRC, you should inspect the conveyor station for these items:

- Installed lockable cover and lock
- Broken or missing pushbuttons or switches
- Cracked, cut or damaged electrical cables
- Loose, missing or incorrect hardware or fasteners
- Posted operating instructions, including the

two-man rule

- Warning sign posted in close proximity to the door, reading, "Keep clear of trunk opening during conveyor operation."
- Warning sign mounted to the exterior of the conveyor door, reading, "Do not ride conveyor. This is extremely dangerous. Do not put arms, head or other parts of the body into unit unless power is off."

Another issue is making sure the conveyor door

opens smoothly and at least 90 degrees relative to the doorframe. When the door is opened, lights at the station being tested should illuminate. All fixtures should be in place, with no loose or missing parts. There are two limit switches (interlocks) at the top of the hatch or door. One controls lighting; the other is a safety switch to stop the VPC if another door inadvertently is opened during operation. Testing these switches is part of the PMS and comes later in the MRC. Never alter or bypass these interlocks to speed up completing the job. Repair any discrepancy with the VPC before further operation.

A safety shield is installed on ships that don't have the ShipAlts (currently installed on CVs and CVNs). This shield is a clear, half-inch-thick polycarbonate plastic. It's located in the space above and in line with the stowed load/unload tray to prevent personnel from placing their heads inside the VPC trunk when the door is open. All fasteners must be tightly installed and of the correct size and type. The shield is hinged for outward swing and has a mechanism to prevent inward swing. It also must have a one-inch gap from the shield's bottom edge to the loader/unloader tray when the tray is in the stowed position.

The MRC describes in detail how to check each VPC component, and no maintenance person has authority to overlook any procedural steps. Always have the tech manual handy when performing VPC maintenance. If some PMS steps are unclear, tell your workcenter supervisor. Don't just complete the PMS—do it correctly.

The SOT record is kept for six months to verify everything works and was checked according to MRC requirements. The system should be danger-tagged, inspected and manually tested for proper safety-device operation at each VPC access.

For a detailed description of stores-handling equipment, refer to Naval Ships' Technical Manual, Chapter 572(Rev. 2), Shipboard Stores and Provisions Handling. ■

Why I Believe in Polycarbonate Lenses (or My Close Call With a Garage-Door Spring)

By Cdr. Henry Porter, MC,
Naval Aerospace Medical
Institute

It was a beautiful, sunny day in Pensacola, Fla., as my wife, Carmela, and I drove up in front of our home. When the heavy, wooden garage door started opening, I noticed it was out of alignment and decided to investigate.

I found that the metal roller on the low end had sprung out of its track. Looking down at the roller from above, I tried to push it back into the track. I didn't know at the time how dangerous this action was or how incredibly fortunate I was to have ordered the pair of glasses I was wearing.

As I pushed the wheel, the entire mechanism to which it was attached also moved, which seemed odd to me. It wasn't until after I returned from the hospital that I figured out what had happened.

The door slammed down, and Carmela screamed at about the same time I was thrown backward into the middle of the garage. As I lay on the floor, I quickly checked to determine what was injured. Being a neurologist, I mostly was concerned about possible brain damage or cervical-spine injury, so I didn't move at first. I felt blood on my cheek and told Carmela to get ready to call 911.

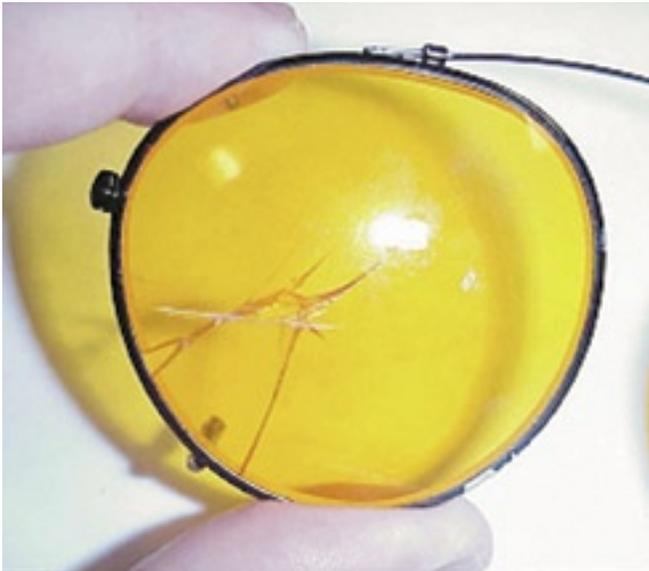
I was alert, could move all my extremities, and didn't have any neck pain. I looked around and everything was blurry, but that was because three pounds of metal had slammed into my glasses and destroyed them. The frames were mangled, and the right lens had been knocked out.



These were my new glasses, my first pair with polycarbonate lenses. I also was wearing clip-on sunglasses; they weren't polycarbonate, as you can tell from the fractured lines that document the impact point. This evidence showed I was struck near the center of the right lens—it was forced out of the frame and into my orbit, cutting my cheek. The lens, however, shielded my eyeball from a horrible injury and certain blindness. *[Accompanying photos show what happened.—Ed.]*

My vision was not changed. I was able to twist my frames back into shape and replace the lens. The periorbital bruising [black eye] and small cut on my cheek healed, leaving no evidence of what had happened that day.

Using my U.S. Navy flight-surgeon training, I was able to reconstruct the mishap. Here is what happened to the garage door. When Carmela and I had left that morning, I pushed the remote control in my car to close the door. We drove off, not knowing the bolt holding the right side of the door nearly had worked itself out. This problem caused the bottom roller to slip out of the track, which prevented the door from closing all the way.



The bottom of the door is attached to a cable that is under tremendous tension by a spring located over the garage door. The spring helps lift the door, which weighs several hundred pounds. When I pushed on the wheel, the bolt slipped out, and the door fell with a crash. At the same instant, the wheel and metal plate that was attached to the cable recoiled upward and smashed into my glasses. I was lucky in two respects—first, that my glasses and not my nose, neck, ear, mouth, or skull took the impact and second, that my lenses were made of polycarbonate material.

This material is manufactured differently than the material used to fabricate other lenses. An enormous amount of pressure compresses the raw material. The resulting product holds up so well under impact, not because it is hard and unyielding, but, rather, because it is flexible and gives slightly under pressure without breaking. Polycarbonate lenses actually are made of material that's identical to what is called "bulletproof glass." Poly also has been used for astronaut-helmet shields and space-shuttle windshields.

The garage-door repairman was amazed that I hadn't been killed, given the position I was in when the energy of the spring was released. I have developed a lot of respect for the heaviest moving object in my home. Everyone I've told this story to has known someone who was injured in a garage-door accident. As my research revealed, an average of 20,000 people have been treated in hospital emergency rooms every year since 1990 for injuries received in garage-door incidents.

The best advice I can give anyone is don't try to fix a broken garage door yourself. Here are a couple other tips I derived from research:

- Visually inspect the garage door springs, rollers, pulleys, cables, and track on a regular basis. Look for loose or worn parts.
- Do not attempt any maintenance around the springs, which, along with their mounting brackets, cables, and other associated hardware, are under high tension. If one of these parts breaks or comes loose, it can cause serious injury. An experienced individual should do this work.

I was very lucky and often have considered how my life would have been changed if not for the polycarbonate lenses I had purchased only three weeks before this incident. I learned two lessons: First, don't try to fix a garage door yourself; second, polycarbonate lenses provide significant eye protection from injuries. ■

The author is head of neurology at NAMI in Pensacola.

Don't Brace Yourself To Fall

By Lt. Matt Dodge,
NRC Chicago

In my senior year of college, a couple of buddies and I had ski fever. The nearest legitimate ski resort was about six hours away, but we were dedicated to packing up my friend's truck and heading out for the weekend.

I had been an avid skier since I was 13 years old and felt comfortable on all types of terrain. This trip was going to be a little different, though—it was going to be my first attempt to snowboard. Both guys I was going with just had bought new snowboards during the off-season and were chomping at the bit to get some time on the slopes. They were fairly new to the sport, so I figured my skiing experience quickly would catch me up to their speed.

Our trip started uneventful. We left after class on Friday afternoon and hoped to make it to my one friend's family cabin about 10 o'clock that night. We planned to get a good night's sleep and be on the slopes for first snow.

When the sun came up the next morning, we awoke eager to get started. It's hard to harness the anticipation of that first run in the morning. On the way to the slopes, we stopped at a local rental shop to rent my snowboard and some other odds and ends for the day. The rental process was typical: After signing a lot of liability paperwork and getting a quick fitting, we were out the door. While I was being fitted, I had asked the worker his best advice for beginning snowboarders.

He replied, "When you fall down, don't brace yourself with your arm. Try to fall on your butt, your side, or your elbow." He went on to explain that the most common injury for beginning snowboarders is bracing with their arm when they fall and hurting their wrist. I listened carefully because I knew, with finals and a long Christmas vacation coming up, the last thing I needed was a broken wrist.

Minutes after getting to the slopes, we had our lift tickets and were ready to go down. My friends told me I might want to take a quick lesson before starting down, but I said I didn't need one. After all, I had been on the slopes for the past eight years with no problems.

I must have fallen 30 times during my first run. It turned out that snowboarding wasn't as easy as it looked—it certainly wasn't anything like skiing. With that humbling experience, I told my buddies I didn't want to hold them up any longer. I then headed to a bunny hill to conquer this sport. It took about an hour and a half, but I finally got to where I could go down the hill without falling. It was time for something bigger.

I caught up with my friends, and we worked our way to the top of the mountain. They had found a couple of nice runs that weren't too difficult and would be good practice for me. After two runs, I finally was feeling somewhat comfortable and was getting a bit more adventurous. "This time, I'm going to hit one of the steeper hills," I told them.

It was a great run all the way down. I really was starting to carve and understand how to control the snowboard. The last part of the run was the steepest hill I'd seen, but it ended at the lift to take me back to the top. I figured I just would point the nose of the board and ride it straight to the lift. All was good until Wham!—the next thing I knew, I was on the ground, sliding down the mountain on my face. I had caught the edge of my board and had done a face plant right into an icy section of the hill.

I quickly regained my composure (and pride) and tried to push myself up to finish the rest of the ride. However, I realized my right wrist was hurting badly and couldn't take any pressure at all. After getting back to the lodge, I rested a little, while my two



friends continued their fun on the slopes. I eventually made it back to the slopes but never felt comfortable with my wrist.

We packed up the truck and headed back to school the next day. On the way, I noticed my wrist getting bigger. When we arrived, I went to the campus medical and had my wrist checked. The doctor confirmed my suspicions: My wrist was broken. I spent the next eight weeks with a cast on my arm up to my elbow. Because it was my right hand, I had to make special arrangements for all my finals that semester. My chances of doing anything too active on Christmas break also were ruined. The broken wrist didn't hurt too bad, but it created more stress for an already stressful part of the year.

I learned three lessons from that experience. First, you never should be too confident when trying out a new physical activity. Humble yourself, and it will allow you to be safe, to learn how to do it correctly, and to have fun at the same time. Second, listen to the advice of people with regard to safety. I knew that falling down and bracing myself could

“This time, I’m going to hit one of the steeper hills,” I told them.

put me in danger of hurting my wrist, but I didn't concentrate hard enough on that risk. Last, don't bite off more than you can chew when dealing with a new activity. I wasn't ready for steep slopes and advanced terrain, but I tried it anyway—putting myself and other skiers at risk. From now on, I'll play it conservatively when I try something different. ■

The author was assigned to VAW-117 when he wrote this story.

How I Almost Burned Down My House

By LCdr. Mike Prevost,
Naval Aerospace Medical Research Laboratory

I was watching TV when my wife asked me to come upstairs because she smelled something burning. We traced the electrical odor to a washing machine.

Although no smoke was visible, and a smoke alarm only five feet away hadn't sounded yet, I immediately unplugged the machine. Its control box—that part with the knobs and buttons—was hot. I decided to keep an eye on the machine, but when 10 minutes had passed with no smoke or flames, I went back downstairs. "I'll get someone to repair or replace the machine tomorrow," I thought.

When another 20 minutes had passed, my wife told me the control box still was hot, which seemed odd to me, so I went back upstairs. I tried to turn the big knob on the front, and it felt mushy. I soon discovered it had melted. Because an electrical odor still lingered in the house, I decided to investigate further.

I had removed two screws that attach the control box to the body of the machine and was lifting the control-box housing when I heard crackling and popping sounds—like a fire makes! Luckily, my wife had brought a fire extinguisher upstairs, and it was ready to go. I flipped the control box on its side, and it immediately burst into flames.

I grabbed the extinguisher, pulled the safety pin, and tried to pull the trigger. In a couple of seconds, my wife snatched the extinguisher from me and put out the fire. She had read the instructions a couple of minutes earlier and knew you had to push the handle—not pull the trigger.

With the fire out, I ripped the control box off the machine and threw it out a window. I wasn't leaving that thing in my house overnight! Later, I reflected on what had happened and realized we were lucky. Several things had worked in our favor:

- We had a fire extinguisher, which, fortunately, was an ABC model (one that can handle all types of fires). Without it, we would have been in big trouble.
- My wife had read the instructions for using the fire extinguisher; I hadn't. A few more seconds and



everything on the shelf over the washer would have ignited, and then who knows what would have happened?

- We were smart enough to take the fire extinguisher upstairs when we suspected a fire. If we had waited, the fire would have been out of control.
- Even though we hadn't seen smoke or flames, I decided to investigate further. If I hadn't, the fire probably would have continued to smolder until we had gone to bed, then ignited and burned down the house.
- Although our smoke alarm didn't activate during this incident, it did go off at 3 o'clock the next morning. How's that for a delayed reaction? I now have a new one that works. I also have three new ABC fire extinguishers in my home—one for upstairs, one for downstairs, and one for the garage—and I know how to operate them.

Are you ready to fight a home fire? Do you have working smoke alarms? Do you have an escape plan? Do you have fire extinguishers, and do you know how to operate them? In a matter of seconds, a home fire can be out of control. Now is the time to answer those questions. ■

A couple of weeks after the fact, the author penned this story for use within his command. His CO suggested he share the experience with Sea&Shore readers.—Ed.

Procrastination and the Honey-Do List

By Ltjg. Craig Carsten,
VAQ-130

All four squadron aircraft were up and ready to fly east the next morning to join the ship for a training exercise. The sun was shining, and it was time to go home and cross off another item from the honey-do list. My No. 1 priority was to finish the shed my wife had been bugging me to build for months but which I had started only four days earlier.

As I pulled into the driveway, I knew it would be very late before I finished the siding and shingles. Then, I still had to pack for the boat.

After changing clothes and talking to the kids for a couple of minutes, I headed into the backyard. Earlier construction efforts had created quite a mess—one that required a quick cleanup. I also had to find all the necessary tools. Finally, I was ready to finish the siding work I had started the day before.

As I put up a stepladder next to the backside of the shed, I saw the ladder was leaning slightly because of the sloping terrain. “It’ll be all right,” I thought to myself. I went to the woodpile, pulled out a 4-foot-by-8-foot sheet of siding (weighing about 40 pounds), and returned to the backside of the shed. After placing the piece of siding against the shed, I climbed to the top rung of the ladder, which was about 10 feet high. “Top rung?” you may be asking—and with good cause.

While I pushed the sheet of siding into place, the ladder started tipping backward. I let go of the siding, but it was too late. The ladder kept going backward, and I fell between its legs, landing on a one-foot T-bar fence post I had installed several years earlier for my backyard fence.

Despite having the wind knocked out of me and suffering agonizing pain through my left, lower chest, I lifted myself off the fence post. I then climbed back into my yard and walked as fast as I could to my house. I threw open the backdoor, told my daughter to call 911, and lay down on the deck.

It took 3.5 weeks and three operations to repair a hole in my stomach, a torn diaphragm, a knick on my left lung, and a broken rib. Doctors sent me home with a stockpile of painkillers and antibiotics, and I

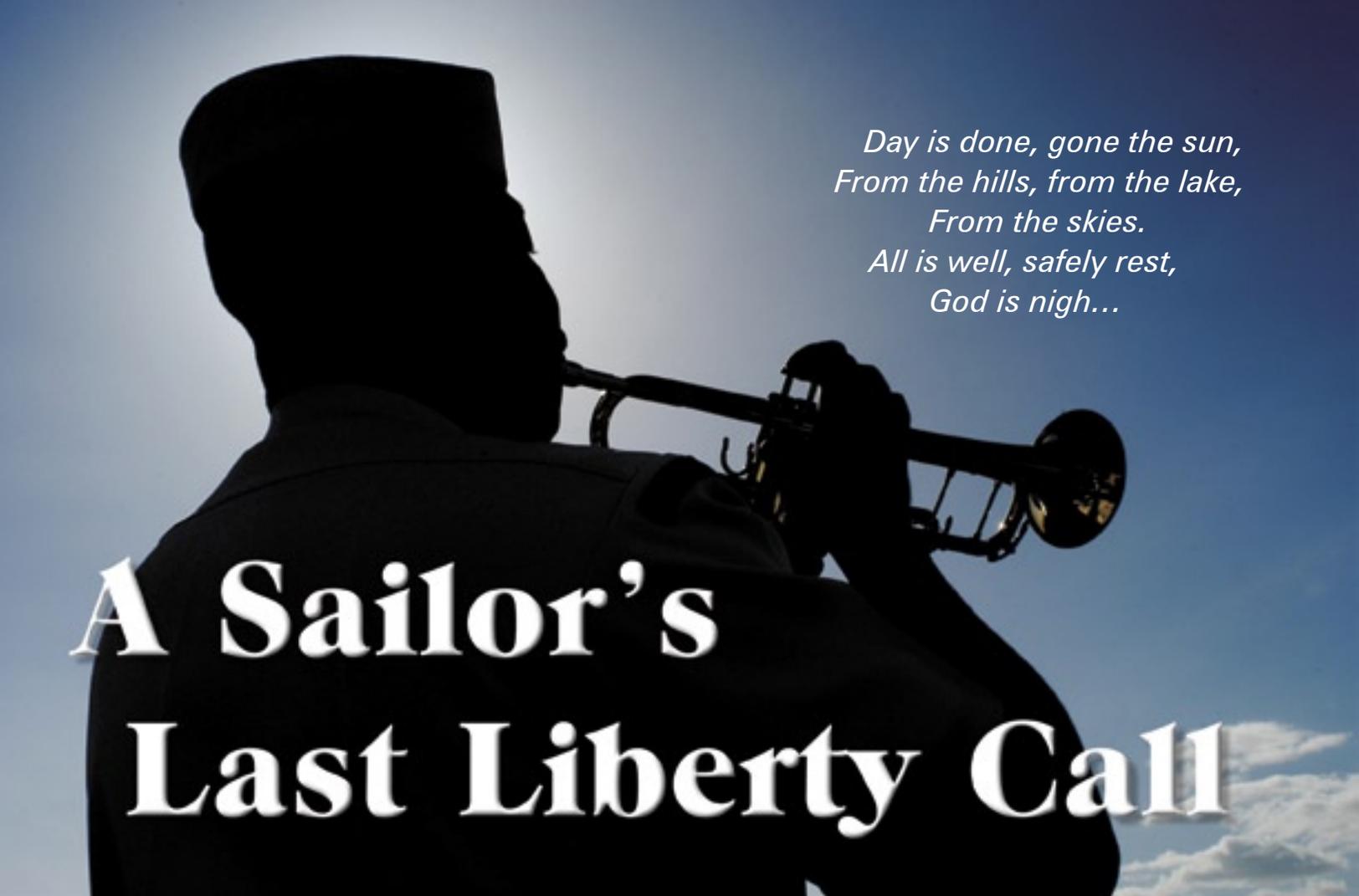


As the author learned, building a shed in your backyard requires more than one person.

subsequently lost 40 pounds. Three months passed, during which I had to overcome several secondary infections, before I could return to work.

What did I learn from this incident? In my haste to get things done, I attempted a job that required more than one person. I also should have paid attention to the safety sticker on the ladder, warning me to stay off the top rung. Finally, I should have made sure all four legs of the ladder were planted firmly on a level surface.

With better planning, I would have completed this job before the five-week detachment started, and I would have spent the evening with my family as I had wanted to do. ■



*Day is done, gone the sun,
From the hills, from the lake,
From the skies.
All is well, safely rest,
God is nigh...*

A Sailor's Last Liberty Call

Navy photo by PH2 Dennis Cantrell

By Ken Testorff,
Naval Safety Center

It was late January, and a winter storm had hit the area. Two inches of snow and ice had accumulated on the walkways, ramp and upper deck of the two-level pier where a Navy ship lay berthed. A light, freezing rain still was falling; the ambient air temperature was 29 degrees Fahrenheit.

Meanwhile, a 20-year-old seaman apprentice and some shipmates huddled inside their warm ship, making liberty plans for the evening—plans that, unknown to any of them, were doomed. The seaman apprentice agreed to meet his friends ashore but decided to play a computer game before getting ready to leave the ship.

Because of the slippery conditions, the previous night's chief of the guard at the pier had directed that Sailors should use the lower deck. Shipboard watchstanders, however, hadn't passed this guidance to the liberty-goers, so they were using both decks on the pier, according to personal preference.

Thirty-five minutes after his shipmates had departed the ship, the seaman apprentice eased

down the brow, en route to joining them. As directed by a guard on the pier, he used the lower deck. He walked until he was about 50 feet from the vehicle gate, where a steam cloud obscured his vision. Despite having condensation on his glasses, he kept walking until he reached the closed and latched vehicle gate, which he couldn't open, even though it wasn't locked.

Disoriented by the steam cloud, the seaman apprentice moved to his right and felt his way along the gate, around a corner, and on down the length of a chain-link fence toward the head of the pier. He still was trying to find an exit when the fence he had been following ended adjacent to an uncovered piped utility transition pit (PUTP) that was filled with hot (more than 200 degrees Fahrenheit) water. Steam leaking from a failed strainer in the drip-station, coupled with leakage from a potable water line, had created the pool of water. A combination of the submerged steam and condensate leak and immersed steam piping then had heated the water.

With no grating over the pit and with no railing

on the seaward side of the PUTP, the seaman apprentice slipped on a piece of ice and fell into the boiling water. Submerged up to his chest, he struggled to get out by clinging to piping and to the top edge of the pit. Two shipmates and a pier sentry heard his screams for help and pulled the victim to safety. The ship's quarterdeck was alerted, and emergency medical assistance was requested.

A chief petty officer who was on the scene said the victim remained conscious while waiting for an ambulance. He was concerned that he may have lost the duty keys in the fall and that he was causing a

scene. He also was upset that he was going to miss muster aboard his ship. "The poor kid was almost apologetic," the chief told investigators.

With 80 percent of his body scalded, the young Sailor died two days later in the burn-trauma unit of a local hospital, with his parents at his bedside. Burial was in Arlington National Cemetery.

Mishap-Investigation Findings

The unprotected opening to the PUTP presented a fall hazard that certainly could have resulted in significant injury on its own, but the collection of water inside, heated to scalding temperature, made the hazard deadly. The presence of escaping steam created a low-visibility situation that effectively masked both the fall and scalding hazards.

How did this hazard come to exist, and why hadn't it been corrected? Protection against falls into the PUTP was required by OSHA standards, but the designer didn't install any devices. According to 29CFR1910.23(a)(8), "Every floor hole into which persons can accidentally walk shall be guarded by either a standard railing with standard toe-board on all exposed sides, or a floor-hole cover of standard strength and construction. While the cover is not in place, the floor hole

Sailors leave and return to the nuclear-powered aircraft carrier *USS Enterprise* (CVN-65) while it's moored at a Naval Station Norfolk double-deck pier.

Navy photo by JOC Dave Fliesen



shall be constantly monitored by someone or shall be protected by a removable standard railing.” This requirement is meant for worker safety and would apply, regardless of who authorized access to the lower level. The design engineers had discussed protecting the opening of the PUTP but ultimately dismissed the idea as unnecessary.

Fall protection is a basic requirement of workplace safety, and the lead design engineer indicated that the design team had considered installing a grating, but they ultimately dismissed that idea, too. Here was their rationalization:

- A grating would interfere with expected future modifications to piping systems and would complicate required access for maintenance.
- The intended use of the pier’s lower level was “only for utility worker access,” not as a transit lane for pedestrian traffic.
- The PUTP was located at the end of a cul-de-sac, and, thus, no one could transit through the area.
- The PUTP was believed to represent a negligible fall hazard for qualified utilities workers.
- A 25-foot chain-link fence adjoining the vehicle-access gate would keep non-qualified personnel clear of the PUTP.
- The design specified that gates would be equipped with “cipher-type padlocks” to control access to the lower level.

Although not designed to accumulate and hold water, the PUTP served as a collection point for water that leaked from piping for potable water and steam. There were no design provisions for automatically draining or pumping collected water from the pit.

The safety aspect of the design review of the pier was cursory in nature, and the hazard associated with the unprotected PUTP wasn’t found during this review. No facility-system-safety working group (FSSWG) was established to support the design review, and no industrial-hygiene (IH) review was conducted.

The fall hazard associated with the PUTP wasn’t identified as a construction safety hazard during routine oversight.

No safety professional or IH specialist was involved in the final acceptance inspection for the pier, and no safety or IH discrepancies were noted during this inspection.

Steam leaking from a failed strainer in the drip-station, coupled with leakage from potable-water lines, filled the PUTP with water. The water then was heated to more than 200 degrees Fahrenheit by a

combination of the submerged steam and condensate leak and immersed piping. After this mishap, workers pumped out the PUTP and identified two defects. The strainer had a small irregular hole that appeared to be a material defect or an area of extremely localized corrosion (pitting). The second defect was a loose mechanical joint in the potable-water line, allowing water to drain into the PUTP.

The required periodic workplace-safety inspections of the pier’s lower level were not done because it wasn’t clear who was responsible for the inspections. Two different offices assumed the other was responsible, and, as a result, neither office ever checked the PUTP.

Although required by an instruction, safety engineers never did a follow-up evaluation with facility operators and maintainers to identify any residual concerns or hazards at the pier.

Two shipmates and a pier sentry heard his screams for help and pulled the victim to safety.

The steam leak at the mishap site had existed and had been documented for at least 10 weeks before the mishap. The presence of the leak, though not its exact location, was well-known to several people. Its effect on visibility in the area varied, depending on the wind direction.

Various base utilities workers knew about the PUTP but didn’t view the arrangement as a fall hazard that required additional safety protection. And, although they twice had pumped out the PUTP, they didn’t recognize it as a scald hazard that required any other action. They also didn’t try to identify and repair the source of all the water.

The facilities-condition-assessment program requires inspection of the material condition of pier decks on a two-year cycle. Because the pier in this mishap was a new facility, it hadn’t yet been scheduled for inspection, and none had been done.

After this tragedy, the Navy installed handrails, lights and barriers and moved to change the design of future double-deck piers. ■

Who Says Sailors Aren't Ingenious?

By Ken Testorff,
Naval Safety Center

Perhaps a young Sailor equated a can of Freon to a baby bottle, but, whatever his logic, he now has a new story to tell shipmates—provided he's willing to 'fess up after making such a blunder.

It happened while the Sailor's wife and child were upstairs in their Navy-housing unit. The Sailor had decided to recharge an air conditioner before the onset of warm weather. To speed up the process, he placed the can of refrigerant (Freon 134A) into a pan of water, which he then started heating atop a burner on the kitchen range. In case you haven't yet figured it out for yourself, folks, we're talking serious "rocket science" here.

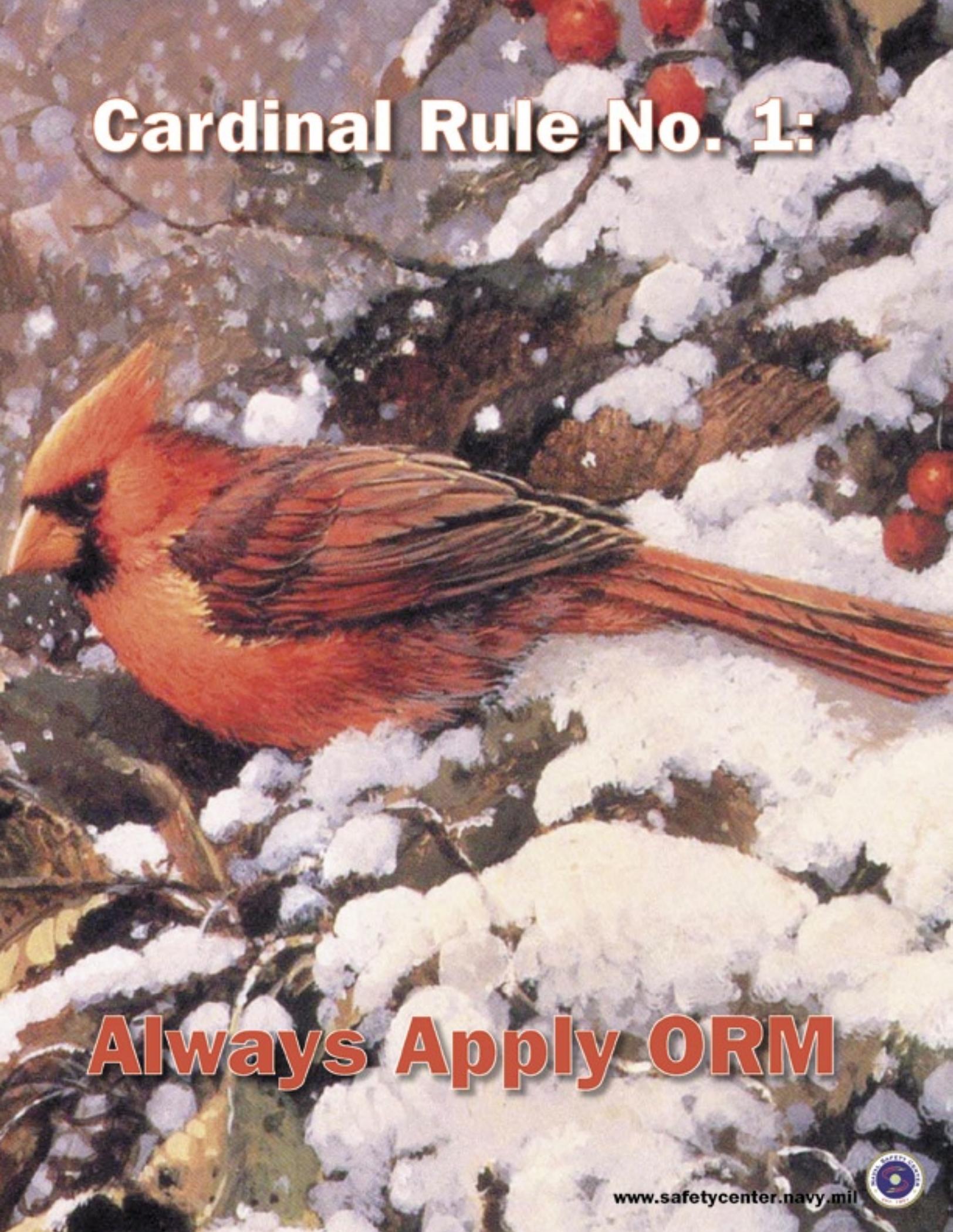
Luckily, "Einstein" wasn't in the kitchen when the fallacy of his reasoning became apparent. He had gone to the next room and was watching an NBA playoff game on TV. A 911 call from the folks in a nearby unit brought the fire department to the scene of the explosion.

Although no one was injured, "Einstein" had to invest in a new range top, microwave and range hood to be installed in his quarters. And, who knows what indignities and discipline his spouse may have imposed?

According to investigators, the exploded Freon can still contained the manufacturer's written warning: "Contents under pressure. Store in a cool, dry place. Can may burst if heated. Keep away from direct sunlight and other sources of heat. Do not expose to temperatures above 120 degrees Fahrenheit."

Reading and heeding that warning label could have saved this Sailor a renovation project. As the incident report noted, though, "He can consider himself very fortunate his head wasn't near the range hood." ■





Cardinal Rule No. 1:

Always Apply ORM

