

MEECH

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UNDER PRESSURE

*Threat & Error
Management*

INSENSITIVITY IS GOOD

+ PERSONAL &
OPERATIONAL
RISK REDUCTION
INFORMATION



101 CRITICAL DAYS OF SUMMER



27 Sailors and Marines died last summer in off duty mishaps while many more were injured.

Accidents and mishaps are preventable if we manage risks and comply with laws and best practices.

Be risk aware to prevent common summertime injuries due to motor vehicles, motorcycles, high heat, swimming, boating, alcohol, fireworks, firearms, sports, home projects and more.

This summer, understand risk and prevent accidents.



Maintenance Officer, Naval Safety Command

This letter is about our commitment to the basics. It's built on insights from our own senior leaders, and their message is clear: our greatest challenges are not new, nor are they the result of complex technical failures. They are fundamental breakdowns in discipline, communication, and professionalism that directly correlate with the well-known "Filthy Fifteen" human factors of aviation maintenance. These are not just stories; they are a call to action for every maintainer on the deck.

The common themes from these articles can be distilled into three core pillars of our profession:

1. The Human Element: Confronting Complacency and Pressure.

One of the most dangerous factors in our work is complacency. The story of a screwdriver left next to a spinning driveshaft is a stark reminder that a moment of inattention on a "routine day" can have catastrophic consequences. This is often fueled by pressure—real or perceived—to meet operational demands. As our leaders point out, pressure is not an excuse to deviate from standards. We must have the professional integrity to manage threats and errors, whether by using full Plan, Brief, Execute, Debrief (PBED) process for a complex job or simply ensuring a tool is calibrated before use.

2. Procedural Discipline: The Bedrock of Safety.

Our maintenance publications and Interactive Electronic Technical Manuals (IETMs) are the blueprints for survival. As you read through this edition, the articles will consistently show that mishaps are born from a lack of knowledge or a willful disregard for our governing instructions. Whether it's the meticulous process of an aircraft transfer, the "simple" act of chocking support equipment, or the vital pre-flight of an aircrew vest, there are no shortcuts. Embrace the '5 Rights of the Job' as your personal pre-flight check: Right Data, Right Parts, Right Tools, Right Personnel, and Right Sign-Off. Our trust in our equipment and each other is earned through this disciplined, verifiable process.

3. Engaged Leadership: Owning the Standard.

A messy workspace, an uncalibrated tool, or a "that's not my gear" attitude are all symptoms of a breakdown in leadership and teamwork. Leaders must be on the deck to teach, correct, and enforce standards—not to micromanage. Cleanliness, FOD prevention, and proper HAZMAT control are not chores; they are immutable elements of a professional maintenance environment. Ownership means ensuring your people have the resources to do the job correctly and fostering a culture where every team member feels empowered to stop and ask questions.

Naval Aviation is built on the backs of its maintainers. The aircraft do not fly without your sweat, your expertise, and your uncompromising integrity. Embracing these basics is not just about following a checklist; it is about honoring the pride we take in our craft and the trust our aircrews place in us every time they man the cockpit. Own the standard on the deck today, teach it to the new Sailor tomorrow, and let's continue to set the benchmark for professional aviation maintenance.

Enabling Warfighting Readiness.

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MECH

MECH provides stories, information, procedures and most of all, a place to raise safety awareness among our aviation maintainers. The safety information and risk awareness articles in MECH are credited as a critical part of a continually improving safety program in naval aviation.

Since 1961 MECH has been a supplementary publication of Approach magazine for the aviation maintenance community. With inputs from the fleet, Naval Safety Command staff and subject matter experts, MECH helps keep the aircraft mission ready and flying.

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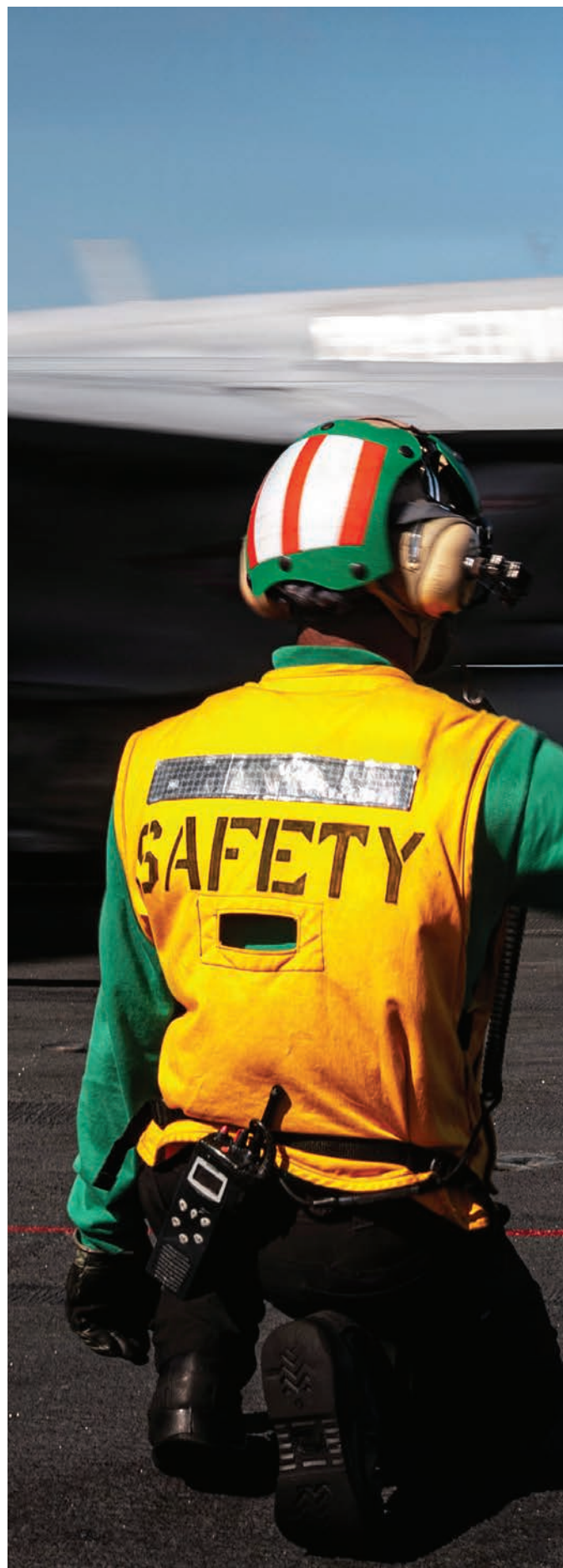
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A Sailor signals the launch of an F/A-18E Super Hornet aircraft, from the flight deck of USS Gerald R. Ford (CVN 78) while underway in the U.S. Southern Command area of responsibility, Nov. 30, 2025. (U.S. Navy photo by Mass Communication Specialist 2nd Class Tajh Payne)

MASTERING MAINTENANCE

MASTER CHIEF
AVIONICS TECHNICIAN
DAVID J. BROOKS

Safety and quality are absolute in naval aviation. Every successful sortie relies on a maintenance team that operates with precision and a commitment to learning. For too long, the structured, methodical approach of flight crews has been seen as separate from the day-to-day work on the hangar deck. This mindset is changing, thanks to the incorporation of two powerful, complementary frameworks: Plan, Brief, Execute, Debrief (PBED) and the 5 Rights of the Job. Woven together, these are not just buzzwords; they are a philosophy for maximizing human performance, reducing errors and creating a culture of continuous improvement.

UNDERSTANDING PBED: THE BLUEPRINT FOR SUCCESS

PBED is a structured approach to task management essential for high-performance environments. While often associated with flight operations, its value in maintenance is immense, particularly for high-risk evolutions.

- **PLAN:** This is where the foundation for a successful job is laid. It involves clearly defining the task scope, anticipating hazards, gathering the necessary tools and publications, and assigning clear roles. It is our chance to think through every step before a single wrench is turned.
- **BRIEF:** The brief communicates the plan to the entire team. It ensures everyone understands the objective, their specific role and all associated risks. This is the moment for questions, clarification and confirmation the team is moving forward as one. Before a complex engine repair, for example, the supervisor would brief the team on specific procedures and potential hazards like confined spaces or hazardous materials. This is also the time to highlight “what’s different today?” Although evolutions may be considered routine, the operating environment, weather, personnel involved, time, etc., differ from the previous evolution and must be addressed.
- **EXECUTE:** This is the phase of disciplined action. It means carrying out the plan while adhering strictly to procedures, maintaining clear communication and accurately documenting all work performed.
- **DEBRIEF:** The debrief is arguably the most critical step for improvement, yet it is most often overlooked. It is a structured, honest review of the task. What went well? What could have been done better? A good debrief identifies the root cause of any problems and generates

lessons learned to improve a process, recommend a better tool or highlight a gap in training.

THE 5 RIGHTS: THE MAINTAINER’S PRE-FLIGHT CHECK

While PBED provides the framework for the task, the 5 Rights of the Job provides the quick mental checklist every maintainer must perform before execution. These principles are deeply embedded in the Naval Aviation Maintenance Program.

1. **RIGHT TECHNICAL DATA:** Do I have the correct, current and approved technical data for this task? Using an outdated manual is a recipe for disaster.
2. **RIGHT PARTS:** Do I have the correct, serviceable parts? This check ensures the part has the correct number, the required certifications and is visually inspected for defects.
3. **RIGHT TOOLS:** Do I have the correct, calibrated tools? This confirms that critical equipment, like torque wrenches, are within calibration periodicity and set to the correct value.
4. **RIGHT PERSONNEL:** Am I trained and qualified to perform this task? This is a fundamental check of experience and knowledge, ensuring the person doing the work understands the job and its hazards.
5. **RIGHT SIGN-OFF:** Do I understand how to properly document this task? Accurate documentation is critical for traceability, safety and all future maintenance.

A SYNERGISTIC APPROACH: WEAVING IT ALL TOGETHER

The true power of this philosophy lies in combining these two systems. The 5 Rights are the essential checks feeding directly into the PBED cycle. The Plan phase is, in essence, a formal process of confirming the 5 Rights. The Brief is where the team collectively verifies them. During Execution, the team adheres to the “Right Technical Data” and performs the “Right Sign-Off.” And in the Debrief, a root cause analysis will often trace an error directly back to a failure in one of the 5 Rights: an uncalibrated tool, an incorrectly traced part or a lack of proper training.

By adopting PBED and the 5 Rights, we foster a culture where mistakes are viewed as opportunities to learn. This combined approach moves us beyond simply fixing things to truly mastering the maintenance process. It empowers every maintainer to take ownership of safety and quality, transforming a complex job into a controlled, predictable and successful operation.

Aviation Machinist’s Mate assigned to Patrol Squadron (VP) 46 conducts routine maintenance on the port engine mount of a P-8A Poseidon attached to VP 5 in the hangar at Naval Air Station Sigonella, Sicily, Aug. 26, 2025. (U.S. Navy photo by Mass Communication Specialist 2nd Class Sang Kim)

ACTIVE SUPERVISION

GUNNERY SGT. ANTHONY CURLESS

A phrase closing many great stories is “You should have been there!” However, when the story is about a preventable incident on the flightline, it becomes a statement of failure and a reminder of a moment where proper supervision may have made all the difference. Nobody in a position of leadership ever wants that phrase to apply to them.

We have all seen it: a tool left unattended, a maintenance stand positioned unsafely or a junior maintainer struggling with a procedure, seemingly without guidance. It is easy to walk past and assume someone else is handling it. However, in the high-stakes environment of naval aviation, these assumptions are the seeds of complacency and their consequences can be catastrophic. This is not about pointing fingers; it is about honest self-reflection and asking a critical question: “Am I on the flightline enough?”

Safety assessments across the fleet often paint a concerning picture. We routinely witness maintainers entrusted with multi-million-dollar aircraft and the lives of their fellow Sailors and Marines performing maintenance, relying on memory instead of approved publications. How does this happen? Complacency is a primary suspect. Years of experience can breed a false sense of security, leading a technician to believe they know a procedure inside and out. The relentless pressure of operational schedules can also tempt individuals to cut corners, sacrificing precision for speed.

However, a more in-depth look reveals complacency higher up the chain of command. Inadequate supervision creates the permissive environment where these dangerous habits flourish. When leaders are not actively engaged on the flightline, they are

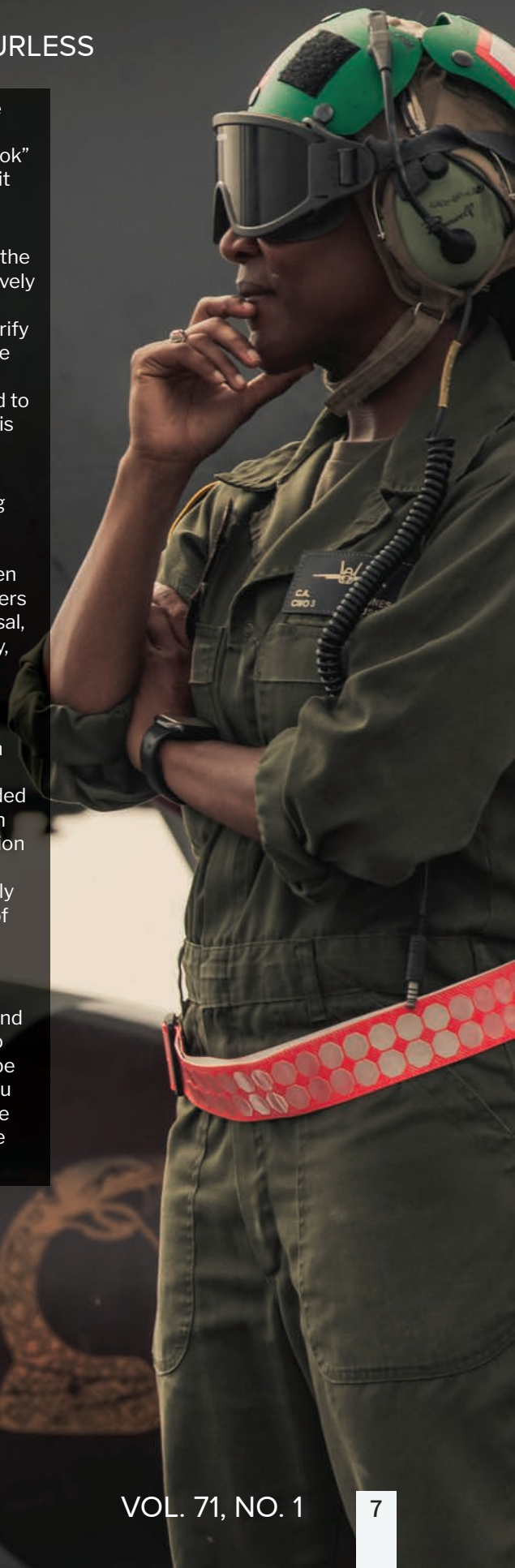
silently condoning deviations from the established standards. Their absence sends a powerful message “by-the-book” maintenance is optional when, in fact; it is the bedrock of our profession.

Think about the last time you walked the flightline. Did you simply glance at the aircraft or did you take the time to actively engage with the maintainers? Did you ask what they were working on and verify they were using the correct, up-to-date publications? Did you ensure they had the proper tools and resources needed to do the job safely and effectively? This is the core of active supervision.

Effective supervision is not micromanagement. It is about creating a command climate of continuous improvement and unwavering accountability. It is about fostering open communication encouraging maintainers to raise concerns without fear of reprisal, and being present — not just physically, but mentally and emotionally invested in the work being done.

The consequences of failing in this duty are not theoretical. Naval aviation history is filled with mishaps directly attributable to human error compounded by supervisory failures. A loose bolt, an improper wire repair, a missed inspection or an incorrectly configured piece of ordnance — any one of these seemingly minor oversights can lead to the loss of life, the destruction of an aircraft and the erosion of trust placed in us.

We owe it to ourselves, our fellow maintainers and the aircrew who depend on us to ensure every aircraft taking to the skies is safe. We cannot afford to be complacent. When it matters most, you should have been there. You need to be there. The safety of our people and the success of our missions depend on it.



PERCEIVED

SENIOR CHIEF AVIATION MACHINIST'S MATE MELVIN PARKER

Every maintainer is familiar with pressure. Flight schedules, operational commitments and the need to generate mission-capable aircraft create a constant sense of urgency. However, there is a more subtle and equally dangerous force at play: perceived pressure.

This perceived pressure is the unspoken stress that builds when priorities are unclear, timelines are unrealistic and communication breaks down. It is the silent threat that can lead to shortcuts, eroded morale and ultimately, compromised safety. Effective leadership is the primary tool for dismantling this hazard and fostering a culture of focused, confident professionalism.

One of the most critical responsibilities of maintenance leadership is to establish and defend clear, achievable priorities. When everything is presented as the No. 1 priority, the work center is thrown into a state of structured chaos and perceived pressure skyrockets. I witnessed this firsthand as a work center leading petty officer (LPO) in a dysfunctional maintenance department. Lack of clear direction from above created constant strain. We would begin working on what we believed was the "priority," only to be redirected to something else and then redirected again. We were fortunate to complete even one of our three "top" priorities for the day. This environment forced us to cannibalize parts just to meet minimum aircraft requirements and our pilots often had to fly with other squadrons to maintain their hours simply because our assets were not available. The failure to set a clear plan created a persistent, draining sense of urgency.

Conversely, I have seen how engaged leadership positively transforms a maintenance department. In one of my previous commands, the leadership team operated as a cohesive unit. From the maintenance material control officer down to the desk chief, everyone understood the plan for the week and, just as importantly, the reasoning behind it. The maintenance master chief not only managed the schedule but also pushed back when necessary, ensuring operational demands did not compromise safe maintenance practices. Instead of operations dictating maintenance, our priorities were well-defined. Adequate time was allotted for scheduled inspections with the clear expectation every task would be executed "by the book."

This clarity cascaded down to the deck plates. Each work center received three main priorities in order of importance. Once those tasks were completed, the LPO would return to maintenance control to review new discrepancies and determine what could be worked next. This simple, structured process allowed work to be completed efficiently and set the next shift up for success. As a result, inspections were more thorough, rework decreased,

qualifications increased and morale improved. The "unknown" that fuels perceived pressure was replaced by a shared sense of purpose.

This principle extends to the supervisors on the hangar floor. A crucial part of managing pressure is aligning the right talent with the right task. Effective leaders and supervisors understand the strengths and weaknesses of their personnel. They delegate tasks based on skill level, pairing junior maintainers with seasoned technicians to foster development and ensure complex jobs are handled by experienced hands. When technicians feel competent and supported in their assigned tasks, their confidence grows and the perceived pressure to perform beyond their capability naturally declines. This intentional alignment of people to tasks is not just about efficiency; it is about building a resilient and capable team.

However, even the best plans can be undermined by poor communication. When messages between maintenance

control and the work centers are distorted, unrealistic expectations and frustration are sure to follow. This became painfully clear later in my career while running the desk in a less effective command. The operations department drove the maintenance schedule, and leadership had limited ability to push back. Communication breakdowns were common and each shift's personnel developed their own assumptions about priorities, often resulting in the wrong aircraft being prepared for flight. Even small, last-minute changes to a seating configuration or fuel load would compress timelines and force work centers to stop, re-prioritize and rush to accommodate the new direction. The prevailing message was simply, "Hurry up and get it done!" — a phrase that is the enemy of safe and effective maintenance.

Aviation maintenance will always be a dynamic and demanding environment. Parts will arrive, discrepancies will grow and schedules will change. The key to navigating this reality is constant, transparent communication. Supervisors must keep an open dialogue with maintenance control, provide updates as tasks are completed and inform their teams and adjacent work centers when priorities shift. These updates eliminate "information vacuums" that breed speculation and stress. A team that feels informed, supported and valued will always outperform one that feels rushed, confused and overwhelmed.

Our goal must be to create an environment where work is performed with precision and confidence, not under a cloud of perceived pressure. By setting clear priorities, allocating realistic timelines and ensuring continuous communication, we empower our maintainers to do their jobs safely and effectively. The aircraft we maintain and the lives of those who fly in them depend on it.

"...engaged leadership positively transforms a maintenance department."

PRESSURE





CHOCK IT

SENIOR CHIEF AVIATION SUPPORT EQUIPMENT
TECHNICIAN DEXTER G. RONQUILLO

It is easy to overlook the simplest tools. The chock is a perfect example: a basic restraining device with no moving parts yet it is one of the most effective and frequently neglected pieces of safety equipment we have. Recent local area assessments show a troubling trend across the fleet of support equipment (SE) left unchoked in hangar bays and on flight lines. This is not a minor oversight; it is a symptom of a larger problem.

Interviews reveal three primary reasons for this failure: a complete disregard for procedure, a lack of proper training and an insufficient allocation of chocks.

The first reason, a complete disregard for the standard, is the most concerning. It points to a maintenance culture where known procedures are ignored, often because of a “that’s not my gear” mentality when dealing with SE checked out from a supporting activity. This is a failure of ownership and professionalism.

The second reason, a lack of training, is equally dangerous. Junior maintainers, seeing SE like a Mobile Electric Power Plant or a Nitrogen Servicing Unit has its own brakes, incorrectly assume chocks are not required. This is where active supervision is critical. Leaders must be on the deck, educating their personnel and correcting these unsafe assumptions on the spot. A brake system can fail; a properly used chock cannot.

The third reason, an insufficient allocation of chocks, is a correctable logistics issue. A command often has the full allowance of chocks for its assigned aircraft, but has no allocation for the various pieces of SE needed to maintain them. Individual Material Readiness List managers must take the initiative to submit a revision request, ensuring their allowance reflects the reality of their daily maintenance operations.

The guidance in our publications, like the NAVAIR 00-80T-96 Basic Handling and Safety Manual, is clear-cut. Chocks prevent the unintentional movement of all wheeled SE and aircraft. They “shall be in place except during movement.” For aircraft, chocks are only removed after the tow tractor is attached and manned, and they are the first thing installed before the towbar is ever disconnected. The manual even specifies chocks must fit snugly against the front and rear of the tire. These are not suggestions; they are foundational safety rules.

Neglect of a minor detail can lead to a major mishap. An unsecured piece of equipment rolling across a hangar bay or flight line can cause catastrophic damage to an aircraft or, far worse, injure or kill a shipmate. Using chocks is a simple, effective act of professionalism that demonstrates an understanding of the environment and a commitment to the safety of everyone on the deck.

Let’s use them. Stay safe. Stay focused.

Prior to the release of the COMNAVAIRFORINST 4790.2E, Naval Aviation Maintenance Program Standard Operating Procedures (NAMPSOP) 10.40, the guidance for Aviation Life Support Systems (ALSS) was a scattered maze, with critical requirements buried across multiple chapters. NAMPSOP 10.40 was a landmark achievement, consolidating these rules into a single, authoritative source.

Yet, despite this newfound clarity, Naval Safety Command Tier III assessments continue to uncover dangerous fleetwide trends in how we manage the very equipment designed to save lives in a crisis. These are not minor administrative errors; they are cracks in the foundation of our safety culture.

The first, and perhaps most alarming, trend is the failure to properly restrict not-ready-for-issue (NRFI) gear. The guidance in paragraph 10.40.12.5(e) could not be clearer: "Restrict all NRFI ALSS from use. A copy of the associated work order/maintenance action form will be attached to all NRFI items." However, we continually find unserviceable life support equipment hanging on the same rack, stored in the same locker or otherwise intermingled with ready-for-issue items. This happens both in I-level shops and at the squadron level.

The process failure is driven by a breakdown in discipline. Too often, aircrew are simply relying on a verbal notification from the Aircrew Survival Equipmentman (PR) or Maintenance Control to know their gear is down. This practice creates a direct path to a mishap.

Imagine a pilot, focused on an impending brief, rushing to the ALSS shop. They instinctively grab their helmet and vest from the usual spot, trusting it is ready. Why would they think otherwise? If the NRFI gear is not physically separated, there is no visual cue, no hard stop to prevent them from walking out the door with an uninflatable life raft or a broken emergency radio.

This is why the NAMP requires both a tag and physical segregation. It is not an administrative exercise. It is a deliberate disruption of routine designed to force the critical conversation between the aircrew and the maintainer.

The second, equally dangerous trend is the failure of aircrew to consistently perform pre-flight and post-flight inspections on their own equipment.

As mandated by 10.40.12.7, aircrew are required to be trained on and comply with these procedures as outlined in the NAVAIR 13-1-6 series manuals and other publications. It is not optional; it is a fundamental responsibility repeatedly identified as a contributing factor in mishap investigations.

The PRs and Flight Equipment Marines inspect the gear on a scheduled basis, often at 30, 90 or even 360-day intervals. A lot can happen between those formal inspections. A harness can fray during a rescue, a helmet visor crack on a rough flight or a seal can be compromised by daily wear and tear. These items will not fix themselves and if the user does not identify the problem, it may go unnoticed for months.

The aircrew member is the first and last line of defense for their own survival equipment. When a discrepancy is found, it is their responsibility to initiate the work order to get it fixed.


This creates a fundamental, life-saving partnership. The maintainer trusts the aircrew to be the daily inspector, to report the smallest tear or malfunction. In turn, the aircrew trusts the maintainer to execute the repair with meticulous, life-sustaining precision. The NAMP provides the standardized process making this partnership work. Its procedures for identifying, tracking and managing ALSS are not just rules to be followed; they are a covenant of trust.

This is a call to action for every maintainer and every aircrew member. In the lonely, violent moment of an ejection or a ditching, there is no room for doubt. There is only you, your training and the gear you are wearing. Take pride in your work and recognize the gravity of your role. Thoroughly understand and follow the NAMP. Report any discrepancy immediately. Continuously seek to improve your knowledge. When it comes to ALSS, there is no room for error. Lives depend on it!

AVIATION LIFE SUPPORT SYSTEMS

SENIOR CHIEF
AIRCREW
SURVIVAL
EQUIPMENTMAN
MATTHEW OLSEN

Aircrew Survival Equipmentman 3rd Class Briza Reinhart inspects strap buckles on an A/P22P-20 parachute aboard USS Abraham Lincoln (CVN 72) in the Philippine Sea, Dec. 2, 2025. (U.S. Navy photo by Mass Communication Specialist Seaman Hannah Tross)



Every maintainer has a story about an incident that could have ended terribly. If you're in the Navy, you probably have more than a few. We operate in high-risk environments day in and day out. My story happened a few years ago when I was with the Swamp Foxes (HSM-74), deployed aboard USS Dwight D. Eisenhower (CVN 69). It was July in the Persian Gulf. The heat was oppressive, and we weren't used to it yet, a fact I believe led to critical oversights.

Some hazards are of our own creation, not just part of the cost of doing business. This is why we have the Naval Aviation Maintenance Program (NAMP). It's our bible. Stick with the NAMP, and you'll have fewer stories about how things went wrong.

Like many stories in today's Navy, this one starts in the Gulf. We were sending out aircraft to put "warheads on foreheads." One of our MH-60R helicopters launched before sunrise for a long day of dropping sonobuoys. It had hot-seated new aircrew and refueled several times before its final leg near the change of shift; just another "routine day."

During evening shift change, all the tools were being inspected. As a fresh aviation structural mechanic second class (AM2) and a new collateral duty inspector, I was in the Airframes shop with the rest of the maintainers.

Then the question came: "Where's the screwdriver?"

The normally-noisy shop went silent. Everything stopped! We all looked over at the AM2 who had the flight deck troubleshooter's tool pouch checked out, and my stomach dropped.

We scoured through the tool log, hoping the pouch had been checked back in and out at some point, but

it had not. The tool log showed he was the only one to check it out that morning. We didn't know where the screwdriver was, so maintenance control recalled the aircraft.

Here is what happened. Before the first flight of the day, a maintainer from the mech shop needed to correct a small discrepancy under a cowling near the intermediate driveshaft. The AM2 went to assist him, which is common on the flight deck. During the job, he placed his screwdriver next to the driveshaft instead of returning it to his pouch. Afterward, the cowling was reinstalled, trapping the screwdriver inside, and the aircraft launched. He did not notice his tool was missing for nearly 12 hours.

Our commanding officer flew that helicopter that day. Our executive officer and our maintenance officer also flew in that aircraft, not to mention the other pilots and aircrew who were onboard throughout the mission.

The driveshaft, spinning at thousands of revolutions per minute just centimeters from the misplaced screwdriver, is a single point of failure for the tail rotor. There is no backup! A hard landing, a sharp bank or just the wrong vibration could have ended it all.

After the aircraft landed, we all watched the monitor in our shop that showed a live feed of quality assurance removing the cowling. You could see the visible sigh of relief on their faces, quickly followed by looks of horror and disbelief as they removed a completely untouched screwdriver.

The procedural breakdown was a failure at every level. The multi-tiered system of accountability we rely on, from the individual to the shop to QA, had collapsed. I believe the relentless ops-tempo was a

A man with a mustache and glasses, wearing a green long-sleeved shirt and a blue watch, is focused on working on a light blue aircraft engine component. He is using a large, dark metal wrench. In the background, a red toolbox with a "MADE IN USA" logo is visible. The overall scene is set in a workshop or hangar.

ONE SCREWDRIIVER AWAY FROM DEATH

AVIATION STRUCTURAL MECHANIC
1ST CLASS KYLE J. SPRAGUE

factor, but the true culprit was complacency. On that flight deck, I would check the tools of the maintainers around me, and they would check mine. If QA forgot, I would bring my tools anyway. That clearly did not happen here. There is simply no place for complacency in aviation maintenance.

The fallout was immediately apparent. The remaining flight schedule was canceled. Qualifications and rank were taken at non-judicial punishment, but the real cost was the trust that had been shattered. The trust between aircrew and maintenance. The trust we had built in our own shops and the trust from our leadership were all destroyed. Our reputation as a maintenance department was dealt a massive blow, and it was a long, slow road to recovery.

The "fix" was not a new procedure but a forced return to the basics we should have been following all along. For a time, the chiefs were the only ones allowed to check tools. We were reminded rotating personnel on the flight deck and doing tool checks is critical to fighting the monotony that breeds complacency. Being deployed for months can make every day feel the same, but every day, something will be different. Adhering to the basics is what ensures each task goes well.

I can tell you QA did not forget another tool check before giving the thumbs up to the pilots on launch after that day. The incident shocked everyone back to where our heads needed to be. A healthy sprinkle of paranoia when performing safety-of-flight maintenance is what keeps these things from happening. The NAMP is there because of stories like this and stories with much sadder endings. NAMP is there to get everyone home.

THE COMMANDER'S VOICE

GUNNERY SGT. BRIAN VAUGHN

Commanders across the fleet are tasked with maintaining, training and equipping combat-ready forces. This begins with a mission statement providing the “who, what, when, where and why” specifics. But what happens when that message, intended to inspire initiative, is misinterpreted? This is where a gap can form between a commander’s intent and the fleet’s perception of safety.

Consider the common motto: “Mission First, Safety Always.” A commander’s intent is clear: accomplish the mission and do so safely. However, a subordinate leader, under pressure to perform, might

hear the “Mission First” part louder than the “Safety Always” part. This can lead them to accept a risk the commander never intended, all in the name of mission accomplishment.

Now, let’s flip it: “Safety First, Mission Always.” Does this solve the problem? Not necessarily. A leader could now interpret this to mean no risk is acceptable. This is incompatible with building a combat-ready force. The mission is always there but it may never be accomplished if we become completely risk averse. The point is not that the mottos are wrong but, without a concise and continuously communicated definition from the commander, they are left open to interpretation.

This ambiguity extends to our policy letters. A safety policy might state, “Leaders will provide a safe environment, and safety is everyone’s responsibility.” But what does a “safe environment” look like to the commander? And what does “everyone’s responsibility” truly mean to a junior Sailor or Marine?

During assessments, we asked them. The answers were revealing: “Safety is common sense.” “Enforcing safety isn’t always popular; Quality Assurance (QA)

will handle it.” “Performing a task as safely as we possibly can.” These answers, while well-intentioned, show a diffusion of responsibility. If safety is simply “common sense,” it is subjective. If it is QA’s job, then it is not truly everyone’s. Vague statements can create a flawed and inconsistent perception of safety.

So, what does “right” look like?

It begins with using clear, action-oriented language. Commanders must define their terms. For example, instead of just saying “provide a safe environment,” a policy could state, “Leaders will provide a safe environment by understanding, training to and enforcing Navy Occupational Safety and Health standards and our maintenance publications.” This transforms a vague ideal into a concrete, measurable standard. The leader now understands the commander’s intent for a safe environment is the standard, not a matter of opinion.

When using mottos, we must relentlessly convey their meaning. This should be a topic at every all-hands call, reinforcing the commander’s intent until it is understood by all. Before publishing a new policy, commanders should consult with their peers and senior enlisted leaders to ensure the message is unambiguous.

The goal is to eliminate confusion. If our mission statements and safety policies are not communicated with precision and clarity, our perception of safety may become flawed, leading to failure before we even begin. A true safety culture is built not on catchy phrases but on the foundation of clear, concise and continuous communication from the top.



Capt. Daniel Keeler, commanding officer of USS Abraham Lincoln (CVN 72) delivers remarks on the flight deck to Sailors during an all-hands call while moored at Naval Station North Island, Calif., Oct. 30, 2025. (U.S. Navy photo by Mass Communication Specialist 3rd Class Christian Kibler)

Aviation maintenance is built on a foundation of trust. We trust our training, our procedures and our shipmates. Crucially, we must also trust our tools. But that trust cannot be blind. It must be earned, validated and continuously verified. The system underpinning this trust, ensuring every measurement we take is accurate, is the Naval Aviation Metrology and Calibration (METCAL) Program.

The scope of the METCAL program is immense, reaching far beyond the flight line. It is responsible for the calibration of every piece of Test, Measurement and Diagnostic Equipment. It includes instruments the Aircraft Intermediate Maintenance Department uses to test rebuilt aircraft engines; the gauges Engineering relies on to monitor critical propulsion systems and even the thermometers ensuring Supply's refrigerators are at the correct temperature. For a maintenance supervisor, understanding the impact of an effective calibration program is essential because a failure here can mean the difference between mission success and failure.

Like many programs, a successful METCAL program is an "all-hands" responsibility. Work center supervisors manage this trust through the monthly Format 350 and 802, reports which provide a complete inventory and flag any equipment due or overdue for calibration. But the reports are only half the story. The physical proof is the calibration sticker on the equipment. Every maintainer is responsible for checking this sticker before use and ensuring its information matches the official report exactly.

The most critical rule, however, is one of common sense; a principle we routinely apply to our personal lives. If you suspect your car's brakes have an issue, you would not wait for your next scheduled service interval to have them checked. This principle is absolute in our profession. Equipment suspected of being out of tolerance or functioning improperly must be removed from service and turned in for calibration immediately, along with a discrepancy report.

There is no room for interpretation. A pressure gauge overdue for calibration must not be used. A torque wrench with a broken "calibration void if seal broken" label is considered uncalibrated and must be turned in. A rejected item is not a suggestion to be careful; it is a command to replace it. If there is ever a question about the status of a piece of gear, every maintainer has the obligation to stop and ask their Work Center Supervisor or Calibration Petty Officer.

Ultimately, the METCAL program is about more than stickers and reports. It ensures when a maintainer torques a bolt, checks pressure or tests a circuit, the reading is true. An improperly calibrated tool can lead to a cascading failure, jeopardizing an aircraft and its crew. When we verify our equipment, we are upholding the trust placed in us by the aircrew who fly the aircraft we maintain.

CALIBRATION VERIFICATION

SENIOR CHIEF AVIATION ELECTRONICS
TECHNICIAN ADAM TERRELL

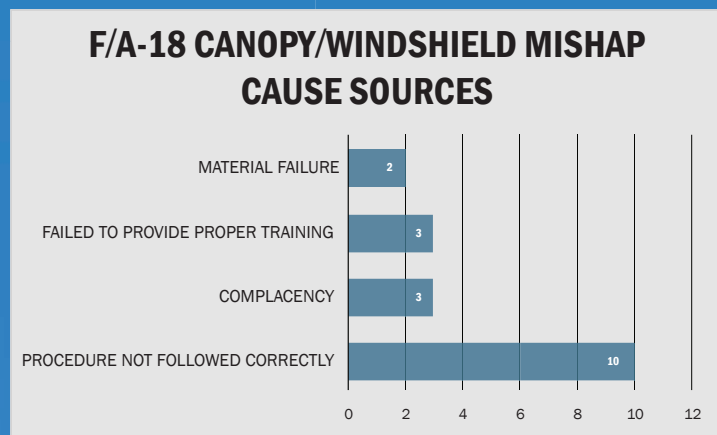


UNSEEN SHOCK

SENIOR CHIEF AVIATION STRUCTURAL MECHANIC ANTHONY ABRAHAM

The F/A-18 Hornet, Super Hornet and E/A-18 Growler are the backbone of Naval aviation, but they carry an invisible hazard that has injured our maintainers and pilots across the globe: Electro-Static Discharge (ESD). ESD is not a minor nuisance; it is a significant safety threat demanding the full attention of every officer, senior leader, Sailor and Marine. From Naval Air Stations Lemoore and Oceana to outposts in Japan, hazard reports tell a consistent story of personnel receiving severe shocks from aircraft canopies and windshields, underscoring the enterprise-wide nature of the challenge.

According to Risk Management Information mishap data, 18 incidents were reported between fiscal years 2015 and 2025 (Figure 1) where personnel sustained ESD shocks severe enough to require medical attention. The voltage from a charged canopy can reach up to 100,000 volts, which is more than enough to knock a maintainer off an aircraft. In one documented case, a maintainer fell nearly 10 feet to the flight line deck after receiving a shock. These are not theoretical risks; they are real events with severe consequences.



The root cause often lies in a combination of human factors and equipment failure, as detailed in our maintenance Interactive Electronic Technical Manuals and Maintenance Requirement Cards (AG-290AC-MRC-100/200). Complacency and the relentless pressure to meet operational demands can lead maintainers to rush the ESD discharge process. A common failure is neglecting to discharge the entire surface, instead focusing on a small area and leaving other sections charged and ready to shock the next person who makes contact. The oversight is compounded by the fact while our static discharge tools may pass daily checks, components like cords and connectors can fail intermittently. These daily checks create a false sense of security, where a tool gives a safe reading, but the surface remains dangerously charged.

The ripple effects of an ESD incident extend far beyond the individual. A shocked maintainer requires a medical evaluation, sidelining them from their duties and creating a personnel gap in a critical work center. Each incident triggers a formal investigation, consuming valuable time and resources from the entire command. The investigations chip away at unit cohesion and morale, as the team must cover for their sidelined shipmate, all due to what is almost always a preventable event. In the worst-case scenario, an unexpected shock could lead to a fatal fall or other life-threatening injury.

The standard for preventing these incidents is clear, unchanging and documented in our procedures. Every maintainer must strictly follow established ESD discharge processes whenever an aircraft returns from a flight. It means using a fully operational and regularly tested static discharge kit to meticulously and patiently discharge the entire canopy and windshield surface. There are no shortcuts to safety.

An adherence to procedure must be reinforced through consistent, high-quality training emphasizing not just the “how” but the serious “why.” Every team member must understand the severe consequences of complacency and master the correct discharge techniques. Furthermore, leadership must foster a proactive safety culture where maintainers feel empowered to speak up without fear of reprisal. If a piece of gear appears faulty, if a process feels rushed or if there is any doubt whatsoever, every Sailor and Marine must have the confidence to pause, ask questions and ensure the job is done right.

While the fleet has seen significant improvement with zero reported ESD shock incidents in FY25, we cannot become complacent. The success is the direct result of a collective, renewed commitment to vigilance and procedural discipline. Leaders at all levels must remain visibly engaged in this safety effort, providing constant feedback and unwavering support to their teams.

“WARNING: To prevent death or injury to personnel from electrical shock, all windshield and canopy static must be discharged before personnel can safely touch the windshield or canopy. A high voltage (100,000 volts) static electrical charge may build up and be stored in the windshield and canopy during flight or when the aircraft is on deck and exposed to prolonged high winds.”

Moving forward, the Naval Safety Command will continue to monitor and analyze ESD-related incidents, while Naval Air Systems Command explores engineering solutions and potential equipment design modifications to mitigate static buildup at its source. However, the most effective solution remains in our hands, on our flight lines. Through diligent training, strict procedural discipline and a robust safety culture, we can protect our people and ensure fleet readiness. Let’s continue to work together to prioritize safety above all else.

EVERY WEAPON IS LOADED

SENIOR CHIEF AVIATION ORDNANCEMAN NILES MYGIND

The most prevalent factor in firearms accidents, including negligent discharges, is an operator assuming the weapon is not loaded. This single, dangerous assumption is the root cause of countless preventable mishaps, injuries and losses of life. In our profession, where the handling of firearms is a routine duty, we must recognize a significant number of these tragedies occur not in combat, but during administrative tasks like weapons cleaning and functional checks. They are the result of complacency and are entirely preventable.

This prevention begins with understanding a critical distinction: there is no difference between unloading and clearing a weapon. Unloading a weapon is simply one step in the process of clearing it. At no time should a weapon be considered “unloaded” until it has been fully and properly cleared. This mindset is the foundation upon which all safe-handling procedures are built.

Responsible weapon handling is the result of discipline, and discipline is forged by following four specific, universal rules. These rules are not optional guidelines; they are the absolute standard for safe and effective firearm handling in every environment, from the armory to the battlefield.

1. Treat every weapon as if it is loaded. This rule prevents any unintentional injury or damage. It is the default mindset of a professional.
2. Never point a weapon at anything you do not intend to destroy. This rule enforces constant muzzle awareness and reinforces the critical importance of positively identifying your target before the weapon is ever oriented toward it.
3. Keep the trigger finger straight and off the trigger until ready to fire. This rule is the primary mechanical defense against negligent discharge. It ensures the weapon fires only when there is a conscious decision to do so.
4. Keep the weapon on SAFE until ready to fire. This rule enforces the use of the weapon’s mechanical safety features and adds another layer of deliberate action required before the weapon can be fired.

Proper weapon handling is the personal responsibility of every individual in control of a firearm, and it is the duty of leadership to enforce these standards without exception. Leaders must ensure muzzle orientation is corrected instantly and all personnel treat every weapon as if it is loaded, always. This is especially true during weapons-clearing procedures, which should always be supervised, whether ammunition is present or not. When a clearing barrel is required, it must be used correctly and inspected annually to ensure its integrity.

This culture of safety extends beyond the range. Leaders must ensure controls are in place to prevent the mishandling of weapons in living and sleeping areas, where distractions like televisions and phones can lead to deadly lapses in concentration. The process must be ingrained through pre-deployment training and reinforced at every opportunity.

Beyond the universal rules, a professional must possess weapon-specific knowledge. An M9 service pistol, a closed-bolt weapon, operates differently from an M240 medium machine gun, an open-bolt weapon. Understanding these mechanical differences, along with the standard weapon condition codes describing a weapon’s readiness to fire, is a hallmark of a true expert.

The circle of responsibility begins and ends at the armory. Armors must verify every person is authorized to bear arms and they must visually inspect every weapon to ensure it is clear of ammunition before issue and upon turn-in. Weapons should always be issued with the stock first, muzzle elevated, action locked to the rear and safety engaged.

These procedures are not formalities; they are the layers of discipline and professionalism preventing accidents. By internalizing the four universal safety rules and adhering to a culture of strict procedural compliance, we can eliminate preventable firearms mishaps and protect our most valuable asset: our Sailors and Marines.



Safe for Flight Signatures

MASTER GUNNERY SGT. JEROD WILLIAMS

Within Maintenance Control, few responsibilities carry more weight than the certification of an aircraft as Safe for Flight (SFF). As defined in the COMNAVAIRFORINST 4790.2E, Naval Aviation Maintenance Program, this certification and its subsequent acceptance by the aircrew represents the final barrier between ground maintenance and flight operations.

The SFF certifier's signature is a promise and declaration the aircraft is mechanically sound, fully compliant and ready to safely execute its mission. However, despite clear procedural guidance, Naval Safety Command assessments continue to reveal this critical process is often undermined by recurring, preventable discrepancies.

The role of an SFF certifier is demanding. Working in the dynamic environment of Maintenance Control, they are constantly pulled in different directions, yet their primary focus must remain on the meticulous, step-by-step verification process.

This process begins with a comprehensive review of the Aircraft Discrepancy Book. All outstanding discrepancies must be verified for accuracy, correcting Equipment Operating Capability codes and proper maintenance status. Crucially, any downing discrepancies or flight safety quality assurance inspections must be fully signed off before release. It is in this fundamental area we see persistent errors including failures to verify a required Quality Assurance/Safety Observer certification has been completed before the SFF is issued.

The certifier's review must then extend to the aircraft's recent history and overall health. This means verifying all preflight, daily, turnaround and postflight inspections are completed and documented correctly. It also involves confirming the integrity of the fuel system, a check frequently documented improperly. A common assessment finding is missing

or incorrect documentation of fuel samples on daily and turnaround inspection records. Likewise, the SFF certifier is responsible for reviewing engine and gearbox oil consumption records to ensure rates are within established limits—another step often overlooked.

Beyond the aircraft itself, the SFF process demands a review of all supporting data. The certifier must ensure the aircraft's Weight and Balance form is current, yet failure to update or verify this form remains one of the most common discrepancies found during assessments.

Similarly, certifiers must confirm there are no overdue Technical Directives by cross-referencing outstanding reports with the Maintenance Master Plan, a check that is sometimes missed. The status of personal Aircrew Life Support Systems for the scheduled aircrew must also be validated, another area where lapses in verification have been noted. These seemingly administrative tasks are critical safety checks.

Contributing to these errors is a documented lack of required follow-on training for SFF personnel. The certification is not a one-time qualification; it is a skill that must be maintained through continuous learning and a deep, abiding attention to detail. The complexity of the Maintenance Control environment makes procedural discipline not just important, but essential.

In conclusion, the common discrepancies found in the Safe for Flight process are rarely due to complex technical failures. They are lapses in discipline, documentation and diligence.

Mastering the SFF certification is about more than knowing the steps; it is about embracing the immense responsibility that comes with the signature. By holding ourselves accountable to the rigorous standards outlined in our governing instructions and fostering a culture of meticulous attention to detail, we ensure our final promise to the aircrew is one of absolute safety and mission readiness.

ENHANCING AIRFIELD SAFETY

AVIATION STRUCTURAL MECHANIC
1ST CLASS ALEX AYOTTE



Taxiway incursions continue to represent a critical safety hazard in airfield operations. Maintaining rigorous situational awareness and ensuring clear, unambiguous communication with Air Traffic Control (ATC) are paramount to preventing accidents and operational disruptions.

A recent incident involving a ground vehicle team at a naval air station underscores the inherent risks of taxiway navigation, particularly in environments complicated by construction activities and temporary route alterations.

During routine preparations to support aircraft operations, a ground vehicle team was tasked with transporting personnel to the hot pit fueling area. Upon departing the ramp and proceeding toward the air terminal, the team sought to obtain clearance from the control tower to cross taxiway ECHO en route to their destination via taxiway JULIET. The control tower granted clearance to cross taxiway ECHO but redirected the team to use taxiway GOLF instead of JULIET.

The team acknowledged and complied with the revised instructions. However, while proceeding toward the indicated taxiway, they encountered active construction zones. An initial set of barriers was spaced wide enough to permit vehicle passage, but a subsequent barrier—marked by a string and clearly indicating closure beyond that point

—necessitated an immediate reversal to avoid unauthorized entry into the construction area.

Following the event, the team was instructed to report to the Operations Duty Officer for further discussion and procedural review.

SAFETY CONCERNS AND IMPLICATIONS

The incident highlights several critical safety concerns:

- 1. Risks of Taxiway Incursions**
Taxiway incursions—defined as unauthorized presence on a protected taxiway—pose a substantial risk of collision, equipment damage and operational delays. The presence of construction zones compounds these risks by altering normal traffic patterns and increasing the likelihood of navigational errors.
- 2. Balancing ATC Communication with Ground Situational Awareness**
While clear and effective communication with ATC is essential, it must be complemented by rigorous situational awareness. Blind reliance on verbal instructions, without concurrent verification of physical signage and barriers, may lead to hazardous misinterpretations.
- 3. Navigating Construction Zones**
Construction activities on airfields introduce dynamic and sometimes ambiguous conditions. Temporary

route changes, modified signage and barriers demand heightened vigilance from all ground personnel to ensure compliance with safety protocols.

4. Verification and Confirmation Protocols

To mitigate risks, personnel must be encouraged to verify route signage and physical indicators, even when following direct ATC instructions. In cases of ambiguity, seeking clarification before proceeding is critical to maintaining safety.

RECOMMENDATIONS FOR ENHANCED SAFETY

This incident underscores the importance of continuous training focused on taxiway navigation, particularly in complex environments impacted by construction or temporary alterations. Airfield personnel must foster a culture of proactive vigilance, integrating compliance with ATC instructions alongside real-time environmental assessment.

Ultimately, maintaining safety on the airfield is a shared responsibility between controllers and ground crews.

By reinforcing awareness of taxiway incursion risks and adherence to verification protocols, the likelihood of incidents can be significantly reduced, thereby safeguarding personnel, aircraft and infrastructure.





HOUSEKEEPING IS MISSION-CRITICAL

SENIOR CHIEF AVIATION MACHINIST'S MATE WILLIAM K. HALL

Nearly every technician has experienced it: a division leader enters the work center and their focus immediately lands on its state of disorder. We comply with the direction to clean up, often begrudgingly, but the scene repeats itself days or weeks later.

As leaders, we must look past the surface and ask a more critical question: why does the clutter cycle persist? How much valuable time is wasted daily due to poor housekeeping? Is the root cause a lack of personnel, time or a fundamental lapse in professional integrity?

The truth is most technicians want to perform their jobs well. However, good habits are not automatic; they are the product of engaged leadership and an unwavering commitment to professional standards. This begins with understanding why a clean and orderly workspace is mission critical. Housekeeping in naval aviation is not about appearances; it is the deliberate practice of maintaining a controlled, hazard-free environment where complex and dangerous work is performed. Our hangars and work centers are not casual spaces. They are professional, high-risk areas where the standards we keep on the deck directly impact the safety and readiness of our aircraft in the air. This discipline is most critical in our daily management of foreign object debris (FOD) and hazardous materials (HAZMAT).

FOD prevention is rightfully designated as an all-hands effort but this responsibility must be driven by a professional mindset, not just rote compliance. This practice demands we treat our workspaces as an extension of the aircraft itself. FOD "walkdowns" are not a chore to be rushed through but a vigilant hunt for anything that could be ingested by an engine or puncture a tire. These walkdowns necessitate work centers and hangar bays being swept regularly, not just when a space looks cluttered, but as a continuous practice to remove hazards. A single misplaced washer, screw or piece of safety wire can work its way into a flight control or engine bay leading to a catastrophic failure at 30,000 feet. This is why disciplined tool control and the proper labeling and storage of every component, no matter how small, are pillars of our profession.

Similarly, our management of HAZMAT is a direct reflection of our discipline. Every day, we work with oils, solvents and paints posing serious risks to our health and the environment. A professional maintainer understands strict adherence to

HAZMAT protocols is a job requirement. It includes ensuring all substances are stored in designated, clearly marked containers and segregated by compatibility to prevent dangerous chemical interactions. It means knowing where Safety Data Sheets are and reviewing them before use or stowage. HAZMAT adherence also means having a clear spill response plan in place because the time to figure out procedure is not after a hydraulic line breaks. Proper HAZMAT discipline is a sign of respect for our shipmates, equipment and shared workspace.

Ultimately, a persistent housekeeping problem is a leadership problem. The standard is either set or broken by our leaders on the deck. When a supervisor, collateral duty inspector (CDI) or quality assurance representative (QAR) walks past a disorganized toolbox, an undocumented HAZMAT container or a cluttered work area, their silence signals acceptance. This is where the three pillars of enforcement must stand firm:

- The supervisor is the first line of defense. They own the daily culture of the work center. Their role is to teach the "why" behind the standards and to make immediate, on-the-spot corrections. They ensure their team has the time and resources to do the job right, which includes cleaning up properly.
- The CDI and QAR are the formal checks on that culture. Their responsibility extends beyond the quality of the repair to the integrity of the entire maintenance process. They must have the fortitude to halt a job not only because the repair is wrong but because the work environment is unsafe or non-compliant. Their signature verifies the standard was met and that standard includes a clean, FOD and hazard-free site.

A disciplined housekeeping culture yields tangible results. The culture increases safety by preventing accidents. A discipline culture improves efficiency, as technicians can quickly locate tools and parts. Most importantly, proper housekeeping enhances aircraft readiness by preventing costly delays and repairs resulting from FOD and other preventable mishaps. A disciplined culture is about taking pride in our workspace because we have pride in our work. For the love of the aircraft, let's ensure the environment where we maintain them is as professional and mission-ready as the platforms themselves.

BEYOND RUBBER & RIMS

SENIOR CHIEF AVIATION STRUCTURAL MECHANIC JOEY CABRERA

Few tasks appear as routine as servicing a tire and wheel assembly. Yet, as any seasoned maintainer on the flight line or in the I-level shop knows, this perception is a dangerous illusion. Tire and wheel maintenance is one of the most unforgiving jobs in our community, involving immense stored energy, heavy components and the potential for catastrophic failure. Being “smart” in this environment is not about intellect; it’s about a disciplined mindset combining technical knowledge, unwavering attention to detail and a deep respect for the inherent dangers of the task.

Naval aircraft tires are engineered for extremes. They withstand blistering speeds, crushing loads and the violent cycle of catapult launches and arrested landings. Consequently, the internal pressure of an inflated assembly can exceed several hundred PSI, which is enough energy to kill instantly if the wheel fails. This is where a smart maintainer begins: with respect. Complacency is the catalyst for accidents; professional respect for the hazard is what prevents them.

This respect is demonstrated long before a tool ever touches a wheel. It starts with an absolute commitment to the technical manuals. The Naval Aviation Maintenance Program and the applicable maintenance instruction manuals or maintenance requirement cards are not suggestions; they are the baseline for survival. A smart maintainer knows the book, follows it step-by-step and verifies each stage of the process. Even a seemingly minor deviation, such as using the wrong gauge, skipping a torque check or failing to verify a part number, introduces a potentially fatal flaw into the assembly.

One of the most critical phases is de-arming the stored energy by deflating the tire. Smart maintainers treat every tire as if it is fully pressurized until they personally verify it is not. They use the approved tools and stand clear of the potential trajectory path, knowing that a misaligned valve core or a seized plug can turn a routine action

into an explosive event. In this job, intelligence means assuming nothing and confirming everything.

This discipline extends to the proper use of the tire cage, our primary defense against a catastrophic failure during inflation. Using the cage is not enough; using it correctly is what saves lives. A smart maintainer ensures the assembly is properly positioned, the restraining bars are secured and they stand clear of the danger zone during inflation. They use calibrated gauges, inflate slowly and listen for any abnormal sounds. Cutting a corner here is to gamble with the lives of everyone in the shop.

Cleanliness and a methodical inspection process also separate the professional from the careless. Every wheel assembly contains mating surfaces, O-rings and bearings that must be inspected, not just looked at. A smart maintainer uses proper lighting and magnification, searching for the subtle signs of corrosion, cracks or contamination that could lead to failure under load. When something looks questionable, they do not talk themselves into accepting it; they have the integrity to escalate the issue, because no flight schedule or perceived pressure outweighs the responsibility to ensure a component is safe.

Finally, being smart means embracing teamwork. A second set of eyes from a quality assurance inspector is not a hurdle; it’s an added layer of protection. Smart maintainers communicate clearly, embrace oversight and value the verification ensuring a mistake is not missed.

When you maintain a tire and wheel assembly, your work has a direct impact on the safety of pilots, aircrew and everyone on deck. A tire blowout on takeoff or a wheel separation on landing can lead to the loss of an aircraft and its crew. That sobering reality should sharpen your focus and elevate your standards. In Naval aviation, smart maintenance is safe maintenance and it is performed by professionals who understand their discipline protects lives.

A close-up photograph of a man in a dark blue military uniform, likely a pilot or maintenance officer, focused on writing in a notebook. He is wearing a silver watch and has a tattoo on his left forearm that reads "Jehann". The background is a blurred office or control room environment with blue lighting.

IT IS NOT JUST PAPERWORK

SENIOR CHIEF AVIATION MAINTENANCE
ADMINISTRATOR JESSE L. MILLER

BRAVO ZULU

SAILORS, & MARINES PREVENTING MISHAPS



STAFF SERGEANT ERIC J. QUATTROCHIO
*CENTER FOR NAVAL AVIATION
TECHNICAL TRAINING UNIT
MCAS NEW RIVER JACKSONVILLE,
NORTH CAROLINA*

Staff Sgt. Eric J. Quattrochio had exceptional attention to detail and a proactive approach to safety during a CH-53K Practical Job Trainer (PJT) offload. Upon noticing the drag struts were disconnected, indicating the aircraft's landing gear was secured only by safety pins, Quattrochio immediately recognized the potential for catastrophic failure. He swiftly took decisive action, directing Marines to establish a safety perimeter around the PJT with ropes and warning signs, preventing personnel from entering the area until the drag struts were reattached and thoroughly inspected. Quattrochio's quick thinking and diligent response effectively mitigated a hazardous situation, potentially averting serious injury, loss of life and significant damage to the aircraft. Quattrochio's commitment to safety and unwavering vigilance is truly commendable.

Bravo Zulu, Staff Sgt. Quattrochio.

Bravo Zulu is a naval signal originally sent by semaphore flags and simply means "Well done."

For many maintenance managers, few events are as intrusive or stressful as aircraft acceptances or transfers. The process, as outlined in the Naval Aviation Maintenance Program, is far more than an administrative hurdle. It is a fundamental act of establishing a baseline of trust, ensuring airworthiness and formally passing the torch of accountability from one command to another. Its entire purpose is to verify the material condition, configuration and documentation of an aircraft before it is flown by the new units' pilots.

The process begins with the physical aircraft inspection, a comprehensive look requiring your most experienced personnel. By using detailed Wing checklists to scrutinize the airframe, engines and all associated systems, this is where you establish the baseline. This is more than a walk-around; it is a deep dive. It includes performing daily inspections, taking hydraulic samples, visually verifying every cartridge actuated device and conducting a full inventory of all equipment listed on the Aircraft Inventory Record. When required, a functional check flight (FCF) serves as the ultimate validation of the aircraft's condition.

However, the physical aircraft inspection is only half the battle. The true test of an aircraft's history and integrity lies within its records. This is a meticulous validation of logbooks, historical files, weight and balance data, and technical directive compliance. It demands a focused verification of serial numbers for all interval-tracked components. The aircraft does not need to be torn apart; initially, only the panels required for a daily inspection need to be opened.

However, if this initial verification reveals significant mismatches with the records, the maintenance officer must determine if a deeper inspection is warranted to verify the condition of flight-critical components. Any new discrepancies discovered during this process must be properly documented.

Finally, the inspection formalizes accountability. For aircraft coming from depot-level work, such as Phased Depot Maintenance, this accountability takes the form of an Acceptance Inspection Deficiency Report (AIDR), submitted via the Joint Discrepancy Reporting System. The AIDR is the report card back to the depot but it must be used correctly. It is only for deficiencies directly attributed to the rework or manufacturing process. It is not a catch-all for pre-existing issues. This critical report must be submitted within five calendar days of completing the acceptance FCF. Ultimately, these inspections are critical checkpoints and are our best opportunity to identify and address potential issues before they escalate into something far more serious on the flight line.

To the maintenance managers, give your maintainers and records clerks the time they need to do this intrusive, stressful and vital job correctly. Trust them to perform a thorough inspection and give them the tools and support required to deliver a safe and reliable aircraft to the flight line. The mission depends on it.

BRAVO ZULU

SAILORS, MARINES & COAST GUARDSMEN
PREVENTING MISHAPS



AVIATION MAINTENANCE TECHNICIAN
SECOND CLASS HUNTER SIMPSON
USCG AVIATION TRAINING CENTER
MOBILE, ALABAMA

During an early morning pre-flight inspection of a U.S. Coast Guard MH-60T helicopter, Aviation Maintenance Technician Second Class Hunter Simpson discovered a small screw wedged in a critical tail rotor flight control cable pulley. Recognizing the potential severity of the situation, Simpson immediately notified maintenance control and grounded the aircraft.

Simpson initiated a comprehensive inspection to determine the errant screw's origin and assess any potential damage to the flight controls. His meticulous investigation revealed the screw had dislodged from the tail rotor de-ice harness bracket due to a loose anchor nut, which required replacement. Simpson's attentive pre-flight inspection and experience with the MH-60T's systems allowed him to identify the problem before any flight control movement occurred.

Simpson's critical discovery prevented a potentially catastrophic mishap or severe component damage and safeguarded the aircraft and its crew.

Bravo Zulu, AMT2 Simpson.

Bravo Zulu is a naval signal originally sent by semaphore flags and simply means "Well done."

READIN

The Individual Material Readiness List (IMRL) is far more than a program binder overflowing with faded inventory pictures. It is the dynamic system serving as the backbone of aviation maintenance, encompassing every resource required to support our aircraft. From essential spares and specialized tools to calibrated test equipment and vital support gear, the IMRL is designed to ensure the right materials are in the right place, at the right time. Its effectiveness directly impacts mission readiness.

As a young Sailor, the profound importance of being the IMRL Petty Officer was utterly lost on me. I vividly remember the barely contained fury on my Maintenance Master Chief's face during my first maintenance officer wall-to-wall inventory. I had painstakingly arranged every item on the deck, polished and looking perfect. But they were not in the precise order detailed on the Local Asset Management System (LAMS) report. That look of crushing disappointment seared into my brain the importance of a meticulously organized inventory.



Aviation Machinist's Mate Airman Logan Sukanen aboard USS Gerald R. Ford (CVN 78) torques bolts on an F/A-18 Super Hornet engine in the ship's jet shop in the North Sea, Aug. 25, 2025. (U.S. Navy photo by Mass Communication Specialist Seaman Jarrod Bury)

ESS IS A LIST

SENIOR CHIEF AVIATION ELECTRONICS TECHNICIAN KENNETH KING

However, I soon realized I had learned the superficial lesson but missed the critical one. What was glaringly absent from my focus was whether the status codes on the LAMS report matched the equipment's actual, real-world condition. It was not until those items were needed and a critical task was halted for lack of a specific tool that we would discover the true, often disappointing, state of our gear.

That embarrassing experience revealed the real value of IMRL: it lies not in knowing what you have on paper, but knowing what is ready for immediate use. An accurate status code is a promise. An item marked "operable" must function flawlessly when a mechanic reaches for it in the middle of a high-pressure repair. If it does not, valuable time may be lost, the mission may be delayed and a replacement part may be thousands of miles away in a distant supply depot.

However, accurate status codes are only half the battle. An IMRL correctly identifying broken gear is just a list of problems; a professionally managed IMRL is a plan of action. The second, vital part of the job is to proactively make equipment serviceable again. This means initiating repair requests promptly, diligently tracking down replacement parts, accurately managing calibration schedules and consistently following up to ensure equipment is returned to service as quickly as humanly possible.

This proactive, vigilant approach is essential for maintaining peak operational readiness. It minimizes costly downtime and, most importantly, ensures safety in our flight operations.

The IMRL is not a passive list to be managed; it is a critical warfighting function to be executed with professional diligence. It is the unsung hero keeping our aircraft in the sky.



PRESSURE IS NOT AN EXCUSE

SENIOR CHIEF NAVAL AIRCREWMAN JOHN CONANT

Do more with less is a phrase every Sailor has heard, often used with a sarcastic or joking tone. But, it should never be used as an excuse to cut corners or compromise standards. The pressure to perform in today's demanding operational environment is immense. For the Aviation Rescue Swimmer community, this pressure might manifest when a five-hour training flight gets cut

to four, while the number of jumpers in the aircraft doubles due to another helicopter going down for maintenance. This is the moment of truth — the point where a professional either succumbs to pressure or rises to meet it with discipline. This is where Risk Management and Threat and Error Management (TEM) become more than just acronyms; they become essential tools for survival. Specifically, the TEM model provides a framework for understanding the relationship between safety and human performance in dynamic environments and is comprised of three components: Threats, Errors and Undesired Aircraft States (UAS).

A Threat is any condition increasing the complexity of an operation and has the potential to negatively impact safety. This can be a sudden storm, an aircraft malfunction or something more subtle, like a poor command culture or normalized deviation.

For example, if you are recovered from the water and the aircrewman does not close the cabin door because “we’re in a hurry and we do it like this all the time,” you have just encountered a threat. It is your responsibility to manage that threat by insisting procedures are followed, thereby preventing it from becoming an error.

An error is an action (or inaction) leading to a deviation from established standards or intentions. An unmanaged threat can lead to an error. In the rescue swimmer world, this could be improperly placing a survivor in the rescue strop by failing to apply the safety straps. In the maintenance world, it could be using a tool overdue for calibration because the “right” tool is on the other side of the hangar.

Safety checks exist for one reason: to catch these errors before they escalate.

A UAS is the final stage before a mishap occurs. It is the last opportunity to recover. If a rescue swimmer fails to notice the unapplied safety straps and gives the “ready to be hoisted” signal, they have just put themselves and the survivor into dangerous positions. They must use the “stop hoisting” signal immediately to break the chain of events.

On the hangar deck, a UAS could be a maintainer signing off on a job where a critical component was installed using an uncalibrated tool. In this case, the Collateral Duty Inspector or Quality Assurance Representative are the last chance for recovery. They must catch the error before that aircraft is certified Safe for Flight.

The TEM model is a powerful tool and applies to every rating. We operate in demanding environments where pressure is constant. That pressure, real or perceived, is not an excuse to deviate from the standards written to keep us safe. It is a test of our professionalism, discipline and integrity. Managing threats and correcting errors is your responsibility whether you are in the back of a helicopter or turning a wrench on the flight line. Pressure is not an excuse; it is a test of our professionalism. Let’s make sure we pass it every time.



Sgt. Esteban Rodriguez, left, a fixed-wing aircraft mechanic, and Cpl. Mitchel Chepkcech, a fixed aircraft safety equipment mechanic, with Marine Fighter Attack Squadron (VMFA) 232, conduct routine maintenance at Kunsan Air Base, South Korea, Oct. 16, 2025. (U.S. Marine Corps photo by Lance Cpl. Isabella Mancini)

DOCUMENTATION IS DOCTRINE

GUNNERY SGT. DAVID COX

Like safety, maintenance documentation is an all-hands effort. Whether you're a brand-new airman just learning to log into Optimized Organizational Maintenance Activity, a seasoned maintenance controller preparing for a meeting or a Quality Assurance Representative (QAR) screening a post-phase aircraft, meticulous documentation is vital to the warfighting capability of every squadron. Effective management of time, resources and personnel is what makes a good maintenance department great and it all begins with the digital trail we create.

It is imperative to accurately account for and document every minute spent on a maintenance task. This allows for streamlined communication between work centers and maintenance control, enabling leadership to set a solid maintenance plan with realistic timelines. To get safe and battle-ready aircraft in the sky: this is why we tackle the workload one job at a time.

Using your daily workload properly doesn't just help your own shop, it directly supports the "Keepers of Quality." Clearly articulating discrepancies, corrective actions and leaving detailed, in-process notes makes the life of every QAR easier. Whether they are screening an aircraft for a Functional Check Flight, investigating a mishap or helping you tackle those "ankle-biting downers," proper documentation provides them with the full picture. It gives our subject matter experts the information they need to improve an aircraft's material condition and get it back in the fight.

The best practices of a disciplined maintenance department are easy to spot. Work orders are signed off as they are completed, not when maintenance control asks for the thousandth time. Supervisors screen a fresh workload before every maintenance meeting, verifying times, parts status and system reasons. At a minimum, ad hoc reports are pulled at the beginning and end of every shift to ensure all tools and personnel are accounted for. This is the battle rhythm of a culture always "inspection ready," not just in the months leading up to an Aviation Maintenance Inspection.

Conversely, the trends leading to failure are just as obvious. Workload reports go missing. Discrepancies are not submitted upon discovery. The logs become filled with vague discrepancies and in-process notes are missing. These are not just administrative errors; they are symptoms of a breakdown in discipline. The Naval Aviation Maintenance Program makes it clear. Operating in accordance with our doctrine takes discipline, accountability and simply doing the right thing.

Ultimately, whether you are submitting status reports to a higher echelon or the maintainer turning the wrench, accurate documentation keeps everyone accountable. It is the administrative proof we are fixing and flying safe aircraft. It is the digital trail of trust giving every mechanic, aircraft captain and aircrew member the peace of mind the aircraft we put in the sky are not just ready but are truly safe to win our nation's battles.

Sgt. Sara Light, a fixed-wing loadmaster with Marine Aerial Refueler Transport Squadron (VMGR) 252, reviews paperwork at Marine Corps Air Station Cherry Point, N.C., Oct. 9, 2024. (U.S. Marine Corps photo by Lance Cpl. Mya Seymour)

INSENSITIVE IS GOOD

MR. AL BUDASZEWSKI

In naval aviation, being insensitive is a good thing. In fact, it is a life-saving necessity, especially when it comes to the ordnance we carry aboard our ships. When something goes wrong at sea, there is nowhere to run. That is why the weapons designed for use on our ships and aircraft must be engineered to withstand the unthinkable: high heat, rough handling or a fall from a weapons skid.

This was not always the case.

In July 1967, during the Vietnam War, a catastrophic chain reaction was ignited on the flight deck of USS Forrestal (CVA 59). When stray voltage fired a ZUNI rocket from an F-4 Phantom, it streaked across the deck and struck a parked aircraft, rupturing a 400-gallon fuel tank. Flames spread instantly. Just 94 seconds later, the intense heat cooked off a 1,000-pound bomb and the resulting detonation engulfed the flight deck in a tidal wave of fire and shrapnel. More explosions followed as other bombs detonated. The final cost was staggering: 134 Sailors dead, 343 injured and more than 50 aircraft destroyed.

A year and a half later, tragedy struck again aboard USS Enterprise (CVN 65) off the coast of Hawaii. This time, the hot exhaust of an aircraft starting unit was aimed directly at a launcher loaded with ZUNI rockets. The heat caused a warhead to detonate, rupturing fuel tanks and turning the flight deck into an inferno. As 500-pound bombs cooked off, 18 separate explosions ripped through the ship, blowing holes in the flight deck and allowing fire and fuel to spread to the decks below. When the fires were finally extinguished, 28 Sailors were dead, 314 were injured and 15 aircraft were lost.

The lessons from these two disasters, paid for with the lives of 162 Sailors, led directly to the development of the Insensitive Munitions program. To ensure this kind of tragedy never happened again, all munitions would now have to pass a brutal series of tests designed to prove they would not detonate when subjected to unplanned stimuli. Governed by Naval Sea Systems Command Instruction 8010.5C, this testing includes fast and slow cook-off, bullet and fragmentation impact, sympathetic reaction and shaped charge impact tests. A specific, direct lesson was also learned from the CVN 65 fire: aircraft starting unit exhaust must be kept a minimum of eight feet from ordnance and starter hoses were lengthened to 30 feet to enforce this new standard.

The sacrifices of those lost on CVA 59 and CVN 65 paved the way for the safer munitions we handle today. So, the next time you see an ordnanceman moving a bomb or loading an aircraft, remember the price paid to make that weapon as stable and safe as possible. As always, if you see something that is not right, take action. Say something.

Being insensitive can be a really good thing, especially when it saves lives.

Aviation Ordnanceman load ordnance onto an MH-60R Sea Hawk, attached to Helicopter Maritime Strike Squadron (HSM) 78, on the flight deck of the Nimitz-class aircraft carrier USS Carl Vinson (CVN 70) in the U.S. Central Command area of responsibility, June 9, 2025. (U.S. Navy photo by Petty Officer 2nd Class Isaiah Goessl)



Have a story for MECH Magazine?

SUBMISSION GUIDELINES

When submitting articles and photos, please include:

TITLE: Proposed headline.

AUTHOR INFO: Rank, first and last name, unit, squadron, command or organization.

ARTICLE: The Naval Safety Command is interested in stories from our readers of near misses, accidental adventures or “there I was” events from your perspective. By sharing stories of our misadventures, we can learn from each other and “Get Real, Get Better” together.

Authors should check facts and ensure statements are backed by references or sourced data. Spell out acronyms on first reference. Include and spell out all organizations and units, city, state or country. Authors should ask a team member and/or subject matter expert to review article before submitting. NAVSAFECOM and/or CMC SD will make additional changes for clarity and style during the review process. Article length should be 450-1600 words.

PHOTOS: All photos must be sent as separate files (not included in a word doc) and approved for public release. Images should adhere to established safety and security policies. Images should be the original file with minimum 1 MB size. Include a full description, photographer’s rank, first and last name, unit, squadron, command or organization, the location and the date the photo was taken.

BRAVO ZULU: BZ submissions should include details about managing risks or a near miss. Include the rank, first and last name, unit, squadron, command or organization. Length should be 90-150 words and include a photo.

SEND TO: navsafecom_mech@us.navy.mil

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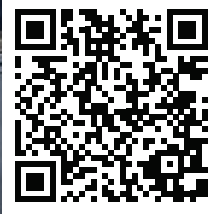
Front Cover: A Sailor, assigned to the Iwo Jima Amphibious Ready Group maintains an MH-60S Sea Hawk helicopter on the flight deck of USS Iwo Jima (LHD 7) while underway in the Caribbean Sea, March 10, 2026. (U.S. Navy photo by Mass Communication Specialist 3rd Class Andrew Eggert)

Back Cover: Sailors assigned to the Iwo Jima Amphibious Ready Group, perform maintenance on the rotors of an MH-60S Seahawk helicopter on the flight deck of USS Iwo Jima (LHD 7) while pierside in Ponce, Puerto Rico, Jan. 16, 2026. (U.S. Navy photo by Mass Communication Specialist 3rd Class Andrew Eggert)





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