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Mishaps cost time and resources. They take our Sailors, Marines and civilian employees away from their units and workplaces and put them in hospitals, wheelchairs and coffins. Mishaps ruin equipment and weapons. They diminish our readiness. This magazine's goal is to help make sure that personnel can devote their time and energy to the mission. We believe there is only one way to do any task: the way that follows the rules and takes precautions against hazards. Combat is hazardous; the time to learn to do a job right is before combat starts.

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Marines assigned to VMM-263 perform maintenance on an MV-22B engine aboard USS *Bataan* (LHD 5). Navy photo by MCSN James Turner.

Front cover: A Harrier jet aircraft assigned to VMA-542 returns to USS *Kearsarge* (LHD 3) for fuel and ammunition resupply. Marine Corps photo by LCpl. Michael Lockett.

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The Blame Game!

By AM1 Russell Lons

It was a typical July morning at Tinker AFB, home of the mighty E-6B Mercury. I came in to work, grabbed the passdown log and started to receive the morning passdown from the mid-check supervisor. He told me that our detachment at Travis AFB, California, had found our aircraft, 408, with two panels off. The panels, which are checked during the 14-day inspection, were dangling by safety wire from the topside of the wing (during the 14-day inspection, these panels are safety-wired together to keep them from falling into the void in the wing).

I thought, "I can't believe the det did a 14-day, left the panels off, and sent the bird flying. What type of maintenance are they doing out there?"

I went into maintenance control to get the latest and learned that the det hadn't done a 14-day. The last 14-day was completed here at Tinker by my shop, seven days prior.

I began piecing together all the events of the last week. Our airframes shop here at Tinker had done a daily inspection of 408 on 6 July. The aircrew came in on 9 July and took custody of the jet, which included doing a thorough walk-around inspection prior to "buying" the jet. On 11 July, the aircrew did another pre-flight inspection before flying a 9.2-hour flight to Travis AFB. Once there, another daily was done, this time by det maintenance; that's when they found the panels hanging on by said safety wire.

"There were way too many eyes and too many evolutions on that aircraft before this was discovered,"



I thought, “There’s no way this happened at Tinker. It must have been something one of the det guys did.” I reasoned that the det must have taken the wrong panels off for something else and forgot to put them back on, or, maybe they just got their tail numbers mixed up and pulled the panels off 408 thinking it was another jet.

My next course of action led me out to the hangar bay to show the maintenance master chief the panels in question; I also ran my theory of a det screw-up by him. He wasn’t so sure. I was determined to do more research.

I called the flight engineer who flew the aircraft to Travis and asked him what had happened out there. He said that initially he thought the same thing I did. He told me that he and the det QAR had retraced their steps looking for anything that might point to the panels being pulled off at the det. They sifted through all passdown logs and tool logs, and they talked to det personnel about anything that would have led to the those panels being removed. They came up empty. They believed that there was no possible way that any of the det personnel would have been on the wings of that aircraft. I realized that now the blame was probably on my guys and me.

I went back to review the evidence, focusing on discovering where the process could have taken a detour. I talked to the CDI whose name was on the completed 14-day MAF. According to him, he had looked at the panels before he signed the MAF, ensuring they were secure.

Aircraft 408 had a technical directive (TD) incorporated here at Tinker. It had required a lower set of panels be removed (not the usual, 14-day “upper” panels). I then asked the CDI if he’d looked at those upper panels when he signed the MAF. His answer: “No, the panels were not listed in the TD to be removed, so I didn’t check to see if those panels were off.” When I spoke with his worker, the mystery began to unravel.

When the panel work began during a previous shift, the worker (before starting the task) asked his CDI for verification. “Which ones I am supposed to remove?” he asked.

“The 14-day panels” said the CDI. So there it was—the worker was misled, the wrong panels had been removed.

Because of the mix-up, the right ones (the ones that were supposed to be removed per the TD) were checked by the next shift’s CDI. Of course, those panels were good because they hadn’t been touched. Meanwhile, there were two open panels on top of the wing that went unnoticed. As you may have guessed, some fault also lies with the CDI’s handling of the in-process TD MAF. Had the in-process MAF been more precise, the oncoming shift would have known which panels had been removed (and which ones hadn’t). Basically, the next shift’s CDI was operating in the blind and had no reason to inspect the 14-day panels. The work center pass down between shifts came up short, too.

Overall, this incident gave us all reason to pause and rethink how we were doing things at VQ-3. Fortunately for us, it was a cheap lesson in the importance of everyday maintenance actions. 

Petty Officer Lons works in the airframes shop at VQ-3.

Analyst’s Note: The NAMP specifies the duration of daily and turnaround inspections, as well as the requirements to reissue them following any major maintenance. There is a specific sequence to follow, between maintenance (scheduled or otherwise), turnarounds and daily inspections, pre-flights, and actually flying the aircraft. As the author notes, there were multiple missed opportunities for someone to discover the loose panels prior to the flight to Travis AFB.

ROTOR HEAD HEROES

By Lt. Brian Cush

HSL-49, Det. 3 faced its share of maintenance challenges during deployed counter-illicit-trafficking operations aboard USS *Jarrett* (FFG-33). One such challenge turned out to be a great example of how effective risk management can solve complex problems.

During a phase maintenance inspection, maintainers discovered corrosion lining the swashplate guide-assembly below the uniball.

THE FIRST OPTION REQUIRED REMOVAL OF ALL ROTOR HEAD SUB-ASSEMBLIES TO REDUCE THE WEIGHT TO BELOW THE 750-POUND LIMIT FOR THE MANUALLY-OPERATED HANGAR OVERHEAD CRANE.



Navy photo by MC3 Jared Hill.

The corrosion was so bad that they had to remove the assembly, which fits over the main rotor shaft and rests on the top of the main gear box. Removing this component also requires the removal of the rotorhead hub.

How do you safely remove a 1,500-pound rotor head with the limited crane facilities available while underway on a frigate? During shore-based operations, this rarely poses a problem. Overhead cranes in the squadron hangar are more than capable of lifting the rotor head and are maneuverable enough to swing the load away from the aircraft. This wasn't the case aboard *Jarrett*.

In an effort to get out in front of the risks we faced, we consulted maintenance support facilities in San Diego. Our squadron QA shop came up with two courses of action.

The first option required removal of all rotor head sub-assemblies to reduce the weight to below the 750-pound limit for the manually-operated hangar overhead crane. The second option: Use the overhead-mounted J-bar davit to lift the fully assembled rotor head from its station. However, the J-bar davit was unavailable, so option No. 2 was scrapped.

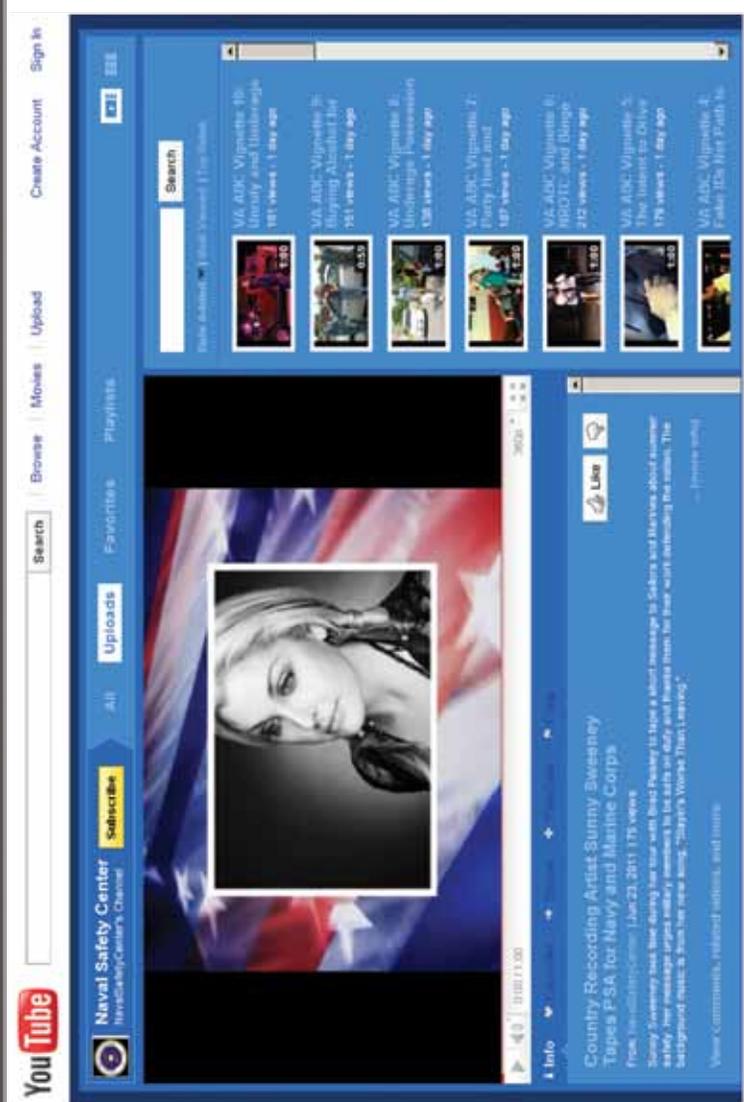
Our ADs removed the various sub-assemblies (four spindle assemblies, the bifilar weight assembly, dampers, and the main rotor head accumulator). We assessed the increased risk of removing a rotor head in the confined space of the hangar. If the heavy load began to swing while suspended from the crane, it could injure somebody if it hit them.

Our plan was to lift the rotor hub, traverse the helicopter aft, position the rotor stand beneath the suspended rotor head, and lower the rotor head onto the stand. After analyzing the risks of this evolution, we put several controls in place.

To mitigate the hazard of a swinging load, the ship remained at "amber" deck for the entire evolution. A steady course and no speed changes helped to minimize rocking of the ship and oscillation of the suspended rotor hub. We also had two line tenders stabilizing the rotor head. Safety observers did not allow personnel within ten feet of the suspended load.

We were smart about how we supervised personnel. Our maintenance leadership assigned specific personnel to each activity (one team for the aircraft move and another for the crane operation). As an extra precaution, each evolution had its own designated safety observer. As always, we briefed the sequence of events for each evolution so everyone knew exactly what to expect. The result: The evolution went smoothly. 

Lt. Cush flies with HSL-49.



Need a video for a presentation or safety stand-down?

Visit the new Naval Safety Center YouTube Channel at:
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Leading a Shipmate Astray



PR2(AW) Daniel Heideman

Recently, a shipmate of mine (I'll call him "Nugget"), who does not work on the flight deck but was working towards finishing his EAWS qual, asked if I could help him observe a turnover-inspection walk-through. Having just completed my own qual, I knew just where to send Nugget: the line shack. I thought nothing of it until the next day when he returned to my shop with the following story.

He had taken my advice, visited the line shack and found a PC to escort him to the flight deck. The line crew suited him up in their "best" gear: a float coat, a cranial, and a pair of the sweatiest leather gloves they could find. After a quick once-over, he was led up to the deck, in the middle of flight schedule, at night.

Our jets are well-maintained and there were no problems during the turnover inspection. However, as maintainers were finishing up their work, Nugget was blown off the jet and onto the non-skid. He bumped his head, got some bruises and scratched his knee. But he didn't end his time on the flight deck. Instead, he continued to observe topside operations.

After the inspection, the flight-deck crew had to move the jet from the bow of the boat to the stern;

Nugget found out how big of a place the flight deck isn't. By this time, the flight schedule had come to a close and the deck was a mass of moving jets and tractors. The PC who had been in charge of Nugget now was busy riding brakes and left him standing on the deck. Nugget wasn't given much direction other than "follow the jet and stay out of the way."

Lucky for Nugget, an alert deck chief caught him before he further harmed himself. According to the chief, Nugget wasn't wearing flight-deck-appropriate pants, his cranial wasn't secured, and he had FOD in his pockets. Nugget had caught the chief's eye because he had almost run out in front of a tractor that was pulling another jet. This was the second of Nugget's safety snafus. The third would come later in the evening when he tripped over the No. 3 wire and was escorted off the flight deck with a nice cut on his shin.

Rates who work on the flight deck are familiar with its layout: They know where to be and when to be there, and they know what to do in the event of an emergency. Nugget didn't know any of this. "Stick with me" (or, "follow the jet and stay out of the way") isn't a safety brief—it's a mishap in the making. 🍀

Petty Officer Heideman works in the PR shop at VFA-137.

“Missin’ Something, Shipmate?”

Navy photo by MC3 Nicholas Hall.



By AME2 Eric Rosemore

It was mid-afternoon on the second day of CQ flights aboard USS *Abraham Lincoln* (CVN-72), and I was sitting in the shooter shack preparing to go do a preflight walk-around on aircraft 503. I put on my tool pouch, float coat, and cranial prior to heading out on the flight deck. An hour or so later, as I was taking a last look at the ejection seats, my flight deck chief asked me to come down off the jet so we could have a chat.

As soon as I got off the jet, he told me to inspect my float coat and see if I was missing anything. I quickly realized the inflator assembly kit was missing. The chief sent me to Maintenance Control, where my division LCPO was waiting for me. He handed me the retaining nut that holds the inflator kit in the float coat and asked, “Where is the rest of the inflator kit?”

After I replied, “I don’t know,” he told me to retrace every step I had taken while wearing it.

Starting in the shooter shack, I walked everywhere I had been (including the head) but found nothing. On my return trip to Maintenance Control, my flight deck chief walked in from the flight deck with the inflator kit in hand (someone had found it during a FOD walkdown). The chief ordered me to fix my float coat and get back up on the flight deck to finish out the flight schedule.

Everything could have been avoided if I had just done a good pre-op of my float coat prior to leaving the shooter shack. The “what ifs” started eating away at me. What if I had gone overboard and couldn’t inflate the float coat manually? What if I had FODEd an aircraft?

Soon after this incident, I hosted a “float coat” quarters for the command where I demonstrated to the entire maintenance department the proper way to pre-op a float coat. I wasn’t the first person in the air wing to have lost a retaining nut or an inflator assembly kit. 🇺🇸

Petty Officer Rosemore works in the AME shop at VAQ-131.

"IT" HAPPENS

The photo below shows port engine access drop-down panel in the open position wedged against the sidewall of the airframe, (notice the un-secured fasteners).

I COULD HAVE
DONE SEVERAL
THINGS TO
PREVENT
THIS MISHAP.



By AM2 Stephen Loveless

While working the mid-shift on a typical busy night at the FRS, my working party was tasked with a routine operational check of the landing gear system following replacement of hardware on the launch bar. The night shift airframes shop already had placed aircraft 655 on jacks and completed the repair. As a CDI, I did a quick safety walk-around prior to the drop check. After hooking up the portable hydraulic test stand (T-15) to the aircraft, I completed an internal safety check and then attached the external electrical power cords. Aircraft 655 was up and ready for the operational drop check.

After getting an initial warm-and-fuzzy, I did one last quick walk-around while removing the landing-gear safety ground locks. Once I thought all was well, I instructed a fellow AM2 to turn on electrical power and a qualified airman to turn on the external hydraulics. I commenced the operational checks of the landing gear system by signaling the operator in the cockpit to actuate five half-cycles of the gear to ensure that there was no air in the hydraulic lines, as well as to verify proper operation of the system before fully raising the landing gear. With the initial checks successfully complete, everything seemed to be looking good.



The photo above shows the damage to the inner section of the port and starboard engine access drop-down panels.

The damage to the outer section of the port and starboard engine is clearly visible in the photo below.



I signaled for the personnel in the cockpit to take their hands off the controls for safety while preparing the launch bar system for operational and warning-light checks. After prepping the launch-bar system, I signaled for the landing gear to be fully raised. The landing gear moved to the up-and-locked position without any problems. After the cockpit operator lowered the landing gear, I inspected the launch bar system and again signaled for the landing gear to be raised once more while observing the launch bar system.

As the landing gear was in transition, I heard the sound of crunching metal and signaled for the gear to be immediately lowered. I looked over at the port landing gear and noticed that the engine access drop-down panel in the landing gear well hadn't been in its proper "up" position and was severely damaged. After securing hydraulics to the aircraft, I noticed that the starboard engine access panel had also been damaged severely. Unfortunately, these panels are very hard to come by in the Hawkeye community.

I could have done several things to prevent this mishap. I thought I'd done a thorough walk-around, although, in my haste, I hadn't. The fasteners that held the panels up in the wheelwell weren't fastened all the way. As the drop check proceeded, they came loose and fell open into the path of the landing gear.

A wise old first class once told me always to take a hands-on approach (literally putting your hands on items to be checked, not just a visual inspection) when checking tools or doing any kind of operational check on gear. He was right.

If I'd taken this approach preparing for the drop check, I would have found the loose panels and the damage would have been avoided. Unfortunately, I was too interested in trying to get the job done quickly. A few extra minutes worth of pre-op would have saved several man hours from an already task-saturated airframes shop and would have spared the Navy thousands of dollars in replacement parts. 🛩️

Petty Officer Loveless works in the airframes shop at VAW-120.

By LTjg Steven Moffitt

Draining fuel from the tanks of the E-6B Mercury is a routine and frequent task for the VQ-4 Line Division. It is a procedure practiced early and often by the squadron's newest Sailors, many of whom spend their first year in the line shack prior to joining their respective shops. The notion of a routine task practiced often by the least experienced personnel might raise a red flag or two in the minds of the more seasoned and experienced maintainers reading this; readers who know that sometimes the greatest danger lies in those mundane tasks done everyday. Such a stage was set on the morning of 22 August when the Line Division was tasked to "pencil drain" the No. 3 fuel tank of a E-6B in the hangar.

Sump draining, also known as pencil draining, is required to completely empty a fuel tank so that fuel cell maintenance can be done. The tank is first defueled by means of aircraft pumps, which are able to transfer the vast majority of the fuel. The remaining few hundred pounds in the tank sump, which is located beneath the pump intake, is emptied by manually opening a drain at the bottom of the sump and collecting those few hundred pounds in a small defuel tank known as a fuel "bowser". The fuel bowser is attached via a hose to the underside of the wing at the lowest point of the tank desired to be emptied. Since each wing on the E-6B contains three separate fuel tanks, inboard, outboard, and reserve, personnel pencil draining fuel must be cognizant of which tank needs to be drained. In this case, the fuel in the No. 3 fuel tank had been defueled and only contained a few hundred pounds of fuel in its sump. The adjacent No.

A Not So Routine Task

4 tank was nearly full, containing over 15,000 pounds of JP-8 fuel.

After being instructed to pencil drain the No. 3 fuel tank, a 3rd Class Petty Officer and an airman from the line shack took a fuel bowser and headed to the aircraft inside the hangar to begin the job. Being such a routine task, neither Sailor thought twice when they attached the fuel bowser's hose to the sump of the No. 4 tank. When the drain was opened, instead of a slow and controlled stream of fuel coming through the hose, the drain erupted under the weight of thousands of pounds of jet fuel in the No. 4 tank. The fuel quickly exceeded the capacity of the bowser and began leaking through the hose fittings.

Within seconds, jet fuel was flowing freely from the drain, drenching both of them and flooding the surrounding area with JP-8. The gushing fuel disoriented both, and they immediately found themselves unable to contain the spill. The pressure of the fuel overcame the protective goggles of the airman holding the fuel bowser spout, covering the Sailor's face and eyes with JP-8. After struggling to close the sump drain, the PO3 quickly escorted the injured airman to the nearest eye wash station. The airman was transported subsequently to Medical in order to ensure all the fuel had been properly flushed and that no significant injuries had been sustained.

Fortunately, neither one sustained permanent injuries and the fuel spill was quickly contained. Nevertheless, this incident highlights the ever present danger that can turn a routine task into something catastrophic. No doubt these two expected this job to be completed like so many times before. Perhaps if they had approached it with the same caution and careful apprehension they possessed the first time they did a pencil drain, this article would not have been written. Regardless of how experienced we are at doing a certain job, we must never forget the inherent danger that lurks under the guise of being cursory. 

Lieutenant Junior Grade Moffitt is the Assistant Line Division Officer at VQ-4.



Runaway Prowler

By AD2 Victor Taduran

It started out to be a great Monday morning in the work center. Everyone seemed to be excited for the upcoming command holiday party and the start of the holiday leave period. After the morning maintenance meeting, I was to start my day off right with two low-power turns (LPTs). The LPTs were to be conducted prior to taking 10-hour engine-oil samples from two EA-6B aircraft: tail numbers 500 and 503.

An LPT, I thought, is something I'm more than qualified to do. In preparation, I reviewed the ADBs for each aircraft, checked out the requisite equipment (turn screens, turn-screen straps, a NATOPS pocket checklist, and an oil servicing unit) and pre-op'd my gear. Afterwards, I headed out to the first aircraft, 500, with another mech from my shop.

As we approached the aircraft, we noticed technicians in the cockpit doing maintenance. It appeared the aircraft was not yet ready for a turn, so I suggested that we start with the other aircraft, 503, where there were no other maintainers working.

After inspecting the engine intakes for FOD, I installed the turn screens and continued my aircraft pre-flight inspection. I then climbed into the cockpit to complete my pre-start checklist, opening the PCL to the "starting malfunctions" page. Once I was ready, I signaled the PC that we were a "go" for the LPT.

After closing the canopies, I started the starboard engine. All gauges (rpm, oil pressure, hydraulic pressure, EGT and fuel flow) were within starting limits, which indicated a good engine start. Once I

completed my post-start checks, I started the port engine.

I was ready to advance the throttles to 75 percent, but the PC gave me a signal for "brakes on". I gave him a thumbs up that the brakes were engaged—a miscommunication on my part. What I didn't realize at the time was that the PC's signal was instead for an auxiliary-brake check. The PC wanted me to check the auxiliary-brake gauge because he noticed the aircraft had no tie-down chains and only one chock installed. We had both overlooked this prior to the evolution—the aircraft should have been chocked and chained. In fact, our maintenance instructions require us to have both mainmounts chocked and three tie-down chains installed prior to doing an LPT.

At this point, instead of stopping, we relied on the brake system to hold the aircraft with no back-up safety controls (chocks and chains) in place. Unaware of the miscommunication with the PC, I pressed on and advanced the throttle to 75 percent rpm.

Suddenly, the jet started to pull to the left. I panicked and tried to apply the brakes. Nothing. The jet kept moving. I moved the throttles to idle and extended the tailhook. The jet came to a stop, and I secured the engines.

My heart was still pounding when I noticed the jet had pivoted about 90 degrees between two other jets. Fortunately, no one was hurt and no aircraft were damaged. A by-the-book preflight inspection would have prevented all this. As I realized (after the fact, of course), I also had screwed up the PCL pre-start checklist: I failed to check the auxiliary-brakes hydraulic pressure, which, as it turns out, was near zero. ✦

Petty Officer Taduran works in the power plants shop at VAQ-142.



Planing Link Final Check

Cpl. Joshua Butler

A chilly morning aboard USS *Enterprise* (CVN 65) began with normal Powerline work center activities: sunrise servicing, cleaning canopies, pumping Auxiliary Power Units (APUs) and other tasks involved with getting aircraft ready for the first event of the flight schedule. I wasn't assigned to a specific aircraft so I decided to walk around the flight deck and lend a hand to the other plane captains in my shop.

After the morning FOD walkdown, it was time to launch aircraft. Pilots walked to their aircraft and completed their pre-flight walkarounds. We waited patiently for the intercom to announce the start for "Regular Go" aircraft launching in Event One. All around, APUs were clicking and the blood was pumping as the flight deck suddenly roared to life. I was standing next to a VMFA-251 Thunderbolt aircraft, 413, as the pilot and plane captain were doing their pre-launch procedures.

After the normal start-up routine, I saw the plane captain looking around for the final checkers. Using standard hand signals, I asked him if I could proceed with final checking 413. He gave me the thumbs up, so I started at the nose and proceeded down the right side of the fuselage. I made sure that the fasteners were tight, secured the safety wire on the nose tire, and checked for fluid leaks in the wheelwell. I continued around the right wing of the aircraft until finally making it to the right main landing gear. I inspected the tire then pulled and twisted the shrink link. All was well, and I did the same to the planing link. But as I pulled and twisted on this link, it fell limply and detached from the landing gear.

I was amazed because I had done hundreds of final checks in the past and had never seen anything like this. I immediately notified the plane captain that I was going to down the aircraft and that we needed to notify our flight deck coordinator to show him what had been discovered. Without hesitation, he agreed with my decision and called CAG Flight Deck Control to inform them that aircraft 413 wasn't going anywhere. Within a couple of minutes, there were fifteen to twenty Sailors and Marines wanting to see what had gone wrong.

I did not fully know the importance of my discovery until conversing with a few Airframe mechanics. They told me that the planing link is a critical component to the landing gear's operation and it being broken could have caused a catastrophic failure upon landing. Upon further investigation of the planing link, we discovered that it had probably been broken for a few days due to the exposed rusted surface on the underside of the link, where it had broken. We were almost finished with our Atlantic Ocean transit and had not flown for four days, so no inspections had been done recently on that aircraft.

The VMFA-251 maintenance department reacted quickly and had the aircraft back in the air that evening. If not for the quick response and outstanding abilities of the plane captains and maintainers, this day could have ended much worse than it did. I was reminded how important my job as a plane captain is because even the most routine inspection can turn out to have a much more than routine ending. 🧠

Cpl. Butler works as a Plane Captain for VMFA-251.

Cpl. Butler kneels beside the landing gear with its fixed planing link (circled, top right). The broken planing link parts (bottom right, circled).



Maintainers in



AE1 Williams Schuyler, right, and AE1 Jason Siani, both assigned to HS-4, repair components of a radar warning system on a helicopter in the hangar bay aboard USS *Ronald Reagan* (CVN 76). Navy photo by MC2 Melissa Russell.



AM3 Mychal-Ana Abbot and AM2 Piere Rene both assigned to VFA-143 perform maintenance on aircraft equipment in the hanger bay of USS *Dwight D. Eisenhower* (CVN 69). Navy photo by MC3 Chad Erdmann.



AO3 Kwadjo Oforu, assigned to VFA 113, checks an AIM-9 on an FA-18C before launch aboard USS *Carl Vinson* (CVN 70). Navy photo by MCSN Timothy A. Hazel.



Sgt. Anthony Rumlin removes a prox switch from the landing gear assembly of an FA-18 in the hangar bay aboard USS *Ronald Reagan* (CVN 76). Navy photo by SN Nolan Kahn.



MECH

the Trenches



AD3 Seana Sprayberry, tightens an F404 Jet Engine onto a testing mount aboard USS *Ronald Reagan* (CVN 76). Navy photo by MC3 Shawn Stewart.



Pfc. Jacob Kline, assigned to VMA-231, works on the airframe of an AV-8B in the squadron hanger. Marine photo by LCpl. Scott Tomaszycski.



Flight deck crew-members from USS *Freedom* (LCS 1) perform a hot refueling of a MH-60S. Navy photo by Lt. Ed Early.



AMAN Alexander Hermann, assigned VAQ-139, screws in wing fold struts to an EA-6B in the hangar bay of USS *Ronald Reagan* (CVN 76). Navy photo by MC3 Shawn Stewart.

IN YOUR OWN WORDS

WASTED
BLASTED
TRASHED
SMASHED
BOMBED

THESE ARE ALL
YOUR OWN WORDS.

DRINK

LICENSE TO DRINK

DRUNK

RIPPED

SLAMMED

HAMMERED

ANNIHILATED

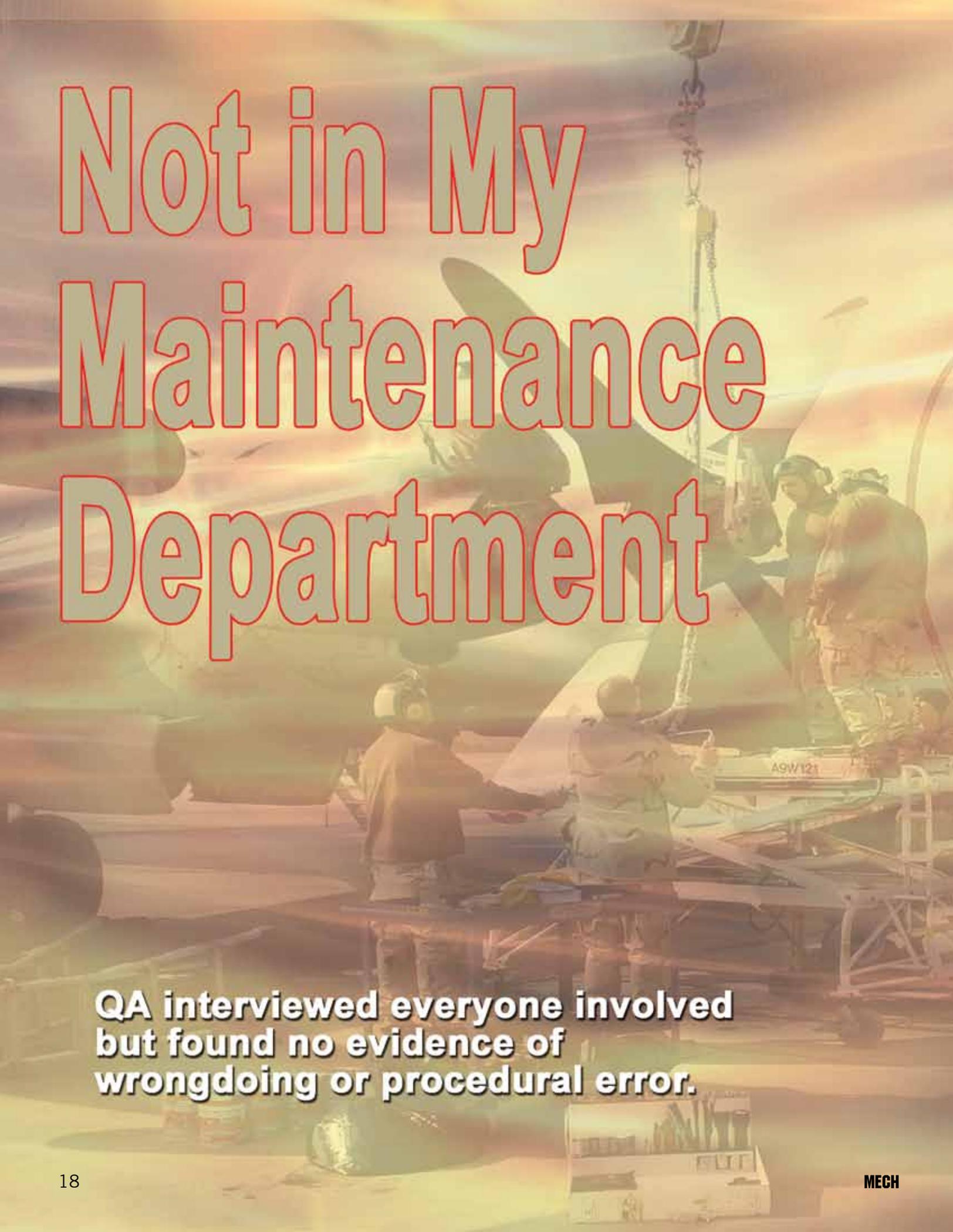
OBLITERATED

DESTROYED

**LISTEN TO WHAT
YOU'RE TRYING TO
TELL YOURSELF.**

POSTER BY AE3 AARON HALL
VX-1, PATUXENT RIVER, MD





Not in My Maintenance Department

**QA interviewed everyone involved
but found no evidence of
wrongdoing or procedural error.**

By LCdr. Dennis Lloyd

Keeping an aircraft flyable that your dad (or granddad) could have flown is a challenge on the best of days. Watching a bunch of 18-25 year-olds maintain the mighty P-3C Orion with pride, grit, and determination is awe-inspiring. Like every MO, I would, without a doubt, stack my department against any other maintenance outfit in the Navy. During a recent IDRC, we met every major challenge from AMI to CWTPI, and excelled at everything thrown at us. Also, we were our wing's nominee for the Phoenix Award, the highest DoD award for field-level maintenance. How could we have malpractice in our department?

Shortly after deploying to Kadena Air Base, Japan, we surged through acceptance of four aircraft from our sister squadron, executed 24-hour flight ops for more than a week and a half during a multi-national exercise, supported two separate short-notice contingency operations, and inducted an aircraft into phase maintenance. By all accounts, we had hit the ground sprinting. Then it all came to a screeching halt.

After changing a propeller on an aircraft, post-maintenance ground turns failed. When the prop dome was removed for troubleshooting, the CDQAR found four broken spline teeth on the propeller hub (these teeth align and lock the propeller dome to the propeller hub when everything is indexed and tightened down).

QA interviewed everyone involved but found no evidence of wrongdoing or procedural error. QA then contacted experts up our chain of command—as well as AIMD/FRC folks—for further guidance. Meanwhile, my guys started installing a new prop.

Ground turns also failed for the new prop. While pulling the dome off during troubleshooting, the QAR found seven broken spline teeth. Oh, in case you're thinking it couldn't get any worse, we had just R&R'd another prop on a different aircraft within the last 18 hours; that's two prop changes in less than a day.

After maintainers removed the third prop dome for inspection, you guessed it: more broken spline teeth. If you're keeping score, that's three props that now needed depot-level repair.

My initial thoughts: The procedure was unclear, or we were getting props from AIMD which were marked incorrectly for alignment. "Couldn't be my guys," I thought. "After all, we're the best of the best". Besides, the CDQAR (same one for all three prop installations) had been a P-3 mech at the "O" and "I" levels for 13 years. He had just taken over as LPO in the work center after a stint in QA and was one of our most experienced mechs. Also, I had another CDQAR and CDIs involved in the actual installation work in all three instances. Seeing a trend?

As I read through QA's final report, it jumped off the page at me: maintenance malpractice. There's a "caution" in the installation procedure which addresses specifically how to avoid breaking spline teeth. The final part of the procedure calls for a few taps of a mallet to align the retaining ring and slot in the barrel assembly. Instead, my guys weren't seating the dome correctly and were using the mallet to force the retaining ring to tighten all the way to get the dome to seat. "Forcing it" fractured the spline teeth.

How did we get to this point? Complacency, crappy training, and lack of oversight. The mechs had the pubs at the work site but obviously weren't using them to go step-by-step through the procedure. All of the individuals on the job had done prop changes before, but none could state for sure they had followed the pubs verbatim. When QA investigators looked at the first damaged prop, they couldn't (or didn't want to) believe it was caused by VP-4 maintenance malpractice. This hubris also prevented QA from stopping further installations until we had a better picture of what really was going on. To make matters worse, QA's lax oversight of the next two installations led to two more costly mistakes.

We didn't do it on purpose, and it didn't happen overnight, but it's inexcusable either way. Maintenance procedures, like NATOPS procedures for aircrew, are usually written in blood and broken equipment. We proved it once again in this case. To the other maintenance officers out there, don't let glowing inspection results and operational execution lull you into thinking that it can't happen to you. 

LCdr. Lloyd is the MO at VP-4.



Small Misstep, Giant Fall

AMAN Brayden Dellinger

It was a hot July morning aboard USS *George Washington* (CVN-73), and we had a full flight schedule ahead of us. My jet, which had been the alert fighter the night before, was still loaded with live ordnance; I went out to watch the AOs download missiles. One of the wingtips was hanging over the edge of the deck, and a tow tractor was needed to pull the aircraft forward so the AOs could get access to the missiles. While the AOs were downloading the ordnance they had access to, I climbed into the FA-18 Super Hornet's cockpit in anticipation of the pull forward.

Navy photo modified



As another aircraft prepared to launch, the ladder was put up and the canopy came down. “Dang!” I thought as I watched the launch preparations. We still hadn’t been pulled forward, and I was now in a time crunch. I started to get a little anxious and over-excited. I thought, “Double check the cockpit switches, make sure the seat straps are ready to go, grab the seat pins, and get down ASAP.”

We finally got the pull forward, and the AOs were working as fast as they could to get my jet downloaded

and ready to go for the upcoming event. Once the download was completed, however, my anxiety got worse as I was still stuck in the hot cockpit waiting for the launch. In the meantime, the yellow shirts disconnected the tractor and went about their duties directing other aircraft on the deck.

After 15 minutes or so, the last jet in the launch sequence was airborne, and finally I was able to raise the canopy and exit the jet. I’d already started seeing other squadron’s aircrew walking to their jets and began to feel rushed as I now only had 45 minutes before my aircraft was scheduled to launch. After getting out of the front cockpit, I did a quick check of the rear cockpit and grabbed all of the seat pins and headed for the boarding ladder. Then, my day got really bad.

I grabbed the edge of the cockpit with one hand—the egress handle with the other—and tried to step on the first rung of the boarding ladder. As I stepped off, I remember thinking, “Surely the yellow shirts put the ladder down... nope, no ladder.” I fell backwards, nine feet, down onto the nonskid. I landed on the lower part of my back.

The next thing I remember is looking up and hearing the AOs telling me not to move, that medical was on the way. Fortunately, my tool pouch was situated on the left lower side of my back, which actually protected my left side from any injury; the right side of my back was not so lucky.

The corpsmen arrived, strapped me to the stretcher, and carried me down to medical. There I underwent a thorough medical exam and x-rays. Despite the good news that I was going to live, both my pride and lower back had been hurt. The physical therapist on board said I had a pinched nerve on the right side of my lower back. After three and a half weeks of physical therapy and LIMDU, I was back to work. The moral of this story: not using ORM hurts.

Airman Dellinger is a plane captain at VFA-102.

I did a quick check of the rear cockpit and grabbed all of the seat pins and headed for the boarding ladder.



CAN YOU HEAR WHAT'S COMING TO A CAG NEAR YOU?

By AMCS(AW/SW) Charles Walter

A new and improved hearing protection device to replace the old style (Mickey Mouse) aural protectors is coming to the fleet soon. Known as the DC2, they contain double wall foam insulation between the walls and a double seal on the ear

cups. Designed to fit into existing cranials, the new DC2's will provide better protection from hazardous noise levels as compared to the current style.

However, it will not remove the requirement for double hearing protection in applicable areas. You will still be required to wear an approved set of earplugs in addition to the DC2's, just like before. Introduction to the fleet is tentatively scheduled for January 2012.



BRAVO Zulu

Send BZs to: SAFE-Mech@navy.mil

AE3 Anthony Kemnitz HSL-49 DET 5

On 26 March 2011, while embarked on USS *Gridley* (DDG-101), AE3 Kemnitz showed attention to detail and assertiveness with an emphasis on safety while acting as a chocks and chain man during flight quarters. A crew member had received permission to enter the arc from the LSE while a pilot was simultaneously exiting the cockpit on the opposite side of the helicopter. Acting decisively and without hesitation, AE3 Kemnitz immediately stopped the crew member from entering the arc and alerted the LSE to the hazard. The pilot strapped back into the cockpit and the crew member was then able to enter the arc without incident. AE3 Kemnitz's ability to maintain superb situational awareness combined with his focus on safety allowed him to successfully diffuse a very dangerous situation.



Cpl Jeffery Allen HMLA-469

While working on the flight line, Corporal Allen noticed the oil cooler compartment door on the No. 2 side of a taxiing AH-1W Cobra had come open during the hover taxi. He immediately moved toward the aircraft as it positioned above a helicopter pad in preparation for takeoff, got the attention of the pilots, and aborted their takeoff. He then taxied the aircraft back to the line and secured the open panel. Had the oil cooler compartment door departed the aircraft, it could have struck the tail rotor located just aft on the No. 2 side. Corporal Allen's sharp eye and fast action, not only prevented a things falling off aircraft (TFOA) incident, but potentially saved the aircraft and the lives of the crew.



**AMAN Zachary Amick
VFA-192**

Airman Amick was doing an aircraft turnaround inspection on a soon-to-launch FA-18C when he discovered a crack in the nose landing gear drag brace bracket. A discrepancy of this nature could have led to a TFOA incident or engine FOD.



**AD3 Cory Wenger and
AM3 Joseph Hopkins
VAQ-132**

During the first EA-18G Growler operational deployment, final checkers AD3 Wenger and AM3 Hopkins noticed a fuel leak during launch preparations on aircraft 540. The leak, caused by a hairline fracture in the variable exhaust nozzle fuel pump, was a serious discrepancy which could have led to an in-flight engine fire if fuel had continued to spill onto and into the engine.



AMR2 John Border
HSL 49 DET 5

On 18 March 2011, AWR2 Border showed attention to detail with an emphasis on safety while conducting an inspection during a hotseat onboard USS *Gridley* (DDG-101). During a routine night-time hotseat all aircraft personnel made their standard walk around the aircraft to check for safety of flight issues. Both off-going and oncoming aircrew noticed hydraulic fluid on the port side of the aircraft. AMR2 Border's dedication to safety led him to check for pooling of the fluid in the pressure refueling port and for drip rates onto the flight deck. His attention to detail led to a troubleshooting call and resulted in the discovery of a leak in the hydraulic pressure line of the No. 1 tail rotor servo. AMR2 Border admirably performed his duty as a crew member, preventing a potentially dangerous situation.



Cpl Juan Villarreal
HMLA-367

Corporal Villarreal was notified of a hazardous material release on the flight line took charge quickly to contain the spill. He led a team of 10 inexperienced Marines and cleaned up approximately 30 gallons of spilled JP-5 fuel.



**AM2(AW/SW) John Hunt
VAW-121**

While serving as an airframes final checker, AM2 Hunt noticed something about the port brake that just wasn't right. After taking a closer look, AM2 Hunt discovered the port main landing gear brake was installed improperly. He notified the aircrew and ensured the brake was pulled off and reinstalled. Had the problem not been addressed it could have led to a possible brake failure.



**AM3 Paul Caskey
VR-61**

While doing a daily/turnaround inspection on aircraft 116, AM3 Caskey discovered a 1.5-inch dent on a compressor blade in the No. 2 engine, which he reported to Maintenance Control and QA. Failure to recognize and repair the failed blade could have resulted in loss of the engine.



**AME3 Serissa Sanchez
VFA-213**

AME3 Sanchez discovered a small hydraulic leak from the port trailing edge flap (TEF) actuator and placed the aircraft, an FA-18F, in a down status immediately. Her keen attention to detail prevented an inflight multi-circuit hydraulic failure.



**AM3 Daniel Villalobos
VQ-4**

While troubleshooting a repeat discrepancy reported by the aircrew, AM3 Villalobos discovered an incorrectly routed stabilizer trim cable that had sawed a four-inch gouge into a main support rib structure. It was the second time that the crew had reported hearing an unusual sound during flight, with no cause identified after the first occurrence. After exhausting all published troubleshooting procedures in his maintenance manuals, AM3 Villalobos began questioning the flight crew, gathering more specific information that led him to investigate an area under the floorboards that is not usually checked in these situations.

His actions prevented a costly depot-level maintenance action, and a possible in-flight mishap from the loss of a flight surface's controllability.

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ALSS Program

“CAUTION!” DO NOT IGNORE A “CAUTION” IN THE PUB!

By PRCS Richard Young

Problem: Most people have heard the saying “Publication WARNINGS are written in blood.” Although it’s not 100 percent literally true, this saying should never be taken lightly. Why? A maintenance manual WARNING refers to an operating procedure which, if not correctly observed, could cause injury to personnel. In comparison, a maintenance manual CAUTION refers to an operating procedure which, if not correctly observed, could cause equipment damage. You can use your imagination on what type of ink a CAUTION would be metaphorically written in. Regardless, it [also] should not be taken lightly. Occasionally during safety surveys, I find evidence that CAUTIONS are flat out ignored.

One such CAUTION in NAVAIR 13-1-6.2 concerns performing battery voltage checks on Parachute Harness Sensing Release Units (PHSRU). It specifically states that only FLUKE 77 series multi-meters are authorized for use, touching meter probes together must be avoided, and all probes must be modified with 3/32 inch heat shrink. The cautions dealing with the probes are clearly explained as, “Failure to do so will result in an inadvertent firing of the PHSRU.” However, the reason for only using FLUKE 77 series multi-meters is not totally clear. Here’s the explanation.

In the 1990’s, the CONAX Florida Corporation manufactured a Battery Voltage Tester that mitigated the risk of contacting probes (see photo). It was subsequently authorized for Navy use and many work centers started using them. It was later determined that the CONAX Tester was not safe for use due to HERO (Hazards of

Electromagnetic Radiation to Ordnance) testing failures. Most importantly, it was not to be used onboard ships or near EA-6B aircraft because of the different radio frequencies being used around the aircraft. This resulted in a recall by the Lakehurst Support Equipment Division. It is not an authorized piece of equipment and hasn’t been for more than 10 years. Yet, one was found in a work center during a recent safety survey.

Other series of FLUKE multi-meters differ in frequency range and can inadvertently fire the PHSRU. Therefore, the only authorized way to safely test the PHSRU batteries is by using the Fluke 77 series meter.

Solution: Preventing this kind of problem is simple. Make sure all maintainers read, understand, and follow all written procedures in manuals and MRCs. If there is ever a perceived “Gray Area,” immediately contact the proper authorities before proceeding. Aviation Maintenance Instructions are never written with the intent of having various interpretations.

Special thanks go to Mr. Howie Tomlinson, a Parachute Restraint Specialist/Engineering Technician at the Human Systems Department at NAWC China Lake, CA for research assistance with this article.



Support Equipment

Are We Thinking Things Through? Operation Risk Management?

By ASCS (AW/SW) Mark Tangney

Back in the Fall 2010 *Mech Magazine*, we discussed some of the issues observed in the fleet using maintenance platforms. In it we pointed out issues with personnel using this equipment improperly or even being untrained. This has been an ongoing battle over the past year, and our hope is that getting the word out will produce better results on the next round of surveys. However, it's a little disturbing considering the following.

Understandably there are going to be situations within our careers that will require us to perform outside the norm. In circumstances like this we have to rely on several factors.

Is equipment not available?

Have we exhausted all resources, found no answer, and due to mission objective decided to improvise?

If we had to improvise, have ALL the experts been contacted for involvement, ideas, alternatives and Operation Risk Management (ORM)?

This picture was taken by a concerned sailor. There is a sling to do this, so why are we not using

it? How many problems can we see here?

Absence of the proper equipment.

A B-stand being used as a jack.

Even if the weight of the object was less than the capacity of the rating of load from the B-Stand, are the rails part of that tested area?

A ladder on top of a B-stand?

Is the desire to get the job done worth our personnel getting hurt or perhaps killed, or damaging equipment? We need to step back and think of the consequences here. Are we using sound judgment? Are we telling our junior personnel this is ok? Are we following ORM?

Nothing good can come from this. We may get the job done, but there's obviously a much better way to do it.



Quality Assurance

Who's Looking Out for Number One?

By AFCM(AW) Ronald Taylor

Once again Quality Assurance Audits is in the top ten list of programs having problems. Too often we rely solely on the Computerized Self-Evaluated Checklist (CSEC) to guide us while doing our audits. While the CSEC is a valuable tool in managing the process and the data, Program Managers and Monitors must be knowledgeable of all the requirements, provisions, and responsibilities as prescribed in the Naval Aviation Maintenance Program (NAMP) and other applicable publications. Dig into the NAMP and utilize Wing instructions to gain sufficient knowl-

edge of programs. Use your resources: Wing and Commander Naval Air Forces subject matter experts can give you advice on the hard to answer questions.

When conducting your audits, write up all program discrepancies. Even if they are fixed on the spot this information can help in trend analysis. But when a discrepancy has been identified and not corrected on the spot, do a thorough follow up within ten working days to verify the correction. Discrepancies that have not been corrected may require further attention, or possibly even a special audit.

Fix the process by which we do audits and monitors and we will make great strides toward eliminating repeat discrepancies and achieving the goal of zero hit audits and monitors.

Safety Conference

By GySgt John Hess

The aviation maintenance department of the Naval Safety Center (NSC) recently hosted the ninth annual aviation maintenance safety conference 3-5 May at Naval Station Norfolk. This event is held in the spirit of gathering together multiple platforms and various maintenance professionals from across the Navy and Marine Corps team. For nine years it has been an ideal opportunity to compare ideas, talk shop and see the current safety trends across the fleet.

Over 70 representatives from over 49 commands attended the three-day conference. The open forum concept of this year's conference allowed for some great discussions on key safety areas.

The following vendors attended this year's conference:

- SKYLOX: Makers of aircraft circuit breaker tag out systems.
- Plastic Engineering: Makers of Pre-cut tool box foam.
- Flexible Lifeline Systems, Inc: Manufacture of fall protection devices.

The ninth annual conference could not have happened without the dedicated NSC team and the commands that attended and participated. The Naval Safety Center wants to thank all of them for their participation and continued support.

The staff is planning to take next spring's conference to NAS North Island. I hope to see many of you there.

GySgt Hess is a maintenance analyst at the Naval Safety Center and coordinates the aviation-maintenance safety conference.

Helping Sailors and Marines Help Themselves

Sierra Hotel



Commander, Naval Safety Center would like to recognize the following aviation commands for their recent participation in safety surveys, culture workshops, and maintenance-malpractice resource-management (MRM) presentations for the months of April-May.

MRM

AMO School

ASO School

FRC MidEast

FRC Civ

Safety Surveys

VQ-3

VQ-4

VQ-7

VFA-103

VFA-137

VFA-151

VFA-94

FRC West

Culture Workshops

VMFA-312

VR-48

HSC-12

VT-2HSC-8

VT-3

NSAWC

VT-21

VAQ-140

VX-20

VFA-137

VX-23

VFA-94

VX-30

HSL-60

VFC-111

SPAWAR- San Diego

Navy photo by MC3 Fidel Hart.

Flight, Flight-Related, and Ground Class A and B **Mishaps**



Class B Mishaps

Class A Mishaps		Class B Mishaps	
Date	Type Aircraft	Date	Type Aircraft
3/17/2011	CH-53E Left main landing gear of helicopter collapsed on Marine.	3/28/2011	F-18E While being towed, FA-18E impacted parked FA-18A+ causing damage to both aircraft.
3/12/2011	F-18F Aircraft experienced brake fire on landing roll out after diverting.	4/1/2011	MV-22 While taxiing, the nose landing gear of an MV-22 collapsed from under the aircraft.
3/29/2011	AV-8B Aircraft crashed into the water; pilot ejected safely.	4/12/2011	AV-8B While conducting an air-to-surface sortie AV-8B canopy failed in flight.
3/29/2011	CH-53D Helicopter crashed into Kaneohe Bay while conducting low light level NVG training operations.	4/28/2011	SH-60B Aircrewman's thumb partially severed by rescue hoist cable during night SAR training.
3/30/2011	F/A18C Experienced a catastrophic uncontained engine failure while under tension on catapult.	5/11/2011	E-2C+ Tow tractor impacted outboard starboard vertical stabilizer on the flight line.
4/6/2011	F-18F Aircraft crashed during demonstration practice at NAS Lemoore.	5/17/2011	F-18E Engine fire during high-power ground turn.
4/11/2011	F-18C Aircraft experienced dual engine fire after touch and go. Recovered aboard ship. No injuries.	5/17/2011	F-18C Aircraft departed prepared surface on landing with extensive aircraft damage.
		5/21/2011	RQ-7B Shadow experienced engine cut on takeoff and impacted ground.

Flight, Flight-Related, and Ground Class C Mishaps

By MGySgt Arthur Hagans

From January 4 to May 31, 2011, Navy and Marine Corps units reported 51 Class C mishaps involving aircraft. Of these, 12 indisputably attributed to maintenance-malpractice procedural errors.

Below is the list of all incidents reported sorted by Type/Model. Take an opportunity to discuss the incidents and see if you can find the 12 incidents that are maintenance-malpractice procedural errors.



DATE	T/M/S	ACCIDENT DESCRIPTOR
1/4/2011	F-18E	Port TEF impacted door 64L while conducting engine leak check.
1/10/2011	F-18A+	Port STAB struck door 166L.
1/30/2011	F-18E	Aileron damaged during towing operation on flight deck.
2/1/2011	F-18E	Inadvertent release of BRU-41 IMER during night training mission.
2/10/2011	F-18E	Left horizontal stabilator impacted runway on landing.
2/11/2011	F-18D	Port MLG door TFOA strike damage to TEF, pylon and horizontal stabilator.
2/24/2011	F-18D	Port leading edge flap seal departed aircraft in flight and punctured starboard vertical stabilizer.
2/28/2011	F-18F	Cranial from maintenance personnel ingested down starboard engine of turning aircraft.
3/3/2011	F-18C	Panel on starboard vertical stab and ram coating under port lex departed inflight. Port engine FOD.
3/21/2011	F-18C	Aircraft damage to Y645 former due to flight without stress panel 103 being installed.
4/11/2011	F-18F	Pilot discharged fire bottle after receiving APU fire indications from ground personnel.
4/12/2011	F-18E	Aircraft LAU struck rack of external fuel tanks during taxi.
4/15/2011	F-18D	Engine damaged in flight by TFOA.
4/18/2011	F-18F	Aircraft taxied into parked aircraft.
4/19/2011	F-18F	Tractor impacted air refueling store on unmanned, chained-down aircraft on CVN flight deck.

DATE	T/M/S	ACCIDENT DESCRIPTION
4/25/2011	F-18E	Damage to canopy and windscreen caused by aerial refueling basket slap.
5/26/2011	F-18	Captive air training missile departed A/C during flight at NAS Fallon.
5/28/2011	F-18F	Abrupt stoppage of elevator caused tie down chain to snap, damaging ATFLIR PEH access door.
5/15/2011	F-18E	Jet exhaust caused heat damage to the landing signal officer display system.
5/22/2011	F-18A+	Aircraft refueling probe departed aircraft while tanking from F/A-18E impacting STBD tail.
5/24/2011	F-18	MK-76 impacted fuselage and right horizontal stabilizer during strike training at NAS Fallon.
4/29/2011	F-18E	Port trailing edge flap impacted station 2 pylon.
6/1/2011	F-18C	Fairing separated from door 116L during flight damaging left trailing edge flap and left stabilator.
3/4/2011	CH-53D	Overnight storm winds at MCB Hawaii damaged A/C 156967.
3/15/2011	CH-53E	Aircraft experienced a hard landing after an uncommanded collective drive during an FCF.
4/8/2011	CH-53E	Enlisted aircrew injured during cargo offload.
5/26/2011	MH-60S	Avionics bay door cover opened in flight.
2/28/2011	MH-60S	High winds caused metal ring to separate from diamond day shape impacting rotor blade on parked helo.
3/15/2011	MH-60S	During approach to ship MAC tail strut/wheel assembly impacted ship deck edge.
4/19/2011	SH-60B	Main rotor blade damaged during fold evolution using blade fold test set.
4/27/2011	SH-60F	During turnaround inspection, discovered FOD inside rotor hub that damaged hub and blade spindle.
4/28/2011	SH-60B	Rescue swimmer's thumb was partially severed by rescue hoist cable during Night SAR training.
5/3/2011	MH-60S	Aircraft rotor blade impacted intermediate gear box cowling during flight operations.
5/3/2011	MH-60S	Two aircrewmembers fell out of aircraft while conducting SAR exercise.
1/5/2011	SH-60F	Aircraft damaged when main rotor blades impacted tree during Nap-of-the-Earth flight profile.
1/30/2011	RQ-7B	Propulsion system failure.
2/18/2011	UH-1N	Brite Star Block II TFU made ground contact during sliding take-off.
5/14/2011	UH-1N	Hard landing during section landing in parade formation; BRITE Star II damaged.
1/19/2011	EA-6B	During night CCA practice at NAS WHIDBEY ISLAND, aircraft sustained damage to the starboard MLG.
1/23/2011	EA-6B	Port side windscreen panel shattered in flight.
4/10/2011	EA-6B	EA-6B nose landing gear collapsed during night arrested landing onboard USS <i>Carl Vinson</i> .
2/23/2011	EA-18G	Damage to ALQ 99 during download.
5/7/2011	EA-18G	During EA-6B tow operation, port aft EA-18G ALQ-218 radome cap struck by starboard wingtip of EA-6B.
3/18/2011	P-3C	Mishap aircraft struck birds while conducting touch and go.
4/13/2011	EP-3E	Crew member fractures lower leg during an abrupt aircraft maneuver.
4/14/2011	MV-22B	Engine fire occurred during maintenance ground turn. Fire was extinguished. No injuries to personnel.
4/20/2011	MV-22B	A bird struck the FLIR ball of an MV-22. The damage was discovered on post flight inspection.
5/2/2011	MV-22B	Damage to the drive train of the aircraft was discovered during routine maintenance.
2/25/2011	C-2A	Aircraft starboard flaps damaged during troubleshooting.
4/25/2011	C-9B	Engine FOD damage discovered on post-flight/turnaround.
4/01/2011	C-130T	Aircraft hit multiple birds on takeoff from Andersen AFB, Guam.

Wear your Goggles.

**Why would you CHANCE
losing or impairing
your vision?**

**Recovery is not always
an option!**



www.public.navy.mil/navsafecen/