

**In this issue:**

**Focus on**

**Do-It-Yourself Safety**

**... plus intro to  
Critical Days of Summer**

**and features on**

- ▶ Shipboard hazards
- ▶ Water sports
- ▶ Bicycling



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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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## Admiral's Corner

FROM COMMANDER, NAVAL SAFETY CENTER



## Critical Days of Summer Are Here

Summer is the time of year when our Sailors, Marines and their families head to the nation's beaches, lakes and parks. They take advantage of the nicer weather and time off to do more sightseeing and to visit more family and friends. Unfortunately, our database shows they also have more mishaps.

These mishaps create a well-recognized negative trend, one that is shared by all services: the comparatively high toll of off-duty and recreational mishaps. Since the 1960s, military safety specialists have called the period between Memorial Day weekend and Labor Day weekend the "Critical Days of Summer." By any measure, it's a period of increased risk for Sailors and Marines.

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# Avoiding Some of the DIY Pitfalls

**W**hether you're an experienced do-it-yourselfer or a beginner just learning to operate basic power tools, home-improvement projects require special care and attention to safety.

The U.S. Consumer Product Safety Commission's national electronic injury surveillance system (NEISS) estimates that more than four million injuries involving typical do-it-yourself projects are reported to hospital emergency rooms each year.

Taking time to practice the following common-sense and inexpensive precautions will help ensure your home-improvement projects are safe.

## Power Tools

*[Each year, power home tools are involved in as many as 115,000 emergency-room visits. Nearly 80 percent of these injuries involve power saws in home workshops.]*

Read the instruction manual before using a power tool or machine.

Plug power tools into outlets protected with ground-fault circuit interrupters (GFCIs).

Wear proper eye protection when using any power tool.

Don't wear any loose or dangling clothing that could become caught in moving parts.

When using power circular saws, set the blade depth only a quarter-inch or so more than the thickness of the material being cut.

Keep the base of the saw clean and occasionally apply a thin coat of paste or wax to ensure the saw glides smoothly.

Support the material being cut so it won't pinch the blade and kick back toward you.

## Lawn-and-Garden Equipment

*[More than 200,000 visits to emergency rooms each year are related to yard-and-garden equipment, including chain saws, lawn mowers, and hand garden tools.]*



*Note: This do-it-yourselfer should be wearing goggles.*

When you're mowing, keep children inside the house or well away from the area.

Before you mow, inspect your lawn for sticks, stones, toys, and anything else that could shoot out from under the mower or damage the blade.

Before you start your lawn mower each time, ensure all guards are in place.

Store pesticides and herbicides on high shelves or inside locked cabinets, out of the reach of children.

When using a chain saw, make sure it is equipped with an anti-kickback chain that is well-sharpened.

## Ladders

*[Ladders and step stools are associated with more than 200,000 injuries each year.]*

## Injury Data From U.S. Hospital Emergency Depts.

(Courtesy Consumer Product Safety Commission's National Electronic Injury Surveillance System)

Products	2000	2001	2002	2003	2004	2005
Ladders, Stools	197,198	223,165	210,883	222,441	228,947	226,709
Workshop Manual Tools	116,493	120,181	126,164	127,703	125,189	121,676
Power Home Workshop Saws	89,670	88,657	87,006	91,149	97,860	92,547
Lawn Mowers	83,419	87,599	73,157	84,021	81,948	84,316
Lawn & Garden Equipment	73,431	76,057	71,203	78,516	70,987	73,611
Electrical Fixtures, Lamps, Equipment	53,983	53,913	51,048	53,139	53,654	49,567
Hand Garden Tools	47,275	43,828	40,661	49,946	42,826	48,822
Chain Saws	26,711	30,150	25,557	27,601	32,436	26,939
Power Home Tools (Excluding Saws)	34,702	33,091	22,796	21,661	22,668	23,091
Welding, Soldering, Cutting Tools	15,974	18,658	19,568	19,603	22,844	19,077
Other Power Lawn Equipment	21,506	18,884	18,333	16,783	16,880	17,185
Trimmers, Small Power Garden Tools	14,604	14,814	16,041	14,943	17,372	14,598
Hoists, Lifts, Jacks, Etc.	15,533	16,145	17,303	15,240	15,303	13,856
Wires, Cords, Not Specified	12,961	16,013	12,607	12,494	12,089	12,458
Hatchets, Axes					12,909	10,202

Use the right kind of ladder for your task, and make sure it complies with specifications of the American National Standards Institute (ANSI) and that it's listed by Underwriters Laboratories (UL). Most homeowners need a stepladder and a straight ladder (usually an extension ladder).

Read and follow the manufacturer's instructions on the label attached to the ladder.

Make sure your ladder is tall (or long) enough. For stepladders, obey the "not a step" markings on the top steps and the shelf.

Check over your ladder before you trust it. Look for damaged rungs, steps, hinges, and braces. If damaged, repair or replace it. Antiques are nice, but not when it comes to ladders.

Make sure you can lock the spreaders in place on stepladders.

Extension ladders should have "safety feet" that stabilize the ladder and keep it from slipping.

Set your ladder on a solid surface and keep it level.

Open stepladders fully.

When using a straight ladder, the base should be one foot away from the vertical surface for every four feet of height (to the point where the top of the ladder will rest).

If you're climbing onto your roof or a platform, make sure the ladder extends above the edge at least three feet.

Never lean a ladder against an unstable surface, such as a tree limb.

Always face the ladder when climbing. Carry tools in a tool belt, or use a bucket that you can raise and lower with a rope from the ladder.

Make sure your shoes aren't slippery.


You can put non-skid on the rungs of an aluminum ladder.

Don't reach too far to the sides or behind you.

Don't climb higher than the second step from the top on a stepladder or the third from the top on a straight ladder.

Only one person should be on the ladder at a time.

Tables, boxes and chairs aren't ladders.

Don't put ladders on barrels, boxes, concrete blocks, or other unstable bases. 

### Resources:

- Ten Steps to Better DIY Safety, <http://men.msn.com/articlepm.aspx?cp-documentid=5444429>
- Do-It-Yourself Safety Tips, [http://www.homesafetycouncil.org/safety\\_guide/sg\\_improvement\\_w001.aspx](http://www.homesafetycouncil.org/safety_guide/sg_improvement_w001.aspx)
- Do-It-Yourself (DIY) Safety Tips, <http://www.hometips.com/articles/safety.html>

# Why Americans DIY: For Money and Love

**W**hy do Americans—both men and women—flock to hardware stores and home centers, spend weekends painting and planting, and get hooked on home-improvement TV shows?

Of 1,000 American homeowners polled, a whopping nine of 10 said they DIY (do-it-yourself) to save money, 89 percent to add desirable features, 83 percent to enhance their home's value, and 77 percent to protect their homes.

Equally high numbers cited a feeling of pride (80 percent), a sense of accomplishment (79 percent), and self-fulfillment (70 percent) as reasons for wielding hammers, brushes and shears. And although saving money was the most common reason, 68 percent said they would do projects, even if they didn't save money.

"When folks tackle home projects and can gain benefits that encompass both economics and personal satisfaction, it's no wonder we have cable networks like HGTV, or that sales of hardware products grew at a compound annual rate of 7 percent from 1998 to 2003," said Lou Manfredini, national home-improvement expert, author, and Ace Hardware's "helpful hardware man."

Research has found more evidence of the DIY phenomenon: Americans today have an overall average of eight projects (8.2 for men, 7.8 for women) on their to-do lists. That number is up from five in 2002, when Ace posed the same question in their first DIY national study. Projects that top these lists usually involve painting, lawn and garden, and remodeling work.

"These numbers indicate a growing level of confidence among homeowners at all levels of experience



to take on a variety of DIY projects," said Manfredini. "Without question, the sources of information available to DIYers through the media, the Internet, at the hardware store, and from family and friends enable folks to perform these tasks successfully." ■

*Information for this article is taken from a 2005 "Why Americans DIY" telephone study conducted by an independent research firm for Ace Hardware. For complete results of the study, go to <http://www.whyamericansdiy.com/index.asp>.*

# Trigger-Happy Workers, Consumers Paying the Price

**A**n average 37,000 people go to American emergency rooms every year with nail-gun injuries. Sixty percent of these injuries occur on a job site; 40 percent occur at home.

Nail-gun injuries among consumers in 2005 were approximately three times higher than in 1991. The steady increase of consumer nail-gun injuries during the 1990s probably corresponded to increased availability of inexpensive pneumatic nail guns and air compressors in home-hardware stores.

As with most labor-saving devices, nail guns decrease the amount of labor while increasing risk. The tool's ability to fire several nails per second at a velocity of more than 1,000 feet per second presents obvious hazards. A nail going through flesh and bone has to cause considerably more pain than a smashed finger, which is the most common injury among those who still use an old-fashioned hammer.

One study of construction workers in three states found that two-thirds of all nail-gun injuries happen because someone bypasses or disables a safety device (such as a bumper or trigger safety).

Authorities recommend using the sequential-trip-trigger mode, which requires that you press the gun against the wood and then press the trigger. You then have to release the trigger and press it again. A faster but more dangerous technique is when you press the trigger before you touch the wood with the nail gun; you then can fire a nail each time you touch the gun to the wood. According to the CDC, the sequential-trip-trigger mode would prevent two-thirds of all injuries caused by the other method.

Another good rule of thumb is to disconnect the nail gun from the air supply when clearing jams or making adjustments; when you aren't using it, or you're leaving it unattended; when moving to another area; or when passing the nail gun to someone else.

Here are some other important precautions:

- Read the operator's manual, and follow the manufacturer's specifications.
- Wear sturdy clothing, heavy shoes or boots, eye protection, and hearing protection.

- Air hoses can present a trip hazard. Know where the hoses are, especially if you're working above ground level.

- Make sure of your footing and stay balanced. Don't reach too far.

- Never point a nail gun at a person. As with any firearm, always assume a nail gun is loaded and ready to fire.

- Don't let children handle nail guns.

- Keep the air-supply hose away from heat, oil and sharp edges.

- Don't use nail guns on scaffolds, ladders or other structures.

- Don't use nail guns on thin boards or near corners or edges. If you do, you run the risk of firing a nail through the material and damaging something or creating a personnel hazard. **S**

*Some data for this article came from the U.S. Centers for Disease Control and Prevention Morbidity and Mortality Weekly Report dated April 13, 2007, and a study of ER records in 101 U.S. hospitals.*

## Resources:

- SafeTips Nail Guns, [http://www.safetycenter.navy.mil/safetips/n-z/nail\\_guns.htm](http://www.safetycenter.navy.mil/safetips/n-z/nail_guns.htm)

- Nail-Gun Injuries Tripled Since '91 (data from the Centers for Disease Control and Prevention Morbidity and Mortality Weekly Report, April 13, 2007), [http://safetycenter.navy.mil/articles/n-z/nail-gun\\_injuries.htm](http://safetycenter.navy.mil/articles/n-z/nail-gun_injuries.htm)

- Toolbox Talk: Hammer Home Nail Gun Safety, <http://www.nbnnews.com/NBN/issues/2007-05-21/Construction+Safety/index.html>

- TOOLBOXTOPICS.COM (Construction Safety-Nail Gun Safety), <http://www.toolboxtopics.com/Construction/Generic/Nail%20Gun%20Safety.htm>

- Nail Gun Injuries Surge (emergency-department visits triple in 16 years, and do-it-yourselfers increasingly among victims), <http://abcnews.go.com/Health/story?id=3035560&page=1>

# It Seemed Funny When Tim Allen Did It

By AM1(AW) Ricky Lalonde,  
VAW-120

Anyone who ever has watched TV’s “Tool Time” with Tim Allen would agree he’s a walking hazard, and he makes the injuries to himself and damage to the equipment seem funny. In real life, though, these kinds of incidents aren’t funny—I know because I’ve been there, done that, and have the T-shirt to prove it.

Awaking about 0900 one morning, after working the night shift at the squadron, I followed my usual routine—kissed the wife, grabbed a cup of coffee, and disappeared into the garage. I had been working on a wood project and couldn’t wait to get back to it.

I laid out the wood I had to cut, put on my PPE, checked the table saw, and fired it up. After feeding through a couple boards, I shut down the saw to get a wrench from my nearby toolbox. I used the wrench to make an adjustment on the saw, then resumed cutting. Things went south when I reached around the backside of the blade to retrieve a piece of wood.

My thumb met the combination rip blade [see accompanying photo next page], sending blood and bone flying everywhere. After uttering a couple choice words, I made my way to the kitchen and got the bleeding under control—thank goodness for first-aid classes. Somewhere in all the excitement, my loving wife asked if I needed a band-aid—gotta love her.

We arrived at Portsmouth Naval Hospital about 15 minutes later. An eager staff worked for hours on bone, nerves and tendons, putting my thumb back together. They installed two pins in the bone [see this photo next page, too] and stitches to hold it all together.

After four months of limited duty, I’m just starting the process of therapy. The upper half of my thumb



probably never again will have feeling, and the injured thumb will be a little shorter than the other one—probably by about the thickness of the saw blade.

Since this injury occurred, a few people have come and told me about things they were doing or about to do but stopped in time to prevent a mishap. As I think about what happened to me, I realize the toolbox lid casting a shadow over the saw was a bad idea. I also know purchasing an extension for the table





would have helped considerably. I perhaps should have waited longer that morning before working with power tools, too.

I'll think about all these items and more before I start another job at home. Most importantly, though, I'll remember what we hear at work all the time about risk management: "Take it home and apply it to all your off-duty ventures." **S**

*The author was assigned to VAW-125 when he wrote this story.*

*I barely had finished reading the previous article when I came across the two that follow.—Ed.*

## Boxing With a Shadow Box (P.S.—I Lost)

By AM1(AW) Scott Kummell,  
VFA-86

I was helping a couple shipmates by building each of them a shadow box. Having started woodworking at age 18, I knew the dangers associated with power tools but felt comfortable with the equipment I would use. After donning protective gear, I went to work.

I was finished with all the cutting, except for making a groove in the last board for the glass to slide in. The first pass went smoothly, so I realigned the fence to make a second pass. When the board was about halfway through, it slipped and turned sideways just enough for the 10-inch table-saw blade to catch the board and throw it back, hitting me on the left side of my mouth [see accompanying photo]. I reached up and touched my mouth to find a warm liquid flowing from the lip.

I immediately shut off my saw and went inside to tend to the injury. After seeing that an adhesive bandage wouldn't be enough to close the wound (and prevent me from having to write this article), I went to a naval hospital, where I saw the duty oral surgeon. He poked and prodded inside my mouth, looking for a broken jaw, but told me I would be fine after getting



some stitches (21 to be exact) to close the wounds in both my lips. I was on convalescent leave for two weeks before returning to work.

In hindsight, I know I should have had a better grip on the board. And, while I was wearing goggles, I also needed a face shield to have prevented my injury. A quick slip in the shop is all it takes to cause a serious problem. **S**

# No Guard Almost Equals No Thumb

By AT2(AW/NAC) Patrick Schamel,  
VQ-4

It was Sunday, March 18—in two days, I would be leaving for deployment. I had a dozen or so things to do yet before I left, so I decided to get cracking on my list.

The first project was to remove a 65-foot pecan tree from the backyard. After dropping one of the large limbs on the neighbor's fence and taking out the rain gutter on the corner of my own house, I decided to hire a tree-removal service for the rest of the job. I already was pressed for time, so I left the tree to the professionals and turned my attention to the next project.

I had installed a new front door a couple months earlier but never had gotten it to fit right. With the beautiful day we were having, I figured it was a good time to finish this task.

I first removed the door because I had to reframe the opening. After measuring everything, I started cutting. I nearly was done, except for ripping one board. As I started feeding it through the table saw, I looked back at my right hand to reposition it. I took my eyes off the blade for only a second, but that's all the time it took. In repositioning my right hand, I plopped the thumb of my left hand directly in the path of the saw blade but didn't realize what I had done. Meanwhile, I kept pushing the board through.

When the saw blade contacted my thumb, I actually thought I had twisted the board and it had jumped on me. Then, however, I saw the telltale hole in my glove and peeled back the torn leather, exposing a huge squirting wound [see accompanying photo]. I quickly applied pressure to my thumb and ran inside the house to get my wife. I remember saying, "We have to go to the emergency room; I just cut off my thumb!"

As my son grabbed a towel, my wife grabbed our baby and the car keys. By the time we got to the emergency room, the shock had started wearing off, and the pain was beginning to sink in.



It wasn't until we got inside the hospital that I had my first clear look at how bad the injury really was. I had completely removed the pad of my thumb. There was an opening in my flesh, measuring about 12 mm by 10 mm, all the way to the bone.

The doctor took X-rays to check for bone damage. Somehow, I had managed to miss the bone completely. There was plenty of nerve damage and some possible tendon damage, however. Most importantly, the thumb seemed to be intact and would not have to be removed.

With hindsight being 20/20, I can see the things that led up to this incident. First of all, I was in a hurry. I had far too many things on my mind. I may have been working on the front door, but my mind was racing ahead to the kitchen floor and bathroom projects. Second, I was complacent. Having worked with saws most of my life had given me a false sense of confidence. I never bothered to put the blade guard on the saw—after all, I hadn't needed it before.

Because of my poor judgment, I missed deployment, and shipmates had to pick up the slack. I also was removed from flight status for 60 days, which prevented me from performing my job as an in-flight technician on E6-Bs. This situation could have been avoided if I just had used better judgment and allowed myself the time and attention to detail needed to do each task safely. ■

## Resources:

- Home Repair/Do-It-Yourself Resources, <http://safetycenter.navy.mil/toolbox/home/default.htm>
- Safety Tips for Do-It-Yourself, <http://www.indobase.com/home/do-it-yourself/index.html>
- Do-It-Yourself (DIY) Safety Tips, <http://www.hometips.com/articles/safety.html>

# How To Light Off a Light Fixture—Literally!

By Lt. "Buck" Herdegen,  
TraWing Six

**M**y wife and I had moved into our new house on beautiful Whidbey Island. Being a young ensign, I was low on money but high on enthusiasm, so we optimistically bought a fixer-upper and hoped to apply a significant amount of sweat equity over the summer.

Before joining the Navy, I had worked various construction and handyman jobs, and I was what you might call a jack-of-all-trades. You also might say I had just enough knowledge to be dangerous.

A typical evening found me in the midst of some much-needed repairs. We had had a new well dug, and I was wiring the pump myself to save some money. While in the basement, I found a wire that looked like it once had supplied power for lighting. The wire was hot, so I traced it back to the breaker box and secured the breaker. I then proceeded to wire the pump into the control panel.

When I was through in the basement, I again went to the breaker box in the garage. The well pump required 220 VAC, so I rewired the breaker and applied power. Looking through the open garage door, I could see my wife standing about 100 feet away at the wellhead. She smiled and gave me a "thumbs up" to let me know the pump was working.

I was enjoying the satisfaction of a job well done when my daughter, noticing the approaching twilight, switched on the outside lights. I heard my wife yell something unintelligible, and I looked to see her frantically giving me the "cut" signal as she ran toward the garage.

I immediately secured the power and listened while she explained that, as soon as the outside lights went on, flames had shot out of the light fixtures. An inspection revealed that all the decorative bulbs had exploded, and the glass was a smoky gray.

What went wrong? I found that the wire in the basement was on the same circuit as the outside lights. When my daughter turned them on, the bulbs received 220 volts of power. Luckily, they were the only casualties—the situation could have been a lot worse.

Like most amateur electricians, I had felt proud of myself for securing power at the breaker. However, electrical safety involves more than simply turning off the power before you wire. Know where electricity is going before you flip that switch. Another good idea is to have a professional check your work to make sure you haven't done something stupid. **S**

*The author was assigned to VAQ-133 when he wrote this story.*

## Resources:

- Electrical Safety Tips, <http://www.doityourself.com/scat/safetytips>
- Electrical, <http://www.bhg.com/home-improvement/maintenance/electrical>
- The Electricians Toolbox, <http://www.theelectricianstoolbox.com/learn/productinfo/diy.html>

# Stuck in a Tree

By STSCM(SS) Robert Dingmann, USN(Ret.)

**W**e've all heard stories about firefighters who rescued cats from far up in trees. Here's a tale about a two-legged "critter"—a Sailor. The firefighter in this case knew they had the right house as they drove up the street because a lady was waving at them from her front yard.

With a hurricane approaching, the Sailor had wanted to remove a dead branch. "Easy enough," he reasoned. "All I have to do is get a ladder and hand-saw and go to work."

Aware that some risks were involved with this job, the Sailor wore gloves and eye protection. He surveyed the area to determine that no danger existed from power lines, then positioned the ladder to get to the branch. The ladder didn't quite reach far enough, but he figured he could climb the

remaining short distance to the dead branch.

Soon, the Sailor was in the tree and had trimmed the dead limb. "Ah, one less thing to worry about when the storm hits," he thought. At that same instant, though, he realized he had a new problem: Climbing up the tree from the ladder had been easy; getting back down was going to be difficult. Fortunately, his Navy training kicked in, quite possibly preventing a disaster. He remembered his training in ORM—a little late, perhaps, but still worthwhile, since he was 30 feet in the air.

"OK, what's the worst thing that can happen?" the Sailor wondered. The obvious answer, as he stared at the hard ground, was to fall 30 feet. How likely was it that he would fall? He quickly realized it didn't matter, because the slightest chance was too

A hurricane approaches the East Coast of the United States.

Photo by Denis Chesters, Marit Jentoft-Nilsen, and Mark Sutton


much. His ORM training told him the risk-assessment code had to be 1—a serious concern.

About this time, the Sailor remembered his cellphone fastened securely to his belt. He carefully removed it and called the first person he could think of—his wife, who was at work. He had to repeat the story three times: a second time because she didn't believe him at first and the third time for the general entertainment of his wife's co-workers.

She, in turn, called the first place she could think of—the fire department, which also needed some repeated assurance that a real emergency existed. Then she hurriedly left work so she wouldn't miss this embarrassing moment in her husband's life, sure to become a family legend.

Remember the advertising jingle, "Orange juice—it's not just for breakfast anymore"? Now we have, "ORM—it's not just for on the job." Our Sailor had good intentions when he started, and he did take precautions to minimize some hazards related to his task. But he then encountered the part where things don't go as planned, and we're suddenly tempted to make decisions on the fly. We feel pressure (usually self-imposed) to keep working. The results are predictable: mistakes.

Life continually throws the unexpected at us, just to keep things interesting. Remember to stop and reevaluate. Did the hazards change? Are the risks now too great? Do we have to put different measures in place to mitigate the dangers?

This Sailor was smart. He knew he was undertaking a risky job. When he realized things weren't going as planned, he should have stopped and analyzed his options, then weighed the risks and benefits of each. Had he asked himself just a few "what if" questions a little earlier, he probably wouldn't have gotten that shiny, new, red, toy firetruck on his birthday to remind him about what had happened. 

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

**Resources:**

- How To Remove a Dead or Diseased Tree Limb, [http://www.ehow.com/how\\_118398\\_remove-dead-diseased.html](http://www.ehow.com/how_118398_remove-dead-diseased.html)
- Tree Care Information, [http://www.treesare-good.com/treecare/pruning\\_mature.aspx](http://www.treesare-good.com/treecare/pruning_mature.aspx)
- Pruning & Trimming Trees, [http://www.easy2diy.com/cm/easy/diy\\_ht\\_index.asp?page\\_id=35720699](http://www.easy2diy.com/cm/easy/diy_ht_index.asp?page_id=35720699)

Continued from page 1

During the 2007 Critical Days of Summer, 19 Sailors and 24 Marines died, with traffic fatalities the frontrunner. In recent years, about one-third of the annual total Navy and Marine Corps deaths occur during this period.

Why are the Critical Days so dangerous? Many factors come into play. Traffic risks increase because, with schools out, many service members transfer, which means more families are traveling between duty stations. When service members visit home, they often travel for too long a time without rest or a break. Recreational safety specialists sometimes call summer "the drowning season," simply because of increased exposure at beaches and lakes, on boats, and, increasingly, on the popular personal watercraft.

For each increased risk, there are controls, and our 2008 Critical Days of Summer campaign aims to make those controls clear and easy to apply. Stay tuned to our website (<http://www.safetycenter.navy.mil>) for all the latest tools available to help you get through this period safely. A simple "Critical Days of Summer" search should give you a host of choices.

In the meantime, here are some common-sense tips to help you avoid the obvious risks:

- Never drive impaired... If you drink, do not attempt to operate cars, motorcycles or boats.
- Wear your seat belt, and make sure all passengers do the same.
- Get plenty of rest before and while traveling.
- Don't swim alone or in unknown waters; also pay attention to changes in weather and water conditions.
- Use U.S. Coast Guard-approved personal flotation devices when boating or riding personal watercraft.
- Don't overexert yourself during athletic events, and drink plenty of water.
- Use sunscreen during outdoor activities.

Whether you're at home, at the beach, or at work, be alert to your surroundings, and make smart decisions to reduce or eliminate unnecessary risks. Always ask yourself, "If I take this risk, can I live with the consequences?" Choose wisely, because we are depending upon your return to the command... mission ready! Have a GREAT summer!



A. J. JOHNSON  
Rear Admiral, U.S. Navy

# What's Worse Than a Toxic Spill? **A Toxic Cleanup!**

By AMEAN C. J. Boyington,  
VAW-123

**I**t was another hot, humid day on our summer deployment in support of OIF. I was walking across the ship's hangar deck when I witnessed a hazmat spill in front of elevator No. 2. A young Sailor from the deck department was carrying five containers full of grey and white paint when the bottom container slipped, sending all five containers plummeting to the deck.

I quickly helped the young Sailor contain the spill with rags I had on hand at the time. I then ran to my workcenter to retrieve more rags to soak up the residual paint on top of the nonskid.

When I returned to the scene, another seaman and his supervisor had arrived and were helping in the cleanup. The supervisor, a BM3 from deck department, ordered the two seamen to clean the paint off the deck. In the meantime, I went to retrieve plastic bags to dispose of the contaminated rags. When I returned, I was shocked to see the BM3 pouring three gallons of paint thinner on the deck. He then ordered the two seamen to get on their hands and knees, without personal protective equipment (PPE), and scrub the paint off the deck. They obeyed.

As I got closer to the scene, chemical vapors from the paint thinner started stinging my eyes, and the two seamen complained that their skin was burning. Their uniforms, standard Navy-issue coveralls, were soaked in paint thinner and paint. They also were gasping from the intensity of the vapors coming from the spill.

I told the two seamen to get out of the hazmat. As they got to their feet, the BM3 became enraged and started yelling and insulting them. He ordered both back on their hands and

knees to scrub the deck. Again, they complied with his order. I stepped in once more, though, and told them to get to their feet and not to clean up anymore of the spill until they had the proper PPE.

The BM3 then started insulting me, but I didn't argue with him. I knew what was right, and I wasn't going to let him harm the young Sailors' health with his disregard or ignorance of the Material Safety Data Sheet (MSDS).

I turned and walked to the aft corner of hangar bay 2, where two of my supervisors were overseeing an engine change on one of our aircraft. I told them about the situation, and they quickly helped me stop the dangerous evolution.

When we got to the scene, the two seamen had returned to cleaning the spill without proper PPE. Their eyes were watering, and their skin was beginning to blister. My supervisors immediately ordered the two seamen out of the hazmat and told them to take a shower and change their uniforms.

Meanwhile, another shipmate had informed a safety petty officer about the situation. She arrived in time to witness the BM3 still being belligerent and arguing with the two squadron first class petty officers. At this point, the BM3 realized he was wrong and wasn't going to win this battle.

The two young Sailors cleaned up and were treated for their injuries. I gathered PPE and helped finish the cleanup correctly and quickly.

This whole incident could have been avoided. The Sailors should have used the proper PPE. When the BM3 was told he wasn't following the



Navy photo by PH3 Dennis Lacovara

A Sailor uses a controlled amount of solvent to remove paint from aircraft parts. Note that he's wearing double eye protection (goggles and face shield), an apron, and gloves, all of which the two seamen in this story should have been wearing.

*no smoking; do not empty into drains; avoid contact with skin and eyes.*

- *Accidental Release Measures (Containment Techniques): Keep unprotected personnel away; wear appropriate personal protective equipment; ventilate spill area; stop spill at source; dike & contain.*

- *Accidental Release Measures (Cleanup Procedures): Mop up & dispose of; persons without proper protection should be kept from area until cleaned up.*

- *Handling and Storage (Personal Protections): Wear OSHA-Standard goggles or face shield; consult safety equipment supplier; wear gloves, apron & footwear impervious to this material; wash clothing before reuse.—Ed.*

rules, he should have taken the good advice and protected his Sailors from a dangerous situation. I was glad some senior petty officers were available to help me enforce the command's safety programs. 🚫

*Note these comments taken from the MSDS for the paint thinner the misguided BM3 poured on the deck:*

- *Risk Statements: Highly flammable; irritating to eyes, respiratory system, and skin; harmful by inhalation, may cause lung damage if swallowed.*
- *Safety Statements: Keep container in a well-ventilated place; keep away from sources of ignition,*

### Resources:

- SafeTips Painting, <http://www.safetycenter.navy.mil/safetips/n-z/painting.htm>
- OPNAVINST 5100.19E—Navy Safety and Occupational Health (SOH) Program Manual for Forces Afloat, <http://www.safetycenter.navy.mil/instructions/OSH/5100-19E/default.htm>
- Here's to Paint in Your Eye!, <http://www.safetycenter.navy.mil/MEDIA/fathom/issues/OctDec02/Paint.htm>



# The **Flight Deck Demands Flawless Performance**

By Ens. Theresa Donnelly,  
USS *Russell* (DDG-59)

**H**ow important is it to the flight-deck crew on board this Pearl Harbor-based guided-missile destroyer to get the job done safely? Their performance during a Composite Training Unit Exercise (CompTUEX) indicates it's the No. 1 priority. The flight-deck crews conducted more than 70 flawless deck-landing qualifications (DLQs) and numerous personnel and parts transfers during this exercise, which began Oct. 25.

*Russell's* flight deck can accommodate a landing by almost any type of military or civilian helicopter. Pilots land both day and night, when visibility often is restricted to just a few miles. For this reason, among others, our crew must stay well-trained and ready to react quickly in case of emergencies.

"As soon as flight quarters is announced over the 1MC, the team is ready to go," said Chief Boatswain's

Mate Shawn Salazar. "They immediately don their life preservers and check them to ensure they contain all the required gear."

Flight quarters often is briefed hours or days in advance, with the crew's knowledge of what the evolution is going to be for (e.g., DLQs, parts transfer, or people leaving or coming to the ship). The crew begins by taking down all safety nets that line the edge of the flight deck; they also lower the ship's high-frequency antennas. These tasks require the ship to slow down. Good supervision is essential.

"Before we start taking down the nets," said Seaman David Burley, "the safety officer checks with the bridge to see if the ship is on a steady course. He also makes sure all personnel have donned their life jackets."

Next, the crew conducts a foreign-object damage



(FOD) walkdown. This event ensures no loose particles will be sucked into the engines of the helicopter or cause an injury. Personnel form a line at the beginning of the flight deck and walk aft, visually inspecting every inch of the deck for any debris. “If a piece of the deck’s non-skid was to blow up during landing, it really could hurt somebody,” said Boatswain’s Mate Second Class Daniel Kleemeyer. The ship’s at-sea fire parties, known as “crash and smash,” also participate in the FOD walkdown.

The three fire teams man up on station as soon as flight quarters is called over the 1MC. More than 15 crew members, with each assigned different roles, stand by in case of an aircraft fire.

If the helicopter needs fuel, another team, known as “grapes” (because they wear purple jerseys), gets called into service. They stand by each time flight quarters is called away, even if



the helicopter isn’t scheduled to refuel. “Sometimes, the helicopter stays longer than expected, and it’s our job to be there in case fuel is needed,” said Gas Turbine Mechanical Second Class Mathew McTighe, the refueling supervisor. “The fire and fuel teams are extremely well-trained,” he added. “They know what their role is and how to fight a fire if one occurs.”

Before getting underway, the ship sends team personnel to schools for training. *Russell’s* deck division, primarily in charge of each evolution, sends personnel to landing signal enlisted (LSE) school, often months before assuming the role. This head start ensures they get plenty of on-the-job training.

Once a helicopter is on final approach, Ens. Kurt Welday, the ship’s helicopter control officer, gives the pilot information about wind speed, direction, and the course and speed of the ship. This information ensures optimum conditions are met for a safe landing.

Putting down a helicopter on a moving ship is not an easy task. It takes a great deal of coordination, training and motivation to do the job safely. *Russell’s* flight-deck crew is a testament to the fruits of hard work and dedication to duty; these Sailors perform flawlessly daily. 🚩



#### Resource:

- Flight-Deck Awareness, A Basic Guide for Amphibious and Small-Deck Ships, [http://www.safetycenter.navy.mil/MEDIA/downloads/FlightDeck-Aware\\_amphib\\_05.pdf](http://www.safetycenter.navy.mil/MEDIA/downloads/FlightDeck-Aware_amphib_05.pdf)

# An Unwanted AFFF Washdown

By LCdr. Jason Greene,  
NAS Corpus Christi

**W**e were flying both of our det helicopters aboard an underway destroyer, the same one on which we'd eventually deploy. Being a brand new co-pilot, I was excited about finally doing some fleet flying. I was on the first aircraft aboard.

After an uneventful landing, we stuffed the helo in the hangar. My OinC and I then went to the landing safety officer (LSO) shack to recover our remaining aircraft. During the wait, my OinC took time to conduct some LSO training. He familiarized me with all the mechanical controls for winching down and securing the helo to the flight deck, as well as lighting controls, firefighting systems, etc. In particular, I noted that the push buttons for activating the crash alarm and aqueous-film-forming-foam (AFFF) system had a cover plate and a yellow, zip-tie tamper seal.

The second helicopter made a textbook landing and was disengaging its rotor when my OinC and I were startled by what happened. Every flight-deck, flush-deck nozzle started spraying water—saltwater—more than 15 feet into the air. Wait, it gets better.

Within 10 seconds, sheets of foam were rolling down the windows of the LSO shack until we were IMC. The OinC told me to check and make sure the AFFF system was off. I pointed to the cover and tamper seal. He directed me to open it and turn it off, so I broke the seal and repeatedly pressed the “stop” button, but nothing happened. The columns of foam continued.

All the while, the OinC kept yelling into the flight-deck PA system for the fire party to secure the system. “Get it off!” he screamed. “You’re ruining a multi-million-dollar aircraft.” The fire party tried to turn off the system from inside the hangar, but the controls there failed, too. Meanwhile, the aircrew sat tight and tried to stay dry.



Navy photo by PH1 Alan Monyelle



After what seemed like an eternity (actually about four minutes) of helplessness, the deluge ceased. The fire-party chief had hustled below decks and secured the AFFF station. We immediately began to take off the aircraft panels and started a freshwater rinse. Afterward, we wiped down miles of electrical wires that had been exposed.

An investigation then started to determine why the system had come on and, equally as important, why we couldn't stop it. All system-activation points had covers and tamper seals, except one in the helicopter-control-officer (HCO) tower. A ship's-company officer is assigned as the HCO to serve as an extra safety observer during all flight ops. The tower has lighting, communication and firefighting controls similar to those found in the LSO shack. The AFFF-control panel in the tower is to the side and slightly behind where the HCO normally sits. The HCO later said he had been leaning back in his chair and admitted it was possible he had bumped the control without realizing it.

During our investigation, we learned that the AFFF system only can be secured at the panel from which it is activated. Not knowing he was responsible, the HCO never thought about pushing the "stop" button.

We were lucky the aircraft was safely on deck at the time and not transitioning to a hover over the flight deck at night or some other critical flight phase.

Interestingly, we discovered the ship had noted the absence of the AFFF-push-button cover several months before during a zone inspection, but nothing had been done about it. Taking notice is an important first step, but you must follow through, or it means nothing. ■

*The author was assigned to HSL-46 when he wrote this article.*

#### **Resources:**

- AFFF Firefighting Systems, <http://www.dcfp.navy.mil/mc/presentations/AFFF.ppt>
- InSurv Quarterly Surface Ship Message, <http://www.spawar.navy.mil/fleet/insurv/files/qtrlymsgs/INSURV%20QUARTERLY%20SURFACE%20SHIP%20MESSAGE%20NR%2017.pdf>

# If You Accept It, You Own It

By LCdr. William L. Partington,  
*USS Kitty Hawk (CV-63)*

**A**rriving on board an LPD as a chief machinist's mate in charge of the forward main-machinery room, I was happy to be back on sea duty. I just had completed a long tour of shore duty, pushing boots at Recruit Training Command in San Diego.

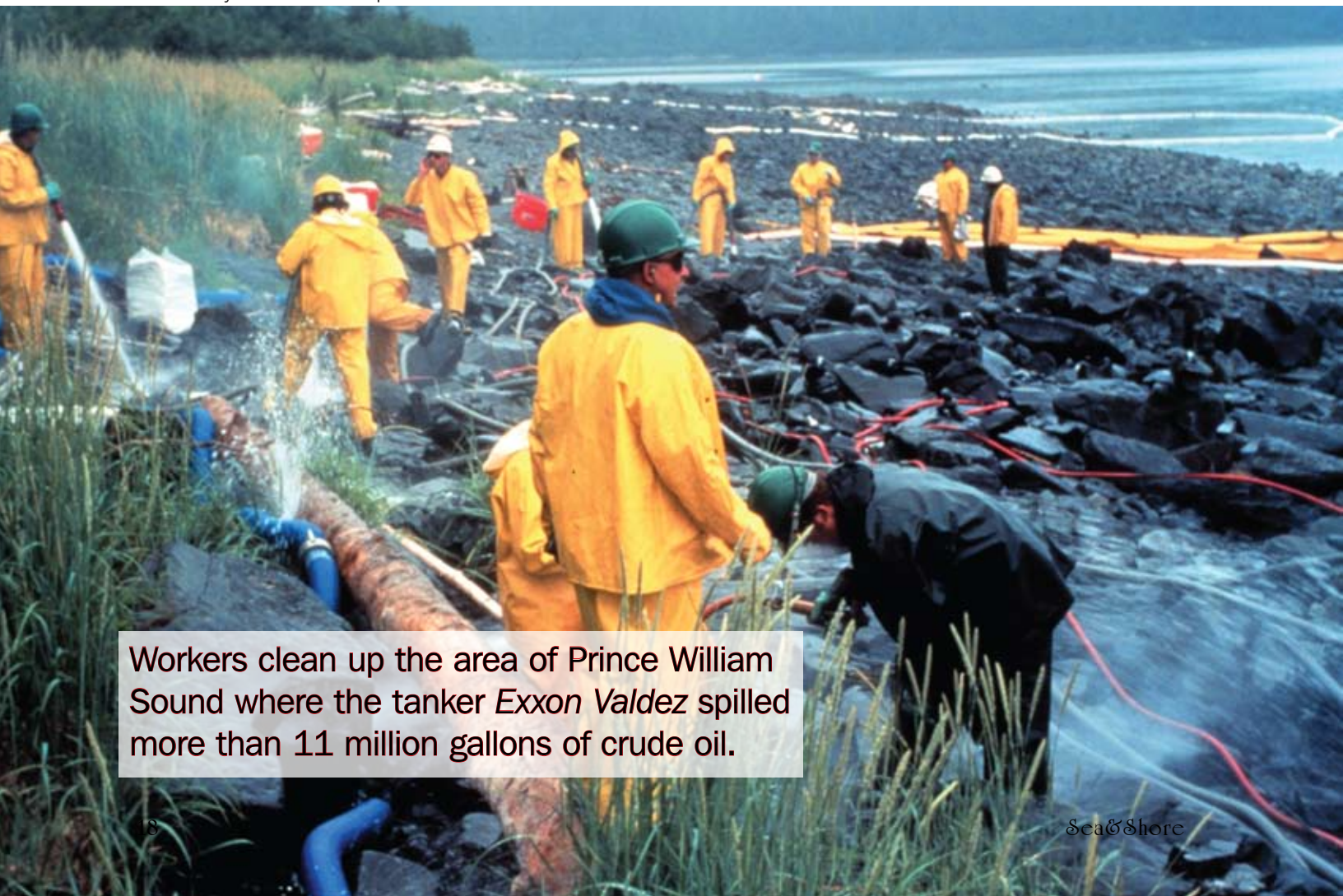
The "Steamin' Amphib," as my new command was called, had a great reputation. The ship recently had returned to San Diego from Alaska's Prince William Sound, where crewmen, along with 11,000 other men and woman, had assisted in the massive cleanup of the *Exxon Valdez* spill. The tanker had spilled more

than 11 million gallons of crude oil in the sound, one of Alaska's most beautiful areas.

The clean-up efforts had included picking up dead wildlife, scrubbing rocks, and skimming crude oil off the surface of the sound. High-pressure sprayers also were used to treat oil-drenched beaches with solvents. The LPD's mission was to act as a support ship for the thousands of people who were doing the dirty work.

I listened to crew members' stories of the cleanup as I walked through my many spaces for the first time.

Photo courtesy Exxon Valdez Oil Spill Trustee Council



Workers clean up the area of Prince William Sound where the tanker *Exxon Valdez* spilled more than 11 million gallons of crude oil.



The Navy uses six-ounce plastic bottles of calcium hypochlorite like this one for water purification.

Overall, my newly acquired work spaces looked OK, but I already was forming a game plan for how I would improve some of them. One of the storage rooms looked particularly cluttered and dingy. I made a mental note to clean up and inventory the storeroom, then continued my tour. I figured I'd have plenty of time to take care of the storeroom's mess before it bit me. My next stop was at the engineer officer's office, where I reported that I had reviewed the admin and walked the spaces. I left, saying, "I've got it."

A couple of weeks later, before I had gotten around to cleaning the storeroom, I got a report that a steam-drain pipe was leaking and that water was sloshing around on the deck. I checked out the problem and found a cracked flange. "No problem," I thought; "I'll just tag it out and get one of our trusty hull techs to braze it up."


The HT got to work—and just in time, because a couple inches of water had accumulated on the deck. About an hour into the repair, the DCA sounded a toxic-gas alarm, and people were heading toward my storeroom. I immediately assumed the HT somehow had been overcome by vapors while brazing, but I was wrong.

A quick investigation revealed the HT had knocked a large container of calcium hypochlorite off a shelf, and it had broken on the deck. The chemical

mixed with the water on the deck and, when agitated by the ship's movement, produced a deadly chlorine gas. You're probably asking what the hazardous and controlled chemical was doing in my storeroom—the same question I had.

A non-military source had given the calcium hypochlorite to the ship's engineers during the Prince William Sound clean-up effort. The Navy uses it (in six-ounce plastic bottles) for water purification. Although the containers in my storeroom were not the standard size found in the Navy supply system, the crew was happy to have gotten them because calcium hypochlorite usually is hard to find in large quantities. I'm sure the crew probably had figured they would use all the hazardous chemical or dispose of it before they came back to CONUS, but that didn't happen.

Calcium hypochlorite aboard an amphib normally is kept in a locked, ventilated, metal cabinet under the control of the engineer officer. The box must be painted white and must have red letters stating, "Hazardous Material—Calcium Hypochlorite." Drilling three one-quarter-inch holes in the bottom of the box ensures ventilation and prevents a Sailor from getting a large shot of gas to the face when he opens the box. The bottles must be stowed in sealed plastic or zip-lock bags. The locker must not be located where there is a possibility of contact with paint, solvent, grease, or combustibles, and the ambient temperature of the area must not exceed 100 degrees Fahrenheit. A medical-department representative must inspect the storage area monthly. Unfortunately, all of these requirements were violated in this case.

This story did not end as horribly as it could have. Although chlorine gas was in the air, my shipmate got out in time to avoid permanent injury. The engineer officer and I had to go to see the "old man," and we had some explaining to do. I learned two of life's lessons I've heard repeated many times: First, when you accept a space on a ship, you own it. Second, expect what you inspect! 

*For requirements pertaining to calcium hypochlorite, consult NSTM 670-5.5 and OpNavInst 5100.19E.*

#### Resources:

- Calcium Hypochlorite Stowage..., <http://www.dcfp.navy.mil/mc/articles/flash/070900H.htm>
- Shipboard Decontaminating Agents, <http://www.msc.navy.mil/n7/DCINs/DCIN021.htm>

# A Wide-Awake Drunk

By Cdr. Kevin Brooks, MD, MPH,  
Naval Safety Center

**T**hat's what you get when you mix a so-called "energy drink" with alcohol.

Energy-drink users have been mixing them with alcohol for a long time, and the drink manufacturers now are moving to take advantage of that trend. The result: alcoholic energy drinks! I guess it wasn't enough to pour extra sugar, stimulants and other ingredients into our young folks; now we have to add in booze!


And the beverage companies are aggressively marketing these products to young people. The packaging is flashy and eye-catching, and it uses trendy words and phrases that will attract the young crowd. The packaging frequently is confused with similar, non-alcoholic drinks, so that some users and parents don't even realize that alcohol is an ingredient. And the pricing is aggressive, too—often lower than the non-alcoholic energy drinks.

Why are energy drinks so incredibly popular with young people? Largely because the beverage industry targets them with claims of increased stamina, alertness and performance, not to mention a touch of the ever-popular coolness factor. And anyone who has bothered to look around at our exchanges, geedunks and other stores knows that Sailors and Marines l-o-v-e their energy drinks.

Whether these drinks deliver on their promises isn't clear, and there are lots of concerns about how they impact drinkers' health. In general, energy drinks contain excessive amounts of sugar, some form of stimulant (frequently caffeine and/or guarana), and various other ingredients that supposedly offer one benefit or another. All that sugar adds up to excess calories that easily can lead to unwanted weight gain. The stimulants cause all sorts of side-effects, including nervousness, abnormal heart beats, high blood pressure, and insomnia. Caffeine-withdrawal headaches, stomach upsets, and indigestion are other common problems. The large amounts of sugar, especially when taken with caffeine, also cause the dreaded "crash" that occurs when the sugar runs out. Among many other health concerns are weakened bones and teeth, and poor immunity to diseases.



Most of us know about the many problems associated with drinking alcohol, but in case you were snoozing, here's a quick recap. Alcohol is a depressant, the opposite of a stimulant, and so it causes parts of the body (the brain and nervous system, in particular) to work slower and less effectively. This depressant effect is what slows reflexes, interferes with judgment and inhibitions, and slows down thought processes in general. Alcohol also causes other problems, including liver disease, stomach problems, etc., and it's another source of excess calories (which usually equates to weight gain, much like excess sugar).

So, why would someone sipping a drink that's supposed to energize and increase alertness want to add alcohol, which slows one down and decreases alertness and mental ability? Well, the idea is that alcohol is "fun" by itself, and it's supposed to offset the jitters caused by the stimulants. The problem is that when you mix an energy drink with alcohol, it doesn't quite work out that way. In fact, what you end up with is a "wide-awake drunk"! And you get that, along with all the accompanying side-effects and health hazards... what a deal! 

# A Surfer's Dream Come True—Or Not

By Lt. Todd Benke,  
Staff, ComPacFlt

**T**he weather reports sounded almost fictitious—a huge storm brewing off the coast of California was producing waves not seen in a decade. The experts were forecasting waves in excess of 10 feet. Surfers from all over the West Coast were driving to Southern California for a chance to surf “the big kahuna.”

I recently had moved to Point Mugu, just a short drive from Malibu on Pacific Coast Highway. I knew the beach on base produced some of the best waves in one of the best surfing parts of Southern California. “What could be better?” I thought. In retrospect, what would have been better was actually knowing how to surf.

The story should end here, with my sitting on the rocks, watching those huge, quick-breaking waves, along with the media, amateur photographers, and surfing aficionados that lined the beach that day. However, that’s not what happened.

I had been in the water a few times with a borrowed wet suit and a borrowed long board, but my total surfing experience amounted to standing up in the white water for less than 10 seconds. I couldn’t even paddle through the surf, much less stand up or point myself in the right direction. I had no business being in the water with professional surfers on such a dangerous day, but I felt I just couldn’t pass up this chance.

“Maybe the waves were too small the other times,” I thought. “Maybe this is my time to capitalize and have my nonexistent surfing skills come together.”


As soon as I got in the water, I knew I was wrong. The waves relentlessly pounded me, and, after 30 minutes, I finally got through the break with a little help from a huge undertow. What happened next almost killed me. A wave the size of a two-story building approached and looked like it was going to break right on top of me. Because I didn’t know how to paddle out of trouble, I braced for the impact.

I immediately started doing somersaults and twists underwater—like a Russian gymnast—as I tried to pop to the surface. Mercifully, after what seemed an eternity, I barely got a breath of air, only to be slammed by another monstrous wave. This scenario kept repeating itself until I ended up far away from the beach, completely spent, and out of breath.

What was I going to do now? How was I going to get back alive? I didn’t know if my body could take any more pounding or if I was strong enough to escape the undertow.

I ultimately decided I had no choice but to submit my body to more punishment if I wanted to get out of this mess alive. After minutes of fighting Mother Nature and my own ineptitude, I finally reached the shore and collapsed on the beach, unable to walk and barely able to breathe.

Five minutes passed before a couple walked over to see if I was all right. Thankfully, after an hour of the Pacific Ocean telling me never to test her again, the only thing hurt was my pride.

I learned many lessons that day—the most important of which is not to overestimate your abilities, especially against Mother Nature. I also learned you don’t surf big, quick-breaking waves with a long board—any novice knows a short board is the only thing that will work. Finally, the next time large waves are outside, I’m staying home and watching TV. 

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

## Resources:

- Big Wave Surfing, [http://en.wikipedia.org/wiki/Big\\_wave\\_surfing](http://en.wikipedia.org/wiki/Big_wave_surfing)
- Surfing Safety, [http://www.extremehorizon.com/surfing\\_safety.asp](http://www.extremehorizon.com/surfing_safety.asp)
- National Surf Schools & Instructors Association Safety Rules, [http://www.nssia.org/Safety\\_Rules.html](http://www.nssia.org/Safety_Rules.html)

# Up the Creek...

By Lt. Drew Osborne

It was a beautiful, summer Friday on Whidbey Island, the kind of day that brings a measure of redemption to the fact that I fly the ugliest jet in the Navy. Some other enterprising junior officers and I had decided to spend the latter part of the afternoon out in the Puget Sound on my fishing boat.

Two midshipmen assigned to our squadron for their summer cruise also were in tow. The XO had cleared our venture but with the provision that we show the middies some of the other aspects of Navy life. He warned us there would be a price to pay if the middies came back damaged.

We loaded the boat with crab pots, fishing poles, and beer, reveling in our good fortune as I cranked the engine at the Cornet Bay boat launch. We were living happy times as we rounded the corner of the bay, and the famous Deception Pass Bridge came into view.

We reached the pass just as a minus-four tide—one of the lowest low tides in years—was starting to

turn. From Skagit Bay, the water has only two routes of flow during tidal changes: around the south end of Whidbey Island and through the narrow 40-yard-wide Deception Pass to the north. The large tide turn meant we could expect really fast currents through the pass.

As we made our way under the bridge, I noticed how hard my boat seemed to be working against the current. Violent eddies and whirlpools surrounded the boat and were changing its heading by as much as 20 to 30 degrees as we went through them. We slowly were passing under the bridge, between towering rock walls on either side, when one of my ECMO buddies jinxed us. “Man, wouldn’t it suck to lose the engine right now!” he exclaimed.

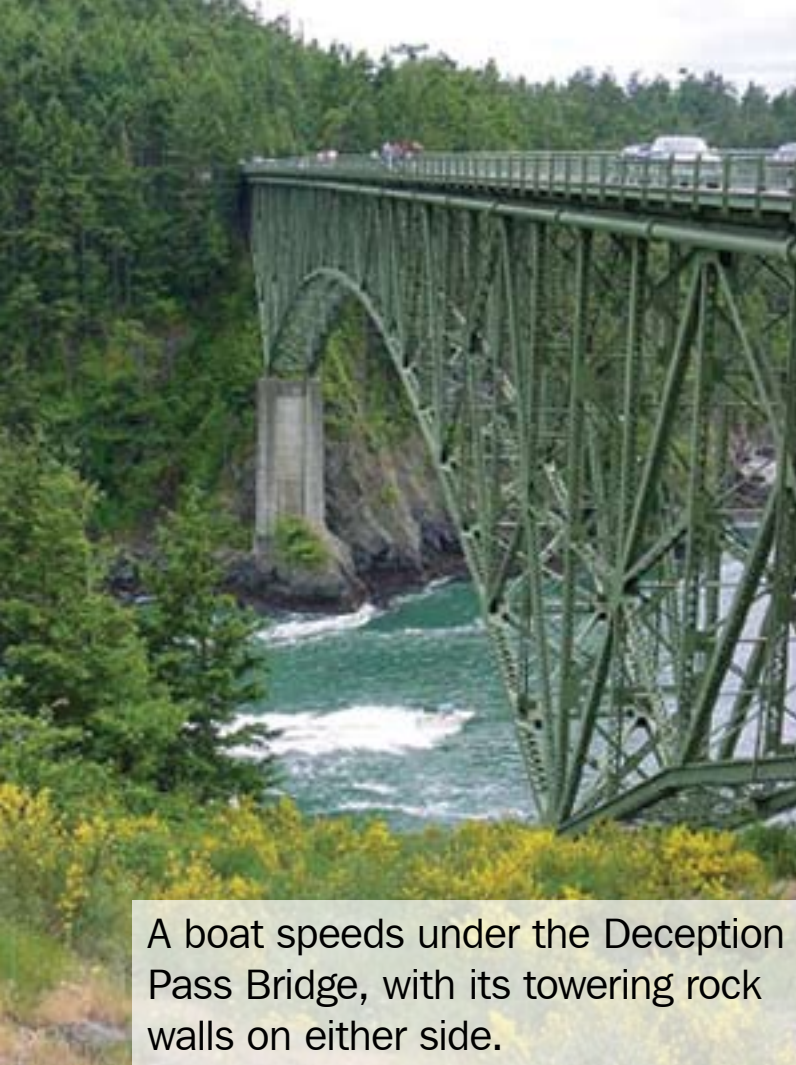
You’d think a guy who flies Prowlers would know better than to tempt fate so boldly with such a comment. As you might expect, we had made it a whole 200 yards past the other side of the bridge when the

An EA-6B, described by the author as “the ugliest jet in the Navy,” gets ready to launch from the flight deck of USS *John C. Stennis* (CVN-74).



Navy photo by PHAN Michael Geary





A boat speeds under the Deception Pass Bridge, with its towering rock walls on either side.

engine overheated and quit. The current instantly started pulling us back toward the rocks on the south side of the pass. After a couple of unsuccessful restart attempts, we realized we really were “up a creek...” You know the rest of that phrase.

I immediately had everyone put on life jackets as a squadronmate paddled frantically to line us up with the narrow pass in hopes of dodging the rocks on the south side. I jumped on my cellphone and hit the first preset dial, Vessel Assist, a marine towing service of which I was a member. It was based only three minutes away from where we had launched. I told the guy on the other end of the line that we had lost our engine and were headed back into the pass without power. Thankfully, he told us he would be there right away.

That piece of good news, though, was accompanied with some bad. We had hit the wall of water that was bouncing off the south wall of the pass. Fortunately, however, it pushed us away from the rocks and into the center of the pass. We didn't hit anything, and the Vessel-Assist boat reached us just as we traversed the last part of the dangerous passage.

While it might sound slow to most aviators, I checked my GPS, and it indicated 9 mph when we

passed under the bridge. That's faster than you ever want to be traveling when you have absolutely no control over your boat.

What did I learn from this incident? First, practice what the instructor at any safe-boating course will tell you: Always check weather conditions before you leave the dock, and don't try to mix boating and alcohol. You also must have enough life jackets on board and make sure all passengers wear one. Before this near-miss, I usually had enough life jackets on board but didn't make people wear them unless they were consuming alcohol. In hindsight, that policy was foolish. The waters of Puget Sound are dangerously cold, even in the summer, and the 50-degree water can have you hypothermic in less than 30 minutes.

Another lesson I learned was to “check flight” the boat's engine before trying something as demanding as navigating the pass. A mechanic just had done maintenance on my boat, so I should have checked it before leaving the launch area.

One thing I will pat myself on the back for is having the Vessel Assist phone number ready to go. I also had a marine radio as backup if the cellphone didn't work.

The lesson I've learned while flying a jet like the Prowler is that equipment invariably will fail at the worst possible time. One needs to be prepared for all contingencies and have the proper safety equipment available—whether you're flying, hiking, boating, or whatever.

Oh, yeah, one more thing: Make sure your navigator doesn't jinx you. 🚫

*The author was assigned to VAQ-129 when he wrote this story.*

#### Resources:

- Nautical Know How – Boating Tips Notebook, <http://www.boatsafe.com/nauticalknowhow/safetips.htm>
- Boating Safety, <http://www.uscgboating.org/SAFETY/safety.htm>
- Fishing and Boating Deception Pass, [http://www.deceptionpassfoundation.org/fishing\\_and\\_boating.htm](http://www.deceptionpassfoundation.org/fishing_and_boating.htm)
- Deception Pass Beauty Is Awesome, But It Can Give Boaters, Divers the Willies, <http://archives.seattletimes.nwsource.com/cgi-bin/texis.cgi/web/vortex/display?slug=deception29m&date=20020729>

# A Beautiful Day in De

By Lt. Todd Cunningham,  
NAS Patuxent River

It was a beautiful day on Guam—sunny and 85 degrees. I was kicking myself for not getting out earlier and enjoying the weather. I had spent the morning sleeping in, watching TV, and cleaning my condo.

I called a couple of friends, but none who still were at home felt like doing anything outside, which immediately ruled out scuba diving and spear fishing. I needed a buddy for those activities. I didn't really feel like hiking alone, either, although I had done so in the past, despite the dangers involved.

While looking out my window at the beautiful turquoise bay and deep, blue ocean just beyond some big breakers, I decided to go kayaking. These larger-than-normal breakers were the result of a large storm that had passed nearby just a few days earlier. However, Tumon Bay was very calm inside the reef. I planned to paddle up and down the beach, instead of going over the reef as I often do under calmer conditions.

I was paddling up the beach when I noticed the small waves inside the breakers looked great for kayak surfing (where you ride the waves in your kayak as if it were a surfboard). I had done it many times before.

As I explained to a friend on the beach, I only planned to ride the inner waves; I wasn't going anywhere near those big breakers. I knew what they could do. As a ground-safety officer, I had given newcomers in-depth explanations on reef dynamics and the dangers of the waters surrounding Guam. The waves tend to smash people against the sharp coral and pull them down in a washing-machine effect. Riptides pull people out past the reef and make it nearly impossible to swim back without becoming exhausted. I also knew that five kayakers already had died in Guam earlier in the year.

I rode the small waves for about a half-hour with no problems and was paddling out for another ride when I noticed the waves were a little larger. I kept paddling slowly, waiting for a good time to turn around. I decided I was close enough to those big breakers and made my move, despite the fact that a large set was coming in. I knew the inner waves would

be 2 or 2.5 feet and could flip me if they hit my kayak broadside, but I had to get turned around.

I now was about 40 feet from the outer edge of the reef, where the 5-to-7-foot waves were crashing. In hindsight, back-paddling may have been a better option. As I turned, a wave hit me broadside and flipped me. I stayed calm and got back in my kayak with no problems—at least, that's what I thought until I realized a strong rip current had pulled me out. I now was sitting on bare rock; all the water had been pulled out. I knew I was in a bad place.

I looked back just in time to see a huge wave breaking on top of me but couldn't do anything, except take a deep breath before it hit. Suddenly, I was hurled off my kayak, toward the reef, and felt my chin hit it hard. I remember thinking, "OK, I'm still conscious." I quickly realized I now was in a survival situation.

When I surfaced, I was in deep water. My mask and snorkel were around my neck, where I had placed them before I started kayaking—as a precaution. I was glad to have them but wished I had a helmet and life vest, instead. I prayed for help and quickly put the mask on my face and the snorkel in my mouth.

Twenty-five feet away from me, inside the reef line, was my kayak. I decided to try body surfing to it. I had been caught in waves before and knew that, if you wear yourself out, it's much harder to hold your breath and stay calm. If this plan didn't work, I would swim out to sea and wait to be rescued. With the snorkel, I knew I could float for a long time.

The next wave nearly ripped the snorkel from my mouth, but I eventually was able to body surf to my kayak. Once I got to it, I held on tightly and slowly worked my way in toward the beach. Once I felt I was far enough away from the breakers, I jumped into the kayak and began to paddle. My paddle leash was tangled, forcing me to make short, shallow strokes, but I paddled quickly.

When well clear of danger, I paused to check my condition. Blood was mixed with the water in the bottom of my kayak from all the scrapes on my face,

# adly Waters

shoulder, leg, and foot, but my adrenaline still was pumping, so I didn't feel much pain. After getting to the beach, I parked my kayak and started cleaning my cuts and scrapes, which were beginning to hurt. I didn't care, though, because I just was happy to be alive and to have made it on my own, without having to wait to be rescued. I easily could have been the first member of my squadron to be rescued or to have become Guam's 19th water fatality of the year.

Sadly, that fatality occurred less than three weeks later. The waters claimed a boater when his craft capsized offshore. He was caught without a life preserver.

It's easy to become complacent when you're doing something you do all the time. I was lucky, but I also made some good decisions that increased my odds of survival. I had told a friend where I was going; I later found out that our SAR crew had gotten a call that day, probably from her. I had my mask and snorkel around my neck, which could have bought me time if I had had to go outside the reef. I didn't panic; instead, I stayed calm and conserved my energy by letting the waves help push me toward the beach.

I should have done some things differently. I shouldn't have gone out alone. I failed to recognize that conditions were significantly different from what I was used to. Because of the large northern swells, the rip current wasn't confined to the channel in the middle of the bay as it usually is. I knew the conditions were hazardous but still let myself get too close to the reef. I didn't have on a life jacket or helmet. Kayaking in waves or whitewater is a high-risk activity, but it's much safer with proper PPE.

What do I want you to take away from my experience? If you're doing any type of outdoor activity,

with even a slim chance of needing to be rescued (e.g., hiking, boating, biking, skiing, spelunking, diving, open-water swimming), make sure someone knows your planned schedule and route. Take along some sort of signaling device in case you do need to be rescued. Try not to go alone; having someone else with you can keep you out of a dangerous situation by providing a sanity check or going for help if you get hurt.

Take into account the forecast conditions. Whether it's the local tides and currents or a forecast snowstorm, being prepared will help your situational awareness and increase your chance of survival if something bad happens. If something looks a little dangerous, turn around.

Wear proper PPE. It may take a little effort, but you never know when the unexpected will happen, and when you need PPE, you will be glad you have it. If you're not wearing PPE, you'll wish you were, and it will be too late. A little planning will ensure you have a good time and stay safe while doing it. **S**

*The author was assigned to HC-5 when he wrote this story.*

## Resources:

- Ocean Kayak Safety, <http://www.kittyhawk.com/skilledadvice/kayaking/oksaftey.cfm>
- Sea Kayaking Safety, <http://www.mariner-kayaks.com/mkhtml/Kyksaftw.html>
- Paddle to a Stomp, <http://www.cable.navy.mil/Stories/Paddle%20to%20a%20Stomp.htm>



# WHEN TO SAY WHEN

By LCdr. Greg Coupe,  
U.S. Northern Command

I'm passionate about cycling; I ride as often as I can—with a group, a friend, or alone, in any kind of weather. I stay abreast of the latest and greatest bikes and equipment, as well as the latest news from the U.S. and European racing scenes. One of my goals in life is to make a pilgrimage to the Alps for a little race in France.

I've raced before. I was a decent category 3 and 4 racer, often finishing in the top five, but I had a

problem: I often didn't finish a race because I crashed. *[Racing categories start at category 5, the beginner level, and move up to 1, the highest level below pro. Those in categories 1 and 2 usually race with pros. Someone in category 3 is at the higher end of amateur competitive racing.—Ed.]*

Before ORM was institutionalized, I applied a kind of risk management to my riding. I wore a helmet, obeyed most traffic laws, and never fully trusted cyclists riding around me. In short, I was in

plain denial. “It won’t happen to me,” I thought. I relied heavily on my own defensive riding skills—not unlike those required while driving in Seattle traffic, where you have to watch out for the other guy.

Unfortunately, those precautions weren’t enough. Cars twice have hit me, and I’ve collided with an idiot kid on rollerblades. I’ve also blown a tire, misjudged speed on corners, and fell victim to chain-reaction crashes during races. I’ve suffered cuts, bruises, road rash, broken bones, and concussions. Did I mention I destroyed a couple of bikes in the process?

*I awoke several minutes later in excruciating pain, dazed and barely able to breathe, while three EMTs hovered over me.*

Crashing is an unwelcome part of cycling. Even the best racers in the world have their problems. When you fall off the horse, though, you hopefully learn and press on. That’s how I felt until I traveled to Idaho for a three-day stage race that was, at the time, one of the largest amateur races in the Northwest.

After the first three stages, I was in sixth place, facing the final day’s 60-mile race that suited my style: climbing hills. I was anticipating at least a top-three finish, which would give me some gas money and a medal to throw in a drawer. Those hopes, however, along with my racing days, ended in a 40-mph crash that left me in a heap—unconscious and bleeding—on a rural road.

I’m still not sure how the crash happened. All I remember is that something hit my front wheel, and down I went. I awoke several minutes later in excruciating pain, dazed and barely able to breathe, while three EMTs hovered over me. Forty-five minutes later, I was in a local emergency room being X-rayed, poked, drugged, and interrogated. In my hospital room—“home” for the next five days—I was in a morphine-induced slumber. I had a concussion, broken clavicle, two broken ribs, a collapsed lung, and numerous cuts and bruises.

When I returned home to Whidbey Island, I stayed off a bike as long as I could—perhaps two weeks. I wasn’t able to ride on the road yet, but I could ride on a stationary trainer. “If the pros can get back on the bike, so can I,” was my thought process.

Five weeks after my crash, I finally was on the road again, much to the chagrin of my flight surgeon,

my chain of command (who threatened career-ending fitness reports if I continued riding), and my no-longer-tolerant wife. Being stubborn and convinced the rules didn’t apply to me, I kept riding for a couple more days. Then, one evening, I watched a tape-delay broadcast of the Tour de France. An Italian rider had died after crashing on a descent through the Alps. He had hit a roadside barrier at 40 mph.

I now fully realized what could have happened to me. My wife, shaken to her core, made me promise never to race again. I agreed and grudgingly told my

chain of command I wouldn’t ride until the doctors gave me an OK.

What’s the point of this tale? Always wear a helmet while biking, skating, skateboarding, or even skiing. Helmets won’t prevent concussions—I’ve had three—but they will save you from serious injury or death, as they have me on at least three occasions.

Also, know your abilities and limitations. Apply the principles of risk management (identify the hazards, assess them, and take action to minimize them). In my case, I didn’t race again for five years, and then I raced only once. I continue riding as often as possible but with greater care, observation, awareness, and a much stronger sense of self-preservation. Perhaps I’m just getting older and more mature, but I like to hope I’ve finally learned from my past mistakes. ■

*The author was assigned to VAQ-134 when he wrote this story.*

#### Resources:

- Bicycle Helmet Standards, <http://www.helmets.org/standard.htm>
- Training for Cyclists, <http://www.sportsinjurybulletin.com/prewp/si-cyclinghome.html>
- Tips & Tricks for Your Bicycle..., <http://www.mybikeholiday.com/bikereparation, accessories, clothing.htm>

# BEST PRACTICES

## Reinventing the Safety Stand-Down

By Lt. Joe Stastny,  
USS *Kitty Hawk* (CV-63)

Shipboard safety stand-downs can get old if you don't try to reinvent them every time you have one. How many times have Sailors heard these worn-out messages: "Use your PPE... Don't drink and drive... One hand for the ship, one for yourself?" Many times, these tired messages are followed by the same old graphic demonstrations of what can happen when you drink and drive or fail to use PPE.

Our commanding officer wanted something new. He challenged the safety department to come up with an interactive stand-down that would involve every division on the ship, as well as the Air Wing Five team.

The safety department staff concluded that the stand-down would have to be broadcast over SITE-TV, because mustering everyone in the hangar is impractical while the ship is underway. We first considered a trivia-game format but quickly realized it wouldn't promote maximum participation because one person might answer all the questions. How could we make something interactive and entertaining and yet provide a precise safety message?

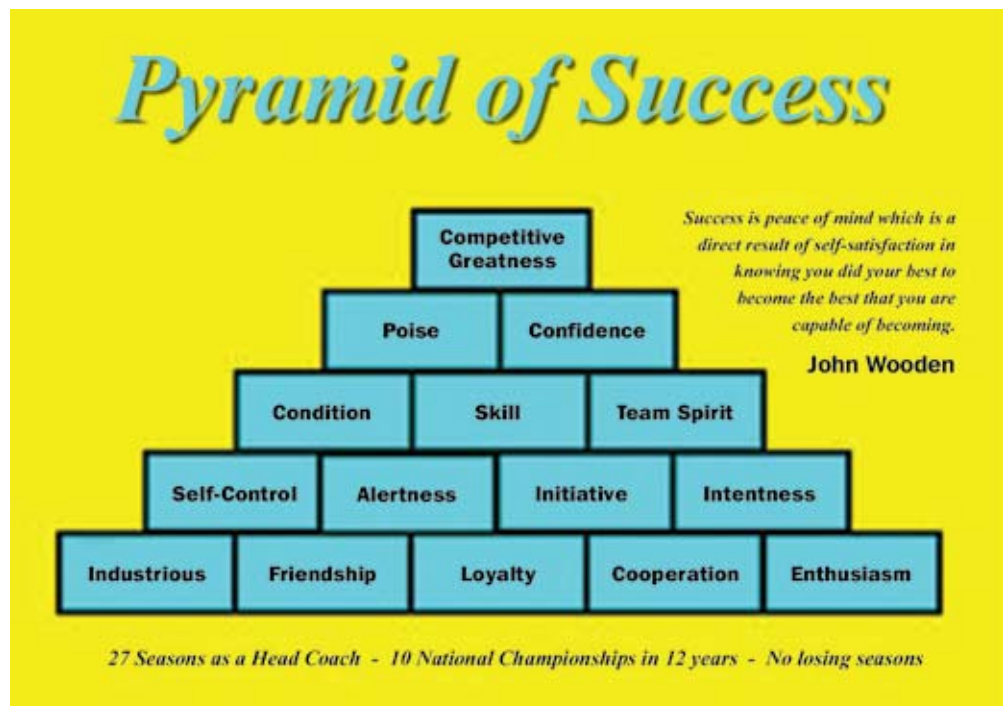
The answer was a "Safety Stand-Down Top 10 Game Show." For this

event, we came up with five safety-related topics:

- FOD prevention
- Heat-stress prevention
- PMV-crash causal factors
- Building a winning team
- Safety "dead horses" you hear so much you ignore.

ignore.

We followed with a list of what we felt were the 10 most frequent answers to these topics. The idea was to announce a topic, then give divisions 10 minutes to write down their own top 10 answers and submit them to us. Divisions would be awarded two points if they had our top answer as their top answer. For every



## Top 10 Safety Dead Horses That You Hear So Much You Ignore

### Safety Dept. Answers

- Alcohol Related Incidents
- Hatches/Ladders/Doors/Chains
- Situational Awareness
- Attention to Detail
- Secure for Sea
- Electrical Safety Checks
- ORM
- PPE
- FOD
- Forklifts

(5) DEAD HORSE

A1MD/IM-3

GAME CARD #5	
+ 1.	FOD ✓
+ 2.	ZE13 ✓
3.	LIBERTY PLANS x
4.	KEEP YOUR HEAD ON A SWIVEL ✓
+ 5.	ORM ✓
+ 6.	LADDER SAFETY ✓
7.	SPEED KILLS
8.	YOKE IS NO JOKE x
9.	STAY OUT OF PROP ARCS x
+ 10.	PPE ✓



answer that matched ours, regardless of the order, they got one point.

Once we had set the rules, we laid out the show. We set up three locations throughout the ship where divisions could turn in their answers. These three satellite stations would feed everything to SITE-TV, which would broadcast results round by round. Teams would watch until a winner was declared.

While divisions created their lists, we provided valuable information and entertainment associated with the John Wooden Pyramid of Success (a team-building paradigm). Humorous video clips enhanced the concepts of the Wooden Pyramid. When 10 minutes had elapsed, we revealed the answers. For the most part, answers were serious. One humorist suggested the following for preventing heat stress: “Hold swim call.”

The “Safety Stand-Down Top 10 Game Show” turned out to be a great success. We had outstanding participation across all divisions, with the end result producing an informal safety-climate survey and numerous accolades from all ranks. Personnel were honest in their answers, and they weren’t reluctant

to voice their opinion on safety issues.

The topic we had thought was somewhat light-hearted turned out to be the most interesting. “Safety ‘dead horses’ you hear so much you ignore” garnered some surprising responses. We found that hearing-conservation messages weren’t falling on deaf ears (drum roll, pun intended), and the tradi-

tional “one hand for the ship, one hand for yourself” was alive and well. The most tired phrases on the ship were these two from our previous deployment: “Keep your head on a swivel” and “I’ll see you on the deck.” Some results were surprising but demonstrated the safety message was sticking with *Kitty Hawk* and Air Wing Five personnel.

Naturally, we had to dangle a carrot to make our plan work. We rewarded the winning division with “first off the ship” privileges in an upcoming port. The second-place team, meanwhile, won free MWR bingo cards, and the third-place team earned a safety coin for everyone in the division—a prize that’s sure to go up in value as decommissioning looms on the horizon. ■

### Resources:

- Afloat Safety Stand-Down Guide, <http://safetycenter.navy.mil/afloat/surface/downloads/safetystanddown.doc>
- Stand-Down Ideas, <http://safetycenter.navy.mil/bestpractices/Tools/default.htm>

# Excavation and Trenching: The Foundation

By Stanley E. Willingham,  
Naval Safety Center

As the weather transitions from spring to summer to fall, outdoor conditions improve, thus allowing for increased construction activity (e.g., office buildings, homes, in-ground swimming pools, utilities, foundations, and recreational facilities). All of these projects require excavation and trenching operations at some point.

OSHA describes excavation and trenching as one of the most hazardous operations performed by construction workers. About 1 percent of all OSHA fatalities annually are the result of excavation-and-trenching mishaps. Statistics show most victims are men, in the 20-to-30-year-old age range, with little or no training. These fatalities and the annual 4,000 injuries suffered in excavation-and-trenching mishaps are costly in terms of OSHA-assessed fines/citations and related mishap costs.

OSHA defines excavation as any man-made cut, cavity, trench, or depression in the earth's surface formed by earth removal. A trench is defined as a narrow, underground excavation that is deeper than it is wide but no wider than 15 feet.

## The Associated Hazards

There are a number of hazards associated with excavation and trenching. They include such things as being hit by an object or vehicles/equipment, asphyxiation due to lack of oxygen in a confined space, inhaling toxic fumes, drowning, electrocution, explosions that may occur when underground utilities are con-



tacted, and falls. Eighty percent of the fatalities occur in trenches between 5 and 14 feet deep.

The greatest hazard and the most feared is a cave-in. As noted in a Morbidity and Mortality Weekly Report (MMWR), the Bureau of Labor Statistics documented that 75 percent (or 411) of the 542 excavation-and-trenching fatalities studied in the United States from 1991 to 2001 were the result of a cave-in.

The cause of death and injuries in cave-ins are primarily associated with suffocation, loss of circulation, and falling objects. A worker buried in only a few feet of soil experiences pressure on the chest area, preventing the lungs from expanding and contracting. Suffocation in these cases can occur in as little as three minutes. It would take longer than that to remove/rescue anyone buried up to their chest.



## The Work Site

Everyone should be aware that 1 cubic yard of soil weighs between 2,340 and 3,780 pounds, which is the equivalent weight of most personal vehicles. A collapsed trench wall of 3 to 5 cubic yards of soil weighs 8,000 to 14,000 pounds. The 4 October 2000 *Fort Worth (Texas) Star Telegram*, for example, carried the story of a 44-year-old man who was crushed to death in a collapsed trench in Lewisville, Texas. He was buried only to his waist, but his blood circulation was cut off by the earth's pressure on his lower body.

Because of such events, OSHA developed, in 1971, the first construction standard covering excavation-and-trenching operations. Over time, that standard has been worked and refined to what it is today: 29 CFR 1926, Subpart P – Excavations. Use of this standard and application of operational risk management (ORM), combined with proven best-safety practices, guarantee a successful excavation-and-trenching operation, provided no unforeseen circumstances interfere.

From here on, this article will focus on ensuring a worker's right to protection from danger.

The Bureau of Labor Statistics reports that new hires are the most prone to getting injured or killed in excavation mishaps. Their experience, in many instances, is minimal at best, which often leads to their not recognizing the scope or magnitude of hazards associated with the job. A trained and informed work force is a must.

Primary considerations for the work site should be soil type, surface encumbrances, underground utilities, adjacent structure stability, access/egress, and the daily inspections.

Before any digging begins, the soil requires classification, using the guidance in 29 CFR 1926, Subpart P, Appendix A. It will be categorized as stable rock, type A, B or C, in decreasing order of stability.

An encumbrance is anything that creates a hazardous surcharge load on the sides of an open trench or excavation, which could cause it to cave in. Examples include equipment/vehicles, spoil, pipes, sources of vibration, water tables, streams, and geological anomalies, among other items. Planning will contribute significantly to preventing cave-ins. Establishing a "limited zone" around the excavation site is a best practice. This zone will contain only essential equipment, personnel and materials. Zone size and area will be based upon the soil type and anticipated surcharge loads.

Contacting underground utilities can be disastrous. The safest way to locate all underground installations is by notifying the one-call system in the state in which the work is to be done. Ensure all documentation is maintained to show the one call was made in the required time. Every precaution must be taken to protect, support and remove underground utilities as necessary to safeguard employees.

Access and egress is one area workers can approach casually since they may not know or understand the complexity of the requirements. Per the access and egress standard, structural ramps that are used solely by employees as a means of entering or leaving excavations shall be designed by a competent person. Structural ramps used for access or egress of equipment shall be designed by a competent person qualified in structural design, and shall be constructed according to the design. Furthermore, the means of egress from trench excavations that are 4 feet or more in depth, so as to require employees no more than 25 feet of lateral travel, shall be a stairway, ladder, ramp, or other safe means.

**Unprotected excavation next to existing building led to bearing wall collapse.**



OSHA 29 CFR 1926.652, titled “requirements for protective systems,” states in part: “Each employee in an excavation shall be protected from cave-ins by an adequate protective system.” Trenches 5 feet or greater in depth require a protective system be in place to protect workers from cave-ins, unless the excavation is made entirely in stable rock.

OSHA has issued citations and charged thousands of dollars in fines to companies, contractors, and individuals for violating this standard in whole or in part. For example, as noted in the 7 October 1998 *The Atlanta Journal Constitution*, OSHA cited two construction firms and proposed fines totaling \$244,000 for safety violations in a trench cave-in that killed a 25-year-old worker. The employee was buried beneath tons of dirt made unstable by rain before the accident. OSHA’s investigation revealed neither company had taken proper precautions to prevent this July 29 cave-in of a 19-foot-deep trench at a subdivision. Both firms were cited for willful failure to provide workers a protection system. A piping subcontractor involved in the same operation faced penalties of \$84,000 for failure to train workers on the hazards of excavations and failure to provide a means of entering and leaving a trench (does access and egress come to mind here?).

Changing conditions such as rain very quickly can destabilize the walls of an open excavation. Proper training alerts workers to some signs of an imminent cave-in. In the foregoing instance, the worker had some warning; however, he apparently just didn’t have a means to escape, such as a ramp or ladder.

Part 652 provides guidance for the three types of protective systems (sloping and benching, shoring and shielding) used in excavations. All are designed to prevent cave-ins, are dependent on the soil type where the excavation is occurring, and should be overseen by a competent person. Also, the standard requires that any protective system used for a trench 20 feet or deeper be designed by a registered professional engineer or be based on tabulated data prepared and/or approved by a registered professional engineer.

The simplest manner of controlling cave-ins is by sloping and benching, which involves cutting back the trench wall at an angle, inclined away from the excavation. This design works by not letting the soil roll into the excavation. The degree of the sloping angle needed

depends on the stability of the soil at the site. In more stable soils, the slope can be relatively steeper and still be effective. Sloping must be greater if the areas near the excavation are subject to heavy loads (e.g., soil piles, vehicles).

Shoring systems are structures made of wood or metal members that press tightly against an excavation side wall to brace and support the sidewalls and thereby prevent cave-ins. Aluminum hydraulic shores consist of two vertical members that support opposite sides of a trench, with at least one connecting horizontal member containing hydraulic fluid that is pumped up to exert pressure on the vertical members. Timber shoring also is used; it achieves similar support but is constructed out of timbers at the excavation site, based on job-specific requirements.

Trench-shielding systems do not prevent cave-ins. Instead, they protect employees from cave-ins that might occur by providing sheltered space where employees may work. A typical shield consists of two steel plates separated by structural members to form a box open at the top, bottom, and both ends. The box is lowered into the trench so that the steel plates face the trench’s side walls. Employees then climb into the protected area defined by the steel plates. As work progresses, the box is dragged along the bottom of the trench by a chain or cable suspended from a backhoe above the ground.

Enough emphasis cannot be placed on performing the required inspections mandated by OSHA. A competent person daily must inspect excavations,



**Deeper excavations require engineered protective systems**





ing material safely supported?

- Have methods been taken to control the accumulation of water in excavations?
- Are employees protected from falling materials (loose rock or soil)?
- Are substantial stop logs or barricades installed where vehicles or equipment are used or allowed adjacent to an excavation?
- Have steps been taken to prevent the public, workers or equipment from falling into excavations?
- Are all wells, calyx holes, pits, shafts, etc. barricaded or covered?
- Are walkways with standard guard rails provided where employees

the adjacent areas, and protective systems to identify evidence of a situation that could result in a possible cave-in, a failure of protective systems, hazardous atmospheres, or other hazardous conditions. A competent person also will inspect before the start of work and as needed throughout the shift. Finally, inspections will be conducted after every rainstorm or other hazard-increasing occurrence. The Bureau of Labor Statistics has numerous accident files showing where a missed daily inspection, an inspection performed by a non-competent person, and other such factors contributed to excavation accidents.

All excavation operations must be performed by professional, competent, trained, and knowledgeable individuals. The dynamics of an excavation operation can change instantly, turning a well-intentioned digging operation into a grave.

### Sample Checklist for Excavation

- Have underground utilities and communication lines been located prior to excavation?
- Where there are known or suspected unexploded ordnance, have qualified explosive ordnance disposal (EOD) personnel cleared the areas?
- Has a competent person inspected the excavation as needed throughout the work shifts and after every rainstorm?
- Is shoring used in unstable soil or depths greater than 5 feet?
- Are excavations, the adjacent areas, and protective systems inspected and documented daily?
- Are excavations more than 5 feet in depth adequately protected by shoring, trench box, or sloping?
- When excavations are undercut, is the overhang-

or equipment are required or permitted to cross over excavations?

- Where employees are required to enter excavations over 4 feet, is access/egress provided every 25 feet laterally?
- Are at least two means of exit provided for personnel walking in excavations at least 25 feet long?
- For excavations less than 20 feet, is the maximum slope 1.5 to 1 vertical?
- Are support-systems designs drawn from manufacturers' tabulated data in accordance with all manufacturers' specifications?
- Are copies of the tabulated data maintained at the job site?
- Are members of support-systems security connected together?
- Are shields installed in a manner to restrict lateral or other hazardous movement in the event sudden lateral loads are applied? ■

#### Resources:

- Safety and Health Regulations for Construction (29 CFR 1926, Subpart P), [http://www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_table=STANDARDS&p\\_id=10930](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10930)
- Morbidity and Mortality Weekly Report, <http://www.cdc.gov/mmwr/>
- Trench Safety (Headlines of Recent Excavation Accidents), <http://www.trenchsafety.org/trench/sample/archives.html>
- Safety Pays, <http://www.labor.ok.gov/>
- Construction—Trenching and Excavation, <http://www.osha.gov/SLTC/constructiontrenching/index.html>

A photograph of two young boys jumping from the back of a boat into a lake. The boy in the foreground is wearing red shorts and has his arms raised. The boy behind him is wearing dark shorts. The background shows a clear blue sky, a forested hill, and a calm lake. The text 'Leaping Into the Critical Days of Summer' is overlaid on the right side of the image in a stylized, orange-outlined font.

Leaping  
Into  
the  
Critical  
Days  
of  
Summer

