

# SEA COMPASS

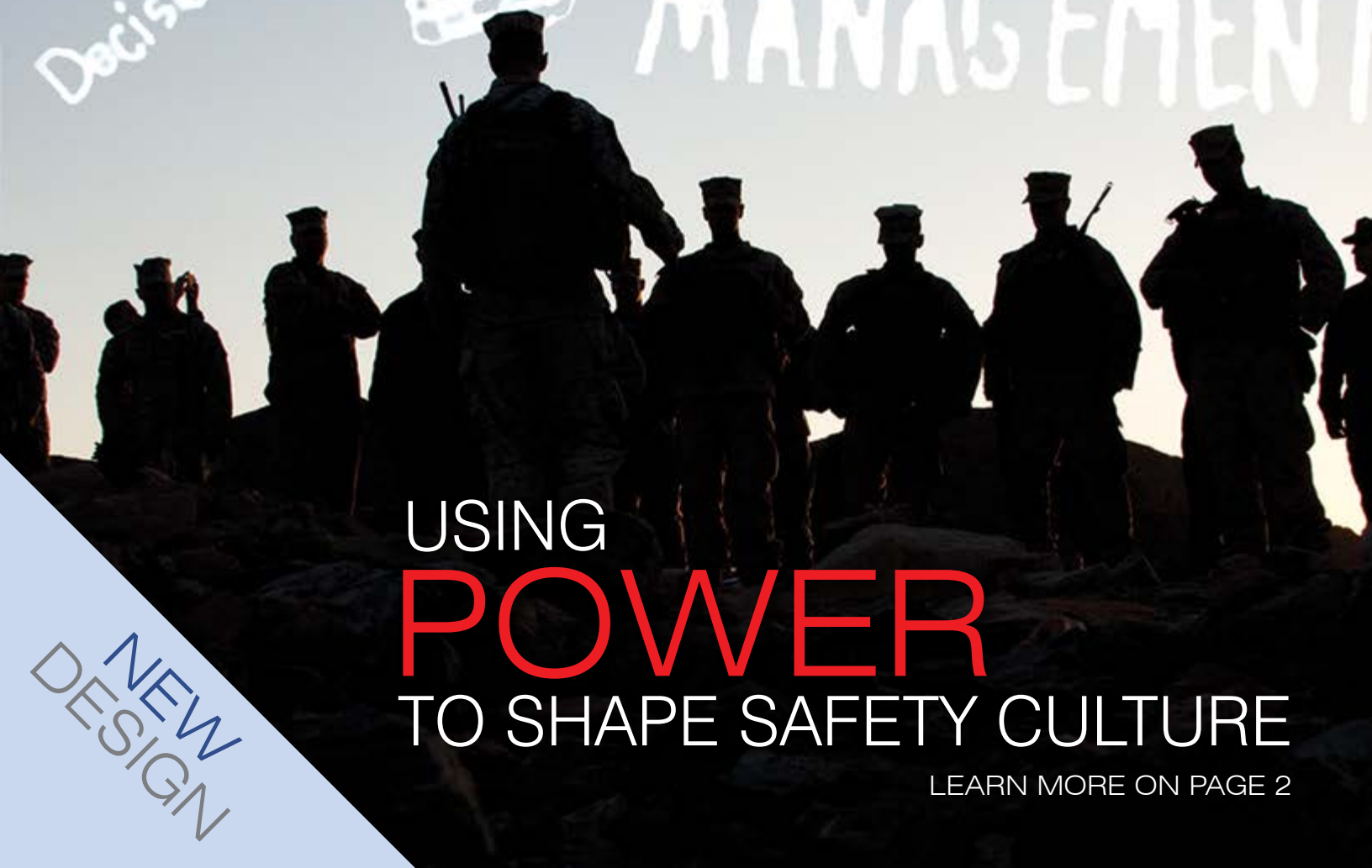
The Naval Safety Center Magazine for Surface, Submarine and Diving Operations

2016 Vol. 6, No. 1

ethics  
supports  
Decisions



LEADERSHIP  
MANAGEMENT



USING  
**POWER**  
TO SHAPE SAFETY CULTURE

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NEW  
DESIGN



# SEA COMPASS

2016

VOLUME 6 | No. 1

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## EDITOR'S note

**We** live and work within the confines of a malleable environment, where change is inevitable and a commonality for us all. With that said, I would like to introduce myself to the Sea Compass audience.

My name is Michael J. Morris and I have the privilege of being the new editor for *Sea Compass* and *Decisions* magazines. I am a 20-year veteran of the Department of Defense, serving with the U.S. Army for five years and as a civilian employee for the last 15 years. My experience has varied during that time, working for such agencies as the Joint Multinational Training Command, Naval Network Warfare Command, United States Africa Command, and Naval Information Forces. My path has now led me to the Naval Safety Center, where I've been given the task of reimagining the publications in my charge.

With that said, you'll notice that this issue of *Sea Compass* has a new streamlined uniform look to it. My goal is to create a modern product with a layout that the reader enjoys. These changes are all about the reader and are an attempt to create a more effective means of conveying the information found within *Sea Compass* in an effort to enhance the reading experience for our audience.

This issue of *Sea Compass* revolves around safety culture and risk management. Our cover story, "Using Power to Shape Safety Culture" written by FLTCM Paul Kingsbury, reviews the eight power bases safety leaders can draw from to help shape safety culture. Other stories within this issue highlight safety program development, unforeseen risks, and safety hazard trends. It is my hope that you enjoy this issue and offer feedback to improve future issues.

*Sea Compass* magazine is in the process of evolving and can only do so with input from its readers. Please email us with comments or recommendations of what you like or dislike about the new format, or tell us what you would like to see in future issues. Send your comments and recommendations to [safe-seacompass@navy.mil](mailto:safe-seacompass@navy.mil).

*Michael J. Morris*  
Editor *Sea Compass Magazine*



**ON THE COVER:** The cover is a photo-illustration representing leadership, which is the ability to influence others to do what you want or need them to do. In order to influence people you must understand and learn the effective use of power. As safety leaders, you should strive to improve familiarity with and develop the effective use of power and influence tactics.

(Photo Illustration by Michael J. Morris)



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# USING **POWER** TO SHAPE SAFETY CULTURE



*FLTCM Paul Kingsbury*

## With

the release of the fleet safety campaign, senior Navy leadership has recommitted to improving risk management efforts to “move our command culture to being more proactive and predictive within the realm of operational and occupational safety.”

This leadership focus has been the catalyst for a variety of recent changes in safety policy and promotion, but there is plenty that safety leaders at all levels of the chain of command can do to help shape their safety culture.

Too often, we associate safety with discussions of statistics, risk matrices, and personal protective equipment (PPE) while failing to think about how to use power bases and influence tactics toward improving safety culture. Leadership is the ability to influence others to do what you want or need them to do, and in order to influence people you must understand and learn to effectively use power. As safety leaders, we should care about improving our familiarity with the development and use of power and influence tactics. Developing a firm understanding of power will improve you and your command's ability to achieve safety objectives that may include developing commitment to safety goals, ensuring compliance with safety standards or overcoming resistance while implementing safety culture change. Unfortunately, it appears that many naval leaders are unfamiliar with the power and influence theory and cannot effectively reflect on how well they use power bases and influence tactics. Perhaps our advancement and success in the organization reaffirms that we know how to effectively leverage power bases, but not using them to their full potential. Many of our leadership development courses do not provide a practical education of power and influence applications. Therefore, as you work to develop your competencies as a safety leader you'll find it useful to learn how to utilize them to influence safety culture and outcomes.

## **There are eight power bases safety leaders can draw from to influence behavior:**

### **1. Legitimate/Positional Power.**

This is the power that leaders possess due to their position within the organization. Increased positional power is given when you have successfully wielded the power afforded to you in your current position. This rewarding of increased legitimate power increases your influence scope and potential within the organization. As a safety leader your role provides you more access to senior leaders who can influence safety culture and it is your responsibility to guide, educate, train, and motivate in ways that you didn't do before. Take advantage of the opportunities to influence that your position provides!

### **2. Expert Power.**

Expert power is defined by your level of experience in something, in the realm of safety it's often captured as safety competence. You've attended some initial training as a safety leader so your command expects that you have some level of competence in safety programs and policies. You should be increasing your safety competence due to exposure to administrative processes, from practical experience applying safety policies and by reading literature on safety initiatives and best practices. You also have valuable life experience that contributes to your expert power base and can help you influence behavior at your command. Expert power is the responsibility of the person who is expected to possess it. When you fail to engage in continual learning, your expert power base erodes and your reputation and effectiveness as a competent safety leader can decline.

### **3. Personal/Referent Power.**

Personal power is a reflection of the personal traits you possess such as charisma, integrity, attitude, personality, core values, and beliefs that make people want to follow you. One could say that personal power is a reflection of one's character. Role modeling the behaviors you want emulated is an effective technique to capitalize on for those leaders who are well liked and have high referent power. Personal power is one of your two strongest power bases and you should spend a considerable amount of time reflecting on and developing this power base. To put personal power into context, I think it's useful to think about those leaders who left the biggest positive and negative impressions on you and why. Typical responses that describe leaders who were high in personal power include; "They had integrity," "They did what they said they were going to," "They're reliable," "They genuinely cared about my progress," "Honest and forthright." On the other hand, responses that indicate leaders with a low personal power base include; "They were never around," "They were a walking double standard," "Unapproachable and not trustworthy." The best way to determine your personal power is to get candid feedback from the people who work for and with you by using tools such as 360-degree feedback.



#### **4. Information Power.**

This power base is derived from your access to information that others need to do their jobs or fulfill a personal desire. Safety leaders have access to reporting systems such as the Web Enabled Safety System (WESS), the Joint Lessons Learned Information System (JLLIS), and the Navy Lessons Learned Information System (NLLIS) and other information sources such as the Naval Safety Center website that can help you manage or evaluate the health of your command's safety culture and risk management efforts. Although this power base used to rest extensively with those in leadership positions, the advent of social media and information technology has empowered all levels of the organization with information power. Strong leaders socialize those resources within their commands to help raise general knowledge regarding safety management.

#### **5. Connection Power.**

Connection power is the power you have through personal networks that in turn expand your expert and information power bases. Connection power may increase other power bases as well. You may have personal connections that provide resources and opportunities to increase your reward power or through great connection power you can increase personal power due to the positive relationships you develop with people. Make it a point to socialize with other safety leaders including safety officers and managers, and professional organizations that can increase your connection power base. You should also look for opportunities to attend appropriate safety seminars and symposiums.

#### **6. Reward Power.**

This is your authority to reward appropriate behaviors and achievements that deserve them. Reward power can be used as an incentive to help or reinforce positive safety behaviors. Commanding officers can offer rewards to incentivize mishap and near-miss reporting or for the demonstration of safety behaviors consistent with those you want in your organization. Commands can take time to recognize a Sailor who intervened to prevent a mishap at command quarters or award the safety petty officer who submitted the largest number of relevant hazard reports (HAZREPS). With all that said, caution should be taken when rewarding safety behavior. There are many examples of how safety-related awards related to reducing mishaps actually drive reporting behaviors down.

#### **7. Ecological Power.**

This is the power you have to shape the environment in order to help achieve safety objectives. I think this is the one that most people associate with safety and which tends to give safety a bad reputation. Think of safety signs, markings, chains, guardrails, or PPE, these are all examples of using ecological power toward mishap prevention. Policies that influence ship's cleanliness, working hours and culture are other ways your command can leverage ecological power.


#### **8. Coercive Power.**

Coercive power is listed last because it's the last power base to be used for shaping safety behavior. Coercive power is the leveraging of threats to get people to do what you want them to do. Incorrect use of coercive power can drive reporting behaviors underground, especially when a just culture is lacking. Use coercive power only for the most egregious and deliberate safety violations that are counter to your safety culture and expectations.


# POWER BASES

# **Knowing your power bases is one thing, Understanding the effective use of them is another.**


**Before you can begin to effectively leverage your power bases and influence tactics, you should understand some relationship fundamentals related to power and influence:**

- 
- 1. Each power interaction has an agent and target.**
  - 2. Your targets can be an individual or a group.**
  - 3. You must know your target, objective and timelines.**
  - 4. You should consider potential obstacles to your power/influence application.**
  - 5. You should understand that using power and influence results in dynamic interactions.**

Additionally, safety leaders should be mindful how lower level safety leaders use power and influence. For example, division safety petty officers and work center supervisors should be observing and training subordinates while advising their division leadership on weaknesses and strengths of divisional safety culture. I recommend you take time with new safety leaders to discuss:

- 
- How their power bases will change (expand or decline) in their new role as safety leaders?**
  - What new influence tactics do they need to learn for this position?**
  - Who are their targets? Objectives? Timelines?**
  - What new opportunities will they have to influence outcomes?**
  - Will there be new barriers to their use of power and influence?**

The best leaders use all their power bases and apply them as each situation demands. There are no mass-produced leaders, because everyone is different. Personalities, personal backgrounds and your leadership “audience” affect your power bases. Learn to recognize your weak and strong power bases and strive to improve them. Each of us has a responsibility to reflect on our

power bases, how we use them, and the impact we have on our people and organizations. Once you have a sound inventory of your power bases, you will be armed to execute the variety of influence tactics available. You’ll understand when a rational persuasion approach is more appropriate and effective than the use of a pressure tactic. There are many books and articles that discuss the various aspects of power and most college leadership/management courses cover power theory and its application. By investing the time to learn, you’ll find that your ability to develop commitment, ensure compliance, or overcome resistance to organizational goals will be enhanced and your ability to positively influence your people will improve. 

**“Safety leaders should be mindful how lower level safety leaders use power and influence.”**

# SUCCESSFUL SAFETY



# ESSENTIAL

**A**s my second sea tour comes to a close, I can't help but reflect upon the two ship safety programs I helped develop and manage over the years. It began on my first ship, USS John Paul Jones (DDG 53), when I was assigned to be the assistant safety officer. It continued into my second tour as well aboard USS Germantown (LSD 42) when I was given the same duty due to my previous safety experience. After working in afloat safety for over four years, I have done everything one would expect of such a position. I built a safety program from scratch, prepared for industrial hygiene (IH) surveys, safety assessments, Board of Inspection and Surveys (INSURV), and submitted more Web Enabled Safety System (WESS) reports than I can count.



*LT Jesse J. Rond*



# PROGRAM



U.S. Navy Photo

**I can still remember when my operations officer ... assigned me to the collateral duty of assistant safety officer.**

I can still remember when my operations officer (OPS) on my first ship assigned me to the collateral duty of assistant safety officer. It went something like this:

**OPS:** *"Rond, congratulations. You are now the assistant safety officer."*

**Rond:** *"OPS, I can't. I don't know anything about safety."*

**OPS:** *"You will figure it out."*

**Rond:** *"Okay, what do I need to do?"*

**OPS:** *"You will figure it out."*

**Rond:** *"Well, does the ship have any safety binders I can look at?"*

**OPS:** *"See, I knew you would figure it out! You've been the assistant safety officer for 10 seconds and you figured out your first project. Go put together some safety binders."*

**Rond:** *"Well what goes in the binders?"*

**OPS:** *"You will figure it out."*

If you are like most division officers, or even some department heads, safety is being assigned to you as a collateral duty. You have little to no training, you may be starting with a broken or non-existent program, and the only guidance you have is to fix it before INSURV. If this sounds like your situation, then I hope this article helps. I wanted to reflect back on my own lessons learned, my struggles in learning what to do, and give some simple guidance to the bewildered assistant safety officers in our fleet.

## STEP ONE

### Conduct Program Assessments

**OPNAVINST 5100.19E, section A0303 reads:**

*Self-assessments of all safety programs applicable to the afloat unit will be conducted at least annually as part of the annual workplace safety inspection. These may be conducted as a single project or staggered throughout the year. Copies of self-assessment results, hard copy or electric, will be retained by the safety officer for at least two years.*

Take a look at the Naval Safety Center website via <http://www.public.navy.mil/navsafecen/Pages/Afloat/surface/Checklists.aspx> and find all of the INSURV and safety survey checklists that apply to your ship. Download them, figure out who is responsible for each checklist and inform them you will be assessing their program soon. Create a timeline for yourself and supply it to the program leads so they know when their program will be reviewed. As is stated above, you can do them all at once or stagger them out over time. It doesn't matter as long as each program is assessed annually.

A few things will naturally start to happen as you conduct these assessments. First, you will begin to learn a lot. When you are new to anything, the best thing to do is simply learn. Believe me when I say that doing safety program assessments is the most efficient way to learn safety. You will come to understand each individual program that falls under your jurisdiction, the regulations that govern each program and how each program manager organizes his/her program. You will start to develop the big picture of safety on your ship by learning each individual component first.

Each individual program manager will be more inclined to fix the discrepancies that fall under their responsibility. Many safety programs fall apart simply because no one regularly inspects the program. The managers begin to think, and rightfully so, that their program must be irrelevant if no one ever bothers to take a look at it. However, if the program is regularly assessed, their hard work gets the proper recognition it deserves.

## STEP TWO

### Discuss Assessment Results at Safety Meetings

**OPNAVINST 5100.19E, section A0303 continues:**

*The safety officer will advise the safety council and safety committee, as applicable, of the results of these self-assessments and status of corrective actions.*

**In addition, section A0203h reads:**

*The safety council shall meet at least quarterly and develop agendas and action items based on the afloat unit's scope of operations and hazard or mishap experiences... Specifically, the safety council shall establish program improvement plans based on mishap experience, program deficiencies, and other information.*

There are various topics you are required to cover at your council meetings. However, of all the topics, I have found the most valuable to be the results of your assessments. This is because it gives your chain of command a very quick picture of how safety is doing on the ship and what corrective actions need to take place. You can cover the programs you have assessed and recognize the ones that are doing exceptionally well. You can discuss serious discrepancies you've found that pose safety hazards, areas that may need a little more focus, and your recommended solutions.

Many of the department heads present at the meeting have safety programs that fall under their cognizance. Considering the huge workload of every department head, they often lack the time to personally assess the status of their safety programs. If you help them out by doing the leg work in identifying the problem, they can easily apply the appropriate pressure from their level to ensure their programs get back up to speed. You will notice a vast improvement in efficiency once you begin to get this department head support.

I recommend you encourage the program lead to attend the council meeting when their program is being discussed. If a program is doing well, recognize that program lead in front of the captain

and department heads. If programs are struggling, use tact in identifying the problems and discussing solutions. This will show all managers that their programs do matter and if they fix discrepancies, their hard work will be recognized by the entire chain of command.

## STEP THREE

### Track Discrepancies

**OPNAVINST 5100.19E, section A0404d reads:**

*The safety officer shall retain or maintain documentation of those hazards identified through inspections, surveys, or as reported by individuals. A log, notebook, electronic spreadsheet, or other means may be used as documentation of hazards awaiting correction or resolution.*


Make an Excel file to track all the safety discrepancies on your ship. At the very least, your tracker should have all discrepancies found during the assessments. However, why stop there? Use it to track issues found during zone inspections, division in the spotlight, and safety-related organizational maintenance management system jobs. Have columns that show when the problem was identified, what the discrepancy is, who is responsible for fixing it, recommended solutions, and when it was corrected.

Make this excel file accessible to your program managers and divisional safety petty officers (DSPOs). This will give them clear guidance on what they should be working on. Add discrepancies you find while walking the ship and tell the DSPOs it is their responsibility to regularly check the tracker. Let division officers know they can use the tracker to keep tabs on the work their DSPO is doing. They can even use information in the tracker when writing evaluations. Discuss the tracker at safety committee and council meetings. Recognize the proactive DSPOs so that they know their hard work is being noticed.

This tracker can be tedious work, but it pays great dividends in management and correction of discrepancies. I highly recommend assigning upkeep of the tracker to one of your DSPOs. At

your next safety committee meeting, ask for a volunteer who is looking to help out more with ship safety. I think you will find some very enthusiastic personnel who are eager to do more if simply told what you need them to do.

In my opinion, these are the three essential first steps to developing a highly efficient ship safety program. You may be thinking that only three steps in managing something as complex as safety is a bit simplistic. I agree, but keep in mind there will be more steps you learn along the way. This is merely where I would start if I had to do it all again.

My goal as the prior assistant safety officer aboard USS John Paul Jones and USS Germantown is to help the bewildered assistant safety officer, or possibly even safety officer, get off on the right foot. Whether you already have a functioning program or you inherited a non-existent program as I did, these three steps will guide you in the right direction. Always remember that your hard work is essential in keeping your Sailors safe and I wish you all the as you develop your own program. 



U.S. Navy Photo

Sailors of USS GERMANTOWN (LSD 42) stand at the rails with their PPE, ready to conduct a line handling evolution and enter their home port in Sasebo, Japan.



# SHIPBOARD A F E T Y Hazard Trends



NAVSAFECEN Photo

**The** 13 subject matter experts of the Naval Safety Center's Surface Ship Division bring over 285 years of fleet experience to two primary roles in support of safety in the fleet. The first role is the one we are best known for, conducting afloat operational safety assessments on the deckplate. We are the only organization that sends a single team to assess every surface ship in the Navy, whether they are a part of the surface, submarine or aviation domains, which gives us a very unique perspective on the fleet. We travel to every homeport in the Navy to conduct both inport and underway assessments on ships, where we provide them with an "outside set of eyes" on safety issues. We not only assess compliance with safety instructions and other directives, but we pass along lessons learned on previously identified safety hazards while simultaneously trying to identify new ones.



CDR J. Lee Bennett

The second role of our personnel is to be safety analysts. When we are home from our travels in Norfolk, Va., we gather data from the Navy's Web Enabled Safety System (WESS) to identify additional hazards that we may not have noted on the deckplates. Every ship is required to submit a WESS report on any mishap that happens onboard the ship or to assigned personnel. In addition, ships are encouraged to submit WESS reports of hazards they identify in the fleet that could have led to a mishap. We sort through the thousands of reports that we receive annually to identify common root causes that we can address with the designers to get the system changed or procedures updated, or with the fleet to get the hazards addressed on the deckplates.

Over the past year, our team has identified numerous hazards and deficiencies which we are working to resolve in the fleet. We need your help in resolving four of the major hazards that we are repeatedly seeing both in WESS and during our assessments before more Sailors get hurt.



<http://www.public.navy.mil/navsafecen/pages/wess/wess.aspx>

**Here are four critical hazards, along with an explanation of the requirements and applicable references for you to help us address them on the deckplates:**

## Electrical equipment improperly grounded on non-structural bulkheads

All fixed electrical equipment needs to be grounded to the ship's hull. Electricity likes to take the lowest resistance path to ground — or in the case of a ship, the ocean. If a piece of electrical equipment should suffer a short circuit then the electricity inside of it is now trying to find the “easy path” to complete a circuit to ground. Should the short circuit allow electricity to reach the surface of the equipment, then anyone who touches that equipment will very likely become that “easy path” to ground. We have seen a number of cases where equipment mounted to non-structural bulkheads is not properly grounded.

### First, what is a non-structural bulkhead?

*It's a bulkhead that is non-load bearing, and used solely to make a separation within a compartment. It is not grounded to the ship's hull.*

### Second, what is equipment grounding?

*Equipment grounding intentionally connects the non-current-carrying conductive parts of electrical equipment, such as the enclosure, frame, or chassis, to ground (the ocean via the ship's hull) through a low-resistance path.*

### Third, why is it needed?

*If an energized electrical conductor comes in contact with the enclosure due to a fault or mechanical damage, the equipment ground provides the lowest impedance path of electrical current to ground, and so it shunts the current away from a possible human contact/shock.*

The references requiring electrical equipment on non-structural bulkheads to be grounded to the ships are the MIL-STD-1310(H) and the MRC 3000/001 A-5, which are discussed below.

**MIL-STD-1310(H) 5.1.2.2.5 states:**

*All electrical equipment mounted on a joiner/false/honeycomb bulkhead must have a separate green ground wire, or conductor identified with a wire label/tag as the ground wire, which connects to ship's ground plane. The current carrying capacity of the ground wire/conductor shall be equal or greater than the source conductor.*

**Measurement of equipment grounding circuit resistance on non-structural bulkheads is done IAW MRC 3000/001 A-5.**

1. *Measure the voltage between exposed metal surfaces of equipment case and ship's electrical ground; reading should be zero volts. If voltage is detected, de-energize the equipment and notify your work center supervisor. The equipment should be tagged "out of commission" in accordance with the shipboard tag out instruction until repaired.*
2. *Measure resistance between exposed metal surfaces of the equipment case to ship's electrical ground; resistance should be less than 1.0 ohm. If resistance is 1.0 ohm or more than de-energize the equipment and notify your work center supervisor. The equipment should be tagged "out of commission" in accordance with the tag out instruction until repaired.*

## Oil/Hazmat Spill Abatement

Over 50 percent of ships assessed last year either had incomplete oil spill kits, were not current with the new AEL 2-550024006 updated (October 2013), were not maintaining the shipboard

spill contingency plan, or were not conducting or documenting training and PQS properly. In many cases there was confusion as to who was responsible for maintaining the oil spill response kit and hazardous material spill response kit since they are two separate and distinct kits.

In accordance with OPNAVINST 5100.19E, under the damage control assistant responsibilities: DCA shall maintain both the hazardous material spill response kit and the oil spill response kit. The DCA should inspect OHS spill kits monthly, and replenish material as required. Other DCA responsibilities are: to develop and implement a spill contingency plan (SCP) using the Navy's shipboard oil and hazardous substance (OHS) spill contingency plan guide; to train and supervise ship's damage control teams (and fire department, if used aboard) in combating spills of HM and oil; to provide training to divisions regarding reporting, initial handling, and cleanup of HM and oil spills; to ensure that HM and oil spills are handled per appendices B3-A and B3-B of the OPNAVINST 5100.19E; and to maintain an OTTO fuel spill kit (AEL A006350027) to respond to OTTO Fuel Spills.

**Over 50 percent of ships assessed last year either had incomplete Oil Spill Kits, were not current with the new AEL 2-550024006...**

Chapter 35-38 of the OPNAV M-5090.1 is the reference for the requirement that each surface ship shall maintain a minimum of one oil spill response kit, (AEL 2-550024006) for onboard and overboard oil and hazardous substance (OHS) spill response. OPNAVINST 5100.19E is the reference for the requirement that every ship also maintain a minimum of one hazardous material spill response kit (AEL 2-550024007 for surface ships, 2-50024008 for small craft, or 2-50024009 for mine countermeasures vessels) discussed in for hazardous substance (HS) spills that occur onboard the ship. In addition, the OPNAVINST 5100.19E requires the cognizant shore activity commanding officer, shore Navy Operational Support Center (NOSC), or fleet NOSC to provide appropriate assistance and direct response efforts if the response to a Navy ship spill is considered beyond the ship's limited capability.



The OPNAVINST 5100.19E requires that Navy and MSC surface ships develop and implement a spill contingency plan (SCP) for responding to spills of hazardous material. In addition, the OPNAVINST 5100.19E also requires Navy and MSC ships to develop a shipboard oil spill contingency plan (SOSCP) for responding to oil spills. Naval Sea Systems Command (NAVSEA) will provide a sample of a SOSCP format upon request. Ships may consolidate the SOSCP with the hazardous material SCP, but this combined plan shall address the unique procedures for spills over the side and use of the oil spill response kit. The plan(s) shall contain procedures for reporting, containment, control, recovery, and disposal of spilled material, protective clothing, and spill clean-up materials; information sources for oil and HM; and names and telephone numbers of fleet as well as shore side NOSCs.

#### **Guidance on maintaining the programs:**

**Drills:** *Ships shall conduct training initially at indoctrination and annually thereafter, and document at least one OHS spill response drill for each duty section annually. These drills shall include deployment of the oil spill response kit or hazardous material spill response kit and exercising notification practices, including simulated telephone calls and the drafting of “do not release” messages to higher authority. Ships may take credit for responding to actual spills, when such spills meet drill objectives.*

**Training:** *The ship shall train all in-port watch standers and command duty officers on in-port OHS spill response procedures, the ship’s SCP, and local notification requirements prior to assignment. One petty officer in each in-port fire party and each repair party shall qualify on watch station 304, oil/hazardous material (substance) spill response scene leader, in the Hazardous Material/Environmental Protection Programs Afloat PQS, NAVEDTRA 43528-A, within six months of PQS assignment.*

## **Life-lines and Guard-lines**

The number one safety discrepancy for deck departments during safety assessment by the Naval Safety Center is the life line/guard line systems on board the ship. The Kevlar life lines (synthetic/chain life-lines and guard-lines) are one of the single most important and overlooked safety devices on board the ship.

The openings in steel life rails can be either closed with synthetic line, or close-linked steel chain as directed by the ship’s drawings. In general, chain will last longer, but can pose a significant electromagnetic interference (EMI) hazard topside. Chain shall not be used on weather deck areas subject to EMI or intermodulation interference (IMI) requirements.

For access and hatch guard openings within the ship, 1/4 inch close-linked steel chain is used.

In the access ways for jet engines, in areas exposed to gun or missile blast, and in high heat areas then 7/16 inch CRES wire with CRES end-fittings is used for lifelines or hatch guard openings.

Synthetic lines are required to be made of 5/8 inch line with a 5/16 inch anchor shackle and a 4 5/8 inch snap hook with a weight test of 5,000 pounds. The length of the line should be no greater than six feet, with no more than 3/4 inch slack per linear foot. This will allow the proper catenary for ease of removing the snap hook when required. Either 5/8 inch diameter polyester line (per MILSPEC MIL-G-30500) or 3-strand nylon line (per MILSPEC MIL-R-17343) shall be used.

Access, guard-line, or hatch guard assemblies and other fastening applications requiring easy attachment and detachment shall be made up with 5/16 inch anchor shackle, screw pin, type 4, class 1, in accordance with Fed. Spec. RR-C-271 at one end and a 4 inch galvanized steel snap hook with safety guard at the other end. The snap hook shall have a 5/8 inch diameter eye, a 3/4 inch throat opening, and shall withstand a proof-load of 5,000 pounds.

Access guards of chain shall incorporate a 3/8 inch connecting link, type II, grade C, on each end and a 1/4 inch galvanized steel chain type I, grade C, conforming to Fed. Spec. RR-C-271 in addition

to the above. Access guards of synthetic or wire line shall use a terminating eye piece at each end in addition to the above, with a 3/8 inch anchor shackle, screw pin.

These assemblies shall be made up so that when installed in the opening, the sag at any mid-span of line or chain is not greater than 3/4 inch per foot of span between the supporting stanchions or structure. When employing synthetic line, the length of line necessary to achieve minimum sag shall be measured only after the line has been subjected to a minimum of six initial pulls of not less than 30 percent of the rated breaking strength of the line in order to assure that the “construction stretch” is imparted prior to fitting the line. Maximum length of openings protected by line or chain shall not exceed 72 inches.

## **The number one safety discrepancy for deck departments during safety assessment by the Naval Safety Center is the life line/guard line systems onboard the ship.**

Why are these requirements so important? If the guard line is not maintained IAW PMS, NSTM 600 and GSO 612, one of our Sailors, or even you, could possibly become a “man overboard.” If these guard lines (chain or synthetic) are around hatches and ladders have the wrong fittings, have fittings that are excessively corroded, or not installed at all, a Sailor can easily be hurt. A best practice is to walk your ship daily and verify all life lines and guard lines are IAW all instructions and that the maintenance is being done properly.



As you are constructing the synthetic life lines and guard lines always refer back to the NSTM 600 v3 and GSO612D for proper construction pull. Do not rely on tribal knowledge and the infamous phrase “this is how we always do it.” These are both the foundation for setting yourself up for failure and teaching our new Sailors bad habits. The right process might take a little longer, but will prevent injury or possible rework in the future. The long lasting benefits to you and your shipmates will always outweigh any possible short cuts!

## **Clearing Barrel Procedures**

The number one weapon’s department safety discrepancy identified during AOSAs is improper clearing barrel procedures. This procedure should be utilized several times a day, and is basis for establishing a safe weapon condition.

NTRP 3-07.2.2 is the governing reference for clearing barrel procedures. The procedures it contains should be printed out posted at the clearing barrel. We have noted commands that are using local procedures, and not the procedures of the NTRP 3-07.2.2. No other procedures are authorized.

### **NTRP 3-07.2.2 states:**

*At every duty station, written clearing barrel procedures shall be posted near the clearing barrel. The clearing barrel supervisor shall read each command slowly and clearly while closely monitoring the process.*

The NTRP also states in paragraph 1.3 — which most Sailors have overlooked — that “Watch standers shall repeat all commands from the supervisor during clearing procedures.”



Naval Safety Center assessors inspect electrical equipment (left) and an oil spill kit. (NAVSAFECEN Photos)

**An example of how this should be performed with an M9 is:**

1. *Clearing barrel supervisor, reading aloud from the posted procedure: "With trigger finger along receiver, insert the weapon into the clearing barrel."*
2. *Watch stander, repeating aloud: "With trigger finger along receiver, insert the weapon into the clearing barrel."*
3. *Clearing barrel supervisor, reading aloud: "Correct. Proceed."*
4. *The watch stander performs the action that was instructed. The clearing barrel supervisor should visually confirm that the watch stander performed the correct actions.*
5. *The clearing barrel supervisor should continue with the next step, reading it aloud from the posted procedure in the same manner as above.*


We have received numerous MISHAP reports regarding negligent discharges. The following is an example of how a negligent discharge happened and how many steps that could have stopped it was not followed and allowed it to happen.

"A Sailor reported to the Armory at 0730 to be armed up for a watch that required both an M16 and an M9. The clearing barrel supervisor handed the Sailor, a SRF-A graduate, a magazine and told him to put his M16 into condition 3. The Sailor, failing to notice that the M16 bolt was locked to the rear (it should have been forward), went ahead and inserted

the magazine. While walking out to assume his post, he stated that he heard the rifle make a noise but did not see anything wrong with the rifle. We can only assume that it was the bolt being released and now chambering a round. Once he was in position which he admitted was one leg against the wall while leaning back, he started to doze off which caused him to jump; since his finger was on the trigger, a round was discharged."

In this mishap, there were multiple failures at several different points in the procedure that should have been observed and addressed.

**The causes for this mishap:**

1. *Clearing barrel supervisor did not mandate use of the NTRP procedures.*
2. *The watch stander did not understand weapon conditions, and failed to release the bolt forward prior to inserting a loaded magazine. Instead of putting the weapon into condition 3 as ordered, he now had a condition 1 weapon.*
3. *The watch stander did not stand a proper watch, staying in one place and not roving as required.*
4. *The watch stander having his finger on the trigger. (Placing a finger on the trigger should be the last step before squeezing the trigger to discharge the weapon. Never rest your trigger finger on the trigger.)*
5. *The watch stander failed to investigate or ask for assistance when the M16 made "a sound."* 



Naval Safety Center staff assess clearing barrel procedures (left) and life-line/guard-line systems. (NAVSAFECEN Photos)



# HIDDEN DANGER



STOPPING A MISHAP BEFORE IT HAPPENS

**A**t the start of every ship's major maintenance availability comes the requisite safety standdown. Each safety standdown habitually covers a predetermined list of topics such as electrical safety, personal protective equipment (PPE), heat stress or general safety on barge life. While these subjects are important, safety personnel should be always cognizant that covering predetermined safety topics does not guarantee the crew's complete safety. Many dangers do not cleanly fit within a predetermined category but can still cause a threat to Sailors' lives. It is often these hidden dangers that can cause the most harm because they are never considered. Therefore, it is important for safety personnel to think outside the box in unearthing and dealing with these hidden hazards.



ENS Keegan Hoey

USS Winston S. Churchill (DDG 81) had recently finished her deployment and was now preparing for a yard period. It was the middle of spring and a good time for Sailors to relax while the ship received some much-needed repairs. Once the ship was successfully moored in the shipyard, the familiar routine of yard life began.

At the time, USS Winston S. Churchill was not the only ship in the yards. As a result, the majority of the ship's crew had to park in overflow parking. The overflow parking is roughly two blocks from the yard's entrance. It is located in an area of Norfolk that is not frequented by residents. Word of many near-miss car crashes started filtering through. At first, it was not clear why so many Sailors were having issues. Initial reports were that Sailors were not being cautious while driving through the area. Upon closer inspection, it was discovered that there was only one stop sign present at a four-way intersection.

The solution was obvious:

# GET MORE STOP SIGNS


However, that would mean getting the City of Norfolk's Transportation Division to act. As assistant safety officer, I reached out to the City of Norfolk's information line and spoke with a representative. I informed her of the issue and asked that additional stop signs be installed at that intersection. The representative pulled up a satellite image of the intersection and remarked that it was the city's impression that the area was abandoned. I informed her that this particular yard was not abandoned and that military and civilian personnel working there used the area as overflow parking. The representative stated she would forward the information on to the Transportation Division and assured me the division would act quickly.

Driving in the next week I noticed that where there used to be one stop sign at the intersection, there was now none. I asked the security guards if they had seen anyone take the sign and they informed me it was the police.

I reached out again to Norfolk's information line. Upon reaching another customer service representative, I informed her of the update and asked if she could check the progress on our original request. She said she did not see the original request in the system, but would forward the issue to the division. Before hanging up, I asked for the direct line and contact information for the department, in order to follow up individually.

After hanging up the phone with this second representative, I left a detailed message at the provided transportation division number stating that I would be following up every day until resolution of the issue. I understood that the situation had escalated greatly with no stop signs at the intersection and if the issue were not quickly resolved, someone would be injured, or worse.

To my surprise, driving through the intersection the next day, two stop signs were now present; the original and a new one on the opposite side. Bravo Zulu City of Norfolk! After the stop signs were added to the intersection, reports of near-miss car crashes disappeared.

While putting up stop signs at an intersection is a small feat, it can greatly affect the safety of military and civilian personnel. This situation is a great example of how safety personnel should look outside the normal safety categories when performing their jobs. Safety hazards do not confine themselves to predetermined categories nor do they confine themselves to the skin of the ship. As such, it is important to keep an open mind when it comes to the safety of the crew. 

**“While putting up stop signs at an intersection is a small feat, it can greatly affect the safety of military and civilian personnel.”**

# DANGER

## THE HIDDEN RISKS OF VAPING



Wikimedia.org Photo



CDR Jason Garrett

# Two

Sailors from USS Nimitz (CVN 68), Operational Specialist Second Class Katie Wright and Operational Specialist Second Class Daniel Geary made a trip to the local smoke shop to purchase a new vape. After considering several options, Geary made his selection, added a set of lithium ion batteries and a charger to his purchase and paid the cashier. Moments later, he walked out of the store, ready to charge the batteries and try out the new Mod. After getting situated in the passenger seat of the car, Geary inserted the batteries into the charger and plugged it in to the car's USB port.



As the Sailors drove from the shop Wright decided to pull into a nearby drive-thru for lunch. While she completed their order, Geary was busy unscrewing the Mod's battery compartment to load the newly charged batteries.

Geary slid the last of the batteries into the Mod cylinder and as he screwed the cap in place, he noticed the battery contacts turning red hot. It took only a moment before the batteries exploded with a deafening "BANG."

The flaming batteries went flying from the Mod with one landing on the floor, setting the vehicle's passenger side floor mat and carpeting ablaze.

Startled by the explosion and the flames, Wright quickly accelerated out of the drive-thru and into an empty parking spot. Once parked, she frantically grabbed a water bottle in an attempt to extinguish the flames as they began to burn Geary's leg. After a few panicky moments, she was able to douse the flames and extinguish the fire.

A silent moment passed as the shocked Sailors looked at each other in dismay, then at the burnt flooring and Geary's burnt jeans. That's when they noticed smoke beginning to billow out from behind the dashboard. They quickly realized that something was still burning. One of the flaming batteries had jumped onto the dash and fallen in the gap between the windshield and the vent ducting. Moments later they saw flames rising out of the dash. With no way for them to fight the fire, they opened the doors and ran for help.

Today there are many

concerns regarding the safety of vaping. While the health implications of using personal vaporizers is not yet known, there is clear evidence that the lithium ion batteries that power personal vaporizers (to include e-cigarettes of all sizes, vape pens, twists, mods and advanced personal vaporizers) can overheat

and catch fire or explode, sometimes with catastrophic results.

Lithium ion batteries can overheat if they are mishandled. Using an incompatible charger or damaging the batteries by exposing them to excessive cold, heat or even direct sunlight, are



File Photo

common mistakes that can cause them to overheat and explode. Even storing batteries in areas where they can contact metal objects or other loose batteries, such as in a desk drawer, under a rack or even in a pocket with loose change, can cause them to overheat and burst into flames. Simply mishandling a lithium ion

battery can create the potential for disaster.

However, even when the user does everything right, a battery can still explode. This is because some batteries and chargers are built with inferior quality standards in order to sell them at a lower cost. By leaving out safety

features, such as overcharge and over-discharge protection, or choosing not to acquire the restriction of hazardous substances (RoHS) certification, manufacturers lower the cost to you, but increase your risks. Cheaper products usually mean an increased danger to the user. **YOU GET WHAT YOU PAY FOR.**



File Photo

## Decrease the risk of your batteries exploding by following a few simple rules:

1. *Always carry loose batteries in a battery case that is designed to prevent contact with metal objects or other batteries.*
2. *Charge your batteries at the proper rate by using the appropriate and compatible battery charging device. (Remember, the power available from USB ports varies. You must use the correct one for charging your batteries.)*
3. *Buy high-quality batteries and chargers that have the RoHS certification. (Batteries are exempt from RoHS regulation; however, the safest batteries will have the RoHS certification and should be sought out.)*
4. *Do not use damaged batteries or let your batteries be damaged by exposing them to excessive heat, cold or direct sunlight.*
5. *Do not let your batteries be exposed to water.*



While following these guidelines will not guarantee you a safe vaping experience, they may reduce the risk of a battery explosion and the resulting damage. While we'll never know what caused Geary's batteries to explode in his new Mod, we learned firsthand just how damaging such a fire can be. Geary received first-degree burns on his leg that required medical attention and Wright lost her vehicle to the ensuing flames.

While our Sailors were unfortunate to have had such an incident happen to them, they were lucky it wasn't worse. Imagine what would have happened if the batteries had exploded while in their home, the barracks or even onboard their ship. The loss of property and potential loss of life could have been catastrophic.

While many argue that this type of mishap is statistically rare, we are seeing it occurring more frequently. This rise is due to a dramatic increase in the use of personal vaporizers. It is now commonplace to see non-smokers of traditional tobacco taking up the habit.

With more Sailors vaping, more of these lithium ion batteries are being brought on our bases, in our facilities, and onboard our ships, submarines and aircraft. This dramatically increases the risk of an explosion and a fire with disastrous consequences. All it takes is for one careless Sailor to mishandle a lithium ion battery, or to buy a cheap battery for their vape, and a statistically rare event can become a reality. (SC)



File Photo







# NOW YOU SEE ME

**Armbands Reflect Command's Commitment to Risk Mitigation**

**Fall** and winter nights are long in the Pacific

Northwest (PACNORWEST). Our nights are often more than 15 hours long, but it stays dark much longer than that. In the fall and winter we also have to contend with fog, an overcast sky, incessant drizzle and the low angle of the sun. It's no exaggeration to say that in the winter we live in complete darkness or an uninspiring twilight pretty much 24/7. What's surprising though is that the vast majority of folks in this area still prefer to wear dark clothing outdoors, shunning the idea of wearing bright reflective gear that can help drivers identify them in the darkness. This includes those of us in uniform, as well.

*CDR Jason Garrett*

For all the ridicule our Navy Working Uniform (NWU) has gotten regarding their ability to provide camouflage in the work environment, they do an excellent job of hiding our Sailors in the dark and gloom of the PACNORWEST. Several thousand Sailors on the mile-long trek between the parking garage and the USS Nimitz (CVN 68) are nothing more than scant shadows on the sidewalks, parking lots and streets.

For those driving their privately owned vehicles (POV), or the bus drivers bringing contractors to and from the ship, these shadows are a constant concern. It would seem only a matter of time before a Sailor gets hit or run over, except for one important piece of risk mitigation implemented by the commanding officer of USS Nimitz. Captain John Ring has required each Sailor on the ship to wear a reflective armband during hours of darkness. That little bit of reflectivity on an otherwise dark uniform can ensure our Sailors are visible to motorists on the road.

Now as you can imagine, getting more than 3,100 Sailors to consistently wear these reflective armbands is quite a challenge. It takes foresight, a tremendous communication effort, and patience. In short, what it takes is a good old fashioned safety campaign.

Last September, just as summer transitioned to fall, and the shortening of days was painfully obvious to us all, Ring asked the Safety Department to start just such a campaign to get reflective armbands on the crew. Understanding the urgent need as the days rapidly got shorter; the USS Nimitz Safety Department developed a simple three-step process to achieve this.

## STEP ONE

**Draft the Order:** The Safety Department drafted a USS Nimitz Note that would alert the Sailors onboard of the new requirement. A simple note outlined the following: “Reflective armbands are required to be worn while transiting on base and in the shipyard areas. Reflective armbands will be worn from dusk until dawn, and must be worn on the left arm, approximately four inches above the elbow. They will be worn regardless of civilian or military attire.”

## STEP TWO

**Obtain 3,100 armbands:** We knew in advance that it was unrealistic to expect the Navy Exchange, or even local area stores, to have 3,100 armbands already on the shelves for our Sailors. So the Safety Department put in a requisition to obtain the armbands through the supply chain. In just over a week, the new armbands were onboard, ready for distribution. Once they were received, the safety team issued them in bulk to each department. Each department was then responsible for handing them out to their Sailors. Within two weeks from the initial request, every Sailor onboard had an armband.

## STEP THREE

**Get the Sailors to wear them:** Once the Order was released and the armbands distributed, we still needed to consistently remind our Sailors to wear them. After all, it takes time to instill a habit. First we hung posters at the quarterdeck and throughout the hangar bay to promote the importance of being seen in the dark. Next, the Safety Department aggressively championed the subject at every opportunity, to include all hands emails, enlisted safety committee and safety council meetings, safety standdowns and one-on-one engagement with Sailors. But the greatest effect was caused by those Sailors who took the habit of wearing their armbands in earnest, and then encouraged their shipmates to do the same. Sometimes peer pressure can be a good thing.


**“That little bit of reflectivity on an otherwise dark uniform can ensure our Sailors are visible to motorists on the road.”**





Sailors from the USS Nimitz (CVN 68) are seen here wearing reflected armbands. The reflective bands are part of an important risk mitigation effort implemented by the commanding officer of USS Nimitz to prevent injuries of personnel during hours of darkness. (US Navy Photo)

Within a month, just as seemingly perpetual night settled in, the vast majorities of the crew had their armbands on and were highly visible wherever headlights shined upon them. The occasional Sailor who forgot the armband at home would stick close to fellow shipmates, seeking safety in numbers. By walking in groups with those who were wearing their reflective gear, shipmates were protecting shipmates in the dark.

Eventually, as spring approached and the days got longer again, the USS Nimitz team abandoned their armbands. With daylight hours almost 16 hours long, it's been rare that a Sailor will walk to or from work in the dark. But here it is, late summer again and already we are noticing the days getting shorter. It's time for the USS Nimitz Safety Department to start thinking about implementing the three-step process to get armbands on our Sailors again. It's also a great time for you to consider if this idea is a good one for your ship and your shipmates. 

# We want to hear from you!

We do our best to cover stories, articles and information that may be helpful or necessary to manage your safety program and/or promote safety awareness on and off duty. If you have a question or opinion about anything you read in *Sea Compass*, send us your comments.

## Calling All Public Affairs Specialists and MCs

We welcome public affairs and mass communication specialists as fleet correspondents or guest editors. We want to hear about your ship's safety programs, best practices and risk-management success stories. Send your press releases to [safe-seacompass@navy.mil](mailto:safe-seacompass@navy.mil).

## Letters to the Editor

We want to hear what you think about something you read in *Sea Compass* magazine. Letters must include your name, email or phone number (for verification). Letters may be published anonymously. Write to [michael.j.morris@navy.mil](mailto:michael.j.morris@navy.mil).

## BZs and Attaboys

Nominate an individual or a group from your command/unit for a job well done. Write a brief narrative (500 words) including name(s) of the nominee(s) and reason for the nomination. Please include your name and contact information.

## Lessons Learned and Safety Culture

Help us preserve combat readiness and save lives by sharing your lessons-learned story in *Sea Compass*. Perhaps you've experienced a personal mishap or a near-miss at work. How did that shape your behavior and/or your command's safety culture? Send articles (450 words minimum, 1,500 words maximum) to [safe-seacompass@navy.mil](mailto:safe-seacompass@navy.mil).

## Submit Seasonal Off-Duty Story

Do you have a story about a mishap or near-miss that occurred while off duty during the warmer days? Send your submission for the spring-summer issue. We'll take any topic as long it demonstrates risk-management and lessons learned.

## Information

Download the detailed article submission guidelines from [http://www.public.navy.mil/navsafecen/documents/media/magazines/Submission\\_Guidelines.pdf](http://www.public.navy.mil/navsafecen/documents/media/magazines/Submission_Guidelines.pdf)

Contact us at [safe-seacompass@navy.mil](mailto:safe-seacompass@navy.mil) for more information.



# SAFETY OFFICER TOOLBOX

OUR MISSION IS TO PREVENT MISHAPS, SAVE LIVES AND PRESERVE RESOURCES

## Naval Safety Center Resources

This comprehensive toolbox offers command safety officers and collateral duty safety officers the resources and training material necessary to start, improve and/or run a command safety program.

If you can't find what you're looking for and need help, please email us at **safe-oshfdbk@navy.mil**. Your email will be answered within one working day.

- Checklists
- Data Request Forms
- Downloads
- Marketing and Publicity
- Mishap Reporting, Investigating and Recordkeeping
- Technical Guidance
- Training
- Training Materials, Links and Resources

## Afloat and Aviation Safety Course Prerequisites

### Oversight Inspection Checklists

Checklists are in Excel format so they can be modified locally. Master copies are at the Naval Safety Center. Send requests for changes to **safe-oshfdbk@navy.mil**.

- Safety and Health Management Evaluation
- Comprehensive Workplace Inspection Checklist

### Selecting Personal Protective Equipment

Products developed by the DON PPE Working Group.

- Chemical Eye & Face Protection Training
- Chemical Hand Protection Training
- ISEA Chemical Hand Protection Training
- Chemical Eye & Face Protection Matrix
- Chemical Resistant Gloves Matrix





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