

THE NAVY AND MARINE CORPS AVIATION SAFETY MAGAZINE

# Approach

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AVIATION SAFETY

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1094-0405

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## TREAT EVERY FLIGHT LIKE A MISSION

How do we change the culture of our crewmembers to treat every flight as a mission? The answer is leadership and ownership.

# ...we are **YOUR** safety advocate



**MISSION**

To preserve warfighting  
capability and combat  
lethality by identifying  
hazards and reducing risk  
to people and resources.

## RADM Mark L. Leavitt, USN Farewell Letter

### COMMANDER'S FAREWELL AND KEEP YOUR EYE ON THE BALL!



Naval Aviation and Safety Professionals,

This is my final edition of *Approach* as Commander, Naval Safety Center. I am wrapping up a career that began 38 years ago when I was a young, impressionable aviation reserve officer candidate at Florida State University.

Although much has changed during my time in uniform with the advances in technology and the sophistication of our operating systems, one thing will always transcend time: safety is readiness! In order to maintain a ready Navy and Marine Corps, we must continue to work together to build a culture of excellence, where safety and professionalism is at the forefront of everything we do. As you read the articles in this magazine, you will find commonalities that you can relate to in your own squadron or work center. Our greatest strength as warfighters is our ability to share valuable information, lessons learned, common trends and best practices that help us save lives and prevent mishaps. I challenge you to keep your eye on the ball and remain steadfast in your commitment to getting your stories to us so we can share them with others in the Fleet.

As RDML "Lucky" Luchtman takes the helm, the Naval Safety Center will continue to build on the foundation set forth in our recent transformation to a forward-looking organization that provides advanced analytics, sophisticated modeling data and timely risk assessments that can be used to prevent future mishaps.

## COMMANDER, NAVAL SAFETY CENTER INTRODUCTION

Naval Aviators,

I am extremely humbled and excited about the opportunity to lead the Naval Safety Center. Rear Admiral Mark "Beave" Leavitt and his team of more than 200 military and civilian safety professionals have made significant strides in transforming the command into a forward-looking analytical organization. In my 31 years as an officer and a pilot in the Naval Aviation enterprise, I have a deep appreciation for the power of data and its impact on our efforts to preserve readiness and save lives. The Naval Safety Center is a center of excellence for data, and we will continue to expound on our abilities to provide the fleet with relevant, in-depth data to help inform your risk management efforts.

We are also a learning organization, and we stand ready to engage with you on sharing lessons learned and best practices in order to foster a culture of excellence across the Navy and Marine Corps. My team remains fully engaged in providing predictive analytics and valuable safety resources in order to help you complete your warfighting mission.

*Approach* Magazine is one of the many resources available to you. I encourage you to check out the wealth of information on our website, and if you have ideas, please share them with us. Everyone has a voice in how we accomplish our mission.

This is an exciting business, and I look forward to being part of the great initiatives that are on the horizon. My team and I stand at the ready as your safety advocate and look forward to working together now and in the future.

RDML "Lucky" Luchtman  
Commander, Naval Safety Center

## RDML "Lucky" Luchtman, USN Hail Letter





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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. *Approach* (ISSN 1094-0405) and (ISSN 1094-0405X online) is published quarterly by Commander, Naval Safety Center, 375 A Street Norfolk, VA 23511-4399 and is an authorized publication for members of the Department of Defense. Contents are not necessarily the official views of, or endorsed by, the U.S. Government, the Department of Defense, or the U.S. Navy. Photos and artwork are representative and do not necessarily show the people or equipment discussed. We reserve the right to edit all manuscripts. Reference to commercial products does not imply Navy endorsement. Unless otherwise stated, material in this magazine may be reprinted without permission; please credit the magazine and author. *Approach* is available for sale by the Superintendent of Documents, P.O. Box 979050, St Louis, MO 63197-9000, or online at: bookstore.gpo.gov. Telephone credit card orders can be made 8 a.m. to 4 p.m. Eastern time at (866) 512-1800. Periodicals postage paid at Norfolk, Va. and additional mailing offices. Postmaster: Send address changes to *Approach*, Code 52, Naval Safety Center, 375 A Street, Norfolk, VA 23511-4399. Send article submissions, distribution requests, comments or questions to the address above or email to: [SAFE-Approach@navy.mil](mailto:SAFE-Approach@navy.mil).



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'TURN BACK'





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Two pilots with Strike Fighter Squadron, (VFA) 106 Oceana Naval Air Station, Va., walk away after a training flight at MacDill Air Force Base, Fla. U.S. Navy pilots trained on air-to-ground scenarios at MacDill's Avon Park Air Force Range.

Photo illustration by Catalina Magee.



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**BRAVO ZULU**

Sailors and Marines Preventing Mishaps

# Treat Every Flight Like a Mission



U.S. Navy Photo by Mass Communication Specialist 2nd Class Jakoeb Vandahlen

By **LT Cmdr. Michael Strittmatter** and **LT Kevin Miller**

...  
**"SET CONDITION FIVE, SET CONDITION FIVE," WAS THE CALL FROM THE FLIGHT STATION DIRECTING EVERYONE TO IMMEDIATELY TAKE THEIR SEATS AND FASTEN THEIR SEATBELTS. "**

I, (Lt. Cmdr. Strittmatter) was the Patrol Plane Commander (PPC) of a combat aircrew. We were on the last leg of a 12,000-mile transit from 5th Fleet to Naval Air Station (NAS) Whidbey Island, Wash. Three days, three flights and ten-time zones later, we were just four hours from seeing our loved ones after a seven-month deployment. Approaching western Iowa, the flight station executed a pilot seat swap and what happened next would change the way I operate as a plane commander forever.

As we approached St. Louis, air traffic control (ATC) had cleared us direct to Billings, Montana. Before we accepted the flight plan

change, I had the second pilot (2P) ask how the weather looked. ATC responded that there were a few cells on our flight route, but they were moving east and our northern track would keep us clear. The cells were approximately 300 miles away, so it was out of our radar range.

At three hours into the flight, when I swapped out of the left seat with the third pilot (3P), we were approximately 90 miles from the bad weather. We conducted a brief turnover that covered airspeed, weather and our assigned radio frequency. At that exact moment, ATC called our aircraft with a weather update, "light to moderate precipitation ahead. Let us

know if you want to deviate." Only the 2P was monitoring the radio. He replied, "Copy, we will let you know." The second pilot misheard this call. The call made by ATC (which was played back to us during the mishap investigation) stated, "Moderate to extreme precipitation, 11 - 1 o'clock, tops FL400 (40,000 feet). Let us know if you want to deviate."

From my perspective, though, we were above the weather as expected, it was visually clear in front of us and the radar picture appeared clear. Additionally, because ATC said the weather on our flight path would be cleared by the time we arrived, I was further lulled into a sense of complacency.



I went to the back of the plane to get lunch and take a break from flying, knowing that in just a few short hours, we would be landing at Whidbey Island, the final P-3 to return from deployment. The crew and passengers in the back of the plane were relaxed and enjoying the smooth flight provided by the pilots. The Tactical Coordinator (TACCO) was at his station on the headset with assistance from the NAVIGATOR/COMMUNICATOR who diligently managed radio calls. Our original radar operator (SS3), a senior reservist augmentee, who had been with us for the entire deployment, was authorized to depart at NAS Patuxent (Pax) River on scheduled leave and didn't make this last leg of the journey with us. On short notice, his squadron flew out a replacement SS3.

Although we briefed him on the possibility of weather en route, we did not set clear expectations for him before the flight. We also did not know that it was his first solo flight as a qualified radar operator.

The rest of the crew members were sitting in their tactical crew stations: keyboards remained covered, trackballs secured and screens darkened. Laptops and iPads had replaced the tactical displays, offering a variety of personal in-flight entertainment.

During the three previous repositioning flights, the aircrew was using Personal Portable Electronic Devices (P-PEDs) in the back of the aircraft. As the leaders of the crew, the TACCO and I never corrected this relaxed situation and ultimately, this would be a major contributing factor in this mishap. The rest of the crew paid little attention to the radios with the mindset that "flight has it all."

**(LT Miller):** During the seat swap, I took the headphone off my left ear so that I could hear any extra info that was being exchanged in the flight station. While I was the only pilot on the headset, a call came through from ATC: "light to moderate precipitation ahead, 11 - 1 o'clock, let us know if you need to deviate."

I looked out the window to get an assessment of the weather. I replied back to ATC with "Copy, we'll let you know." I didn't see anything of concern and didn't think it was pertinent to pass the information down the line. I was wrong. Around this time, we heard a Hazardous Inflight Weather Advisory System (HIWAS) call made over VHF radio.



U.S. Navy photo by Mass Communication Specialist 2nd Class Jakob Vandahlen/Released

We were unsuccessful in tuning the weather on the assigned VHF Omnidirectional Range (VOR) frequencies. Instead of attempting to tune more frequencies or contact the flight service station, we disregarded and assumed it was referring to the hazardous weather north of us, which was noted on our preflight weather planning.

The 3P jumped in the left seat and I passed him the light to moderate the information I had received. We were on the edge of a cloud layer. We could see above, below and laterally. We had off-and-on discussions about whether we needed engine anti-ice. I was following along on our charts and updating our navigational aids (NAVAIDs) as we went and I would generally pick one with a hazardous inflight weather advisory service (HIWAS) station. I tuned three stations and never heard any broadcasts come through. I finished updating our position and NAVAIDs and looked up at the display where we had our radar repeating from the SS3 station. Some returns had started coming through. I called the SS3 to get an assessment but did not get a response. About that same time, the TACCO, who was the senior naval flight officer (NFO) on the crew, showed up in the flight station.

He looked at the radar display and asked if we had tried calling SS3. I told him that I tried and got no response, so he walked to the back to get him on headset. Some light precipitation started, followed by some light turbulence.

"Set condition five. Set condition five." I also called ATC for a deviation. We turned off the autopilot and started a left turn. The navigator, who also had a radar repeater display at his station, came over the intercom system (ICS) and said, "turn to a heading of 219."

"Get us through this," I shouted over ICS to SS3. Shortly after, the SS3 confirmed our route as a proper heading. At first, everything seemed fine as though we were just hitting some precipitation and bumps, but that changed very quickly. Within seconds it got deafening, bumpy and dark. I saw our airspeed start tapering down and our altitude climb. At that point, I took controls and tried to maintain a stable platform.

**(Lt. Cmdr. Strittmatter):** I could hear the sound of rain hitting the aircraft accompanied by a bit of light turbulence. I strapped into the port observer seat and donned a headset to monitor the radios and ICS.

**Within seconds, the turbulence significantly increased and communication became virtually impossible over the noise of the intensifying precipitation.**

I directed the flight station to slow the aircraft to turbulent air penetration airspeed and to disengage the autopilot.

"We already have," the 2P shot back. I looked out my window at the port wingtip and was shocked to see it rapidly flexing up and down in the severe turbulence. As I stared and wondered how the wing of this Orion could withstand the stress, the bottom fell out and we dropped like a stone. Next to me, the cargo net securing our luggage did little to stop the bags from floating to the ceiling, followed by an explosion of gear as they hit the floor upon leveling off.

Then, hail began hitting the aircraft, producing a noise that I'd never heard before in my 3,500 hours in the airframe. In two minutes - it seemed much longer - the storm was over. From my observer window, I saw clear skies in front of us and a wall of dark clouds that we had just exited. I unbuckled and ran to the front of the aircraft, checking on each crewmember as I went forward. It was eerily quiet when I arrived in the flight station, except for an odd fluttering sound, which turned out to be the weather stripping from our destroyed nose radome flapping against the front windshield.

**I looked out the window to survey the damage and saw fist-size dents peppered along the entire leading edge of the port wing.**

The starboard wing had fared no better. The aircraft was flying straight and level, and I directed the 3P to swap seats with me. As I was doing this, I asked the 2P, whose face was a ghostly shade of white, "What happened?" He responded with, "They said light to moderate precipitation." This critical call was not heard at all by the other four crewmembers on the headset.

Although every station on the aircraft was assigned a qualified aircrewman, on headset, monitoring ATC, no one was asked to, or bothered to, back up the flight station.

... lucky to be alive



U.S. Navy Photo by Mass Communication  
Specialist 2nd Class Jakob Vandahlen/  
Released





U.S. Navy Photo by Mass Communication Specialist 2nd Class Jakob Vandahlen/Released

How had they all missed this call? Over the course of 14 minutes, 11 other aircraft had asked to deviate around the weather. How had we all missed these calls?

Frankly, at this point, the “how and why” was not important. We needed to get the aircraft on the deck as quickly and safely as possible.

We declared an emergency and coordinated with ATC to land at the nearest suitable airfield, Eppley Field in Omaha, Neb. With no observed change in flight controllability, we executed a standard approach and landing. After taxiing to parking, I decided to keep everybody on board while I surveyed the damage. At first glance, observing hail damage across virtually every exposed surface of the aircraft, my immediate thought was how tough this old warbird is and how lucky we were to be alive.

Three experienced aviation investigators met the aircraft and told us that we were lucky to have made it through the storm.

**One thing was sure, this aircraft that had flown thousands of hours and countless missions around the world**

**would never fly again.**

How did a fully trained, combat-ready tactical aircrew almost lose the aircraft and their lives by flying into forecast severe weather, visible to the flight station, visible on aircraft radar, and accompanied by timely warnings from air traffic controllers? We are lethal military professionals who are courageous, disciplined and accountable, but we lost focus that day.

I allowed a single point of failure to exist in a multi-crew aircraft, with qualified crewmembers at all of the positions. It is the responsibility of all crewmembers to stay tactically involved, even during seemingly benign flights. It’s never “just a bounce hop.”

We were complacent on a routine flight, which ultimately resulted in the loss of an aircraft and the near loss of the 21 souls on board. So, how do we change the culture of our crewmembers to treat every flight as a mission?

**The answer is leadership and ownership.**

The TACCO and I had a responsibility to ensure everyone knew their role during

repositioning flights. This started during mission planning and should have been reinforced during the planeside brief prior to each leg of the flight. My hope is that this article will remind everyone who reads it to stay focused, stay alert and remember:

**Treat every flight like a mission!**



Damage to the aircraft's wing. Photo provided by VP-40.



# THE SUN

Didn't Rise Over a Night Time  
**Near Miss**

"... THE LIGHT DIVISION WAS  
IN A FULL COMBAT LOAD OUT,  
THE HEAVIEST AND DRAGGIEST  
CONFIGURATION YOU CAN STRAP TO  
AN EA-18G. ..."



**By LT Nicolas Haupt**

Photo by Petty Officer 3rd Class Zachary Melvin. Photo illustration by Catalina Magee.

JAPAN IS AN INCREDIBLE PLACE WITH A VIBRANT CULTURE STEEPED IN TRADITION, STUNNING VIEWS AND A CARING POPULATION THAT GRACES THE ISLAND COUNTRY, APPROPRIATELY NAMED "THE LAND OF THE RISING SUN." UNFORTUNATELY, FOR THE 200 SAILORS ATTACHED TO VAQ-138, THAT "RISING SUN" RISES AT 3:30 A.M. AND KEEPS THE UN-AIR-CONDITIONED SLEEPING QUARTERS IN THE MID 80S THROUGHOUT THE NIGHT. TOSSING AND TURNING AS YOU STICK TO YOUR SHEETS ONLY FOR THE SUN TO RISE AS YOU BEGIN TO DOZE OFF CERTAINLY BEGINS TO WEAR ON YOU, BUT IT IS WHERE THE SQUADRON FOUND ITSELF ENTERING THE THIRD MONTH OF A DEPLOYMENT.



The mission planning for a Growler Weapons and Tactics Program (GWTP) Level III Suppression of Enemy Air Defense (SEAD) flight was set to happen the same afternoon of mission execution, making the day slightly longer than normal, but well within squadron standard operating procedures (SOP). Deployment operations tempo dictated mission planning be on the same day due to the number of hours flown the day before, leaving a lack of aircrew available to plan. The flight schedule allowed for a good start time, and the day began with a successful planning session.

Time was built in for dinner before the mass coordination brief with Strike Fighter Squadron (VFA) 13, as the mission included nine F-16s and three EA-18Gs. The mass brief was held on the other side of the flight line, leaving about 40 minutes for one pilot doing his first mission brief. Although it was enough time for an experienced aviator, it did leave the new pilot flustered as he rushed to consolidate his thoughts prior to the walk. Despite the mission being the first true night flight in several months, the weather was briefed to be clear with good illumination, a perfect environment for night vision goggles (NVGs).

With that, the aircrew walked, feeling safe and prepared for the event. Arriving at the



aircrew survival equipmentmen (PR) shop, the aircrew got the news that NVGs would not be available.

However, they walked to the jets knowing they would be de-conflicted with hard altitudes in their block of 27-29,000 feet. Once airborne and checked into the airspace, the lead pilot (lead) dropped the dash three and dash two off at 27 and 28,000 feet, respectively, while continuing to climb to the top of the 29,000-foot block. After leveling off, lead noticed just how dark it was, and noted an un-forecasted overcast layer at 30,000 feet, obscuring any illumination from the moon or stars. The flight was in position (fenced in), and the light division was prepared to start the fight. F/A-18 and EA-18 crews know how sluggish a fully loaded aircraft is in the high 20s. The light division was in a full combat loadout, the heaviest and draggiest configuration you can strap to an EA-18G. Furthermore, at 29,000 feet, afterburner (AB) is out of its envelope so that it would be unreliable at best.

This was noted when lead turned into the fight for the offensive counter-air (OCA) and striker push and had a left AB no-light. Lead decided to stay at full military (MIL) power to gain the airspeed necessary to remain in the position with the strike package. With a good radar and multi-functional information distribution system (MIDS) situational awareness, lead felt confident, pushing into the threat and supporting the OCA players. Running two separate timelines off the air threat with a split in azimuth, and rapidly

approaching a surface-to-air missile (SAM) system, lead felt they had high situational awareness on everything that was being simulated in the fight. Following the air picture being cleared up, and seeing that there were no indications that the strikers had successfully employed ordnance on the SAM yet, lead decided to move away (flow cold). Approximately 90 degrees through the turn, lead pilot glanced at his altitude and noted he was slightly low with a velocity vector below the horizon, but decided to decrease his pull and stay in MIL instead of max AB to conserve fuel, knowing the likelihood of another AB no-light.

Through 180 degrees of turn, lead recognized a merging MIDS track with his dash two and peeked at his altitude again to confirm it. After seeing "060" in the hundreds portion of the altitude readout, lead felt confident de-confliction was assured. Dash two noted that the lead seemed to be descending in the turn, and decided to take a slight offset to create more lateral separation. A "splash" call over the radio passed word that the SAM had been destroyed and lead continued his turn through 180 degrees to stack on top of dash two and push in close formation toward the target area. Just prior to the MIDS tracks converging, lead looked at his altitude one last time and saw he wasn't at 29,060 feet like he had thought. Instead, he was at 28,060 feet. Lead leveled his wings and placed the stick full aft for a quick climb, looking over his shoulder to find dash two. Dash two initiated a max performance climb, judging that lead would continue to descend. Lead spotted dash two when the afterburner passed from right to left, just aft of his jet. A "Knock-it-Off" was initiated, and all aircraft returned as singles without further incident.

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The data pulled from the two aircraft showed the closest point of approach (CPA) was 245 feet, less than half of the 500-foot separation requirement stated in training rules, and less than a quarter of the 1,000-foot separation built into the hard altitude de-confliction plan.

Poor sleep, long days, lack of night proficiency, no NVGs, and unexpected environmental all played a role on this night. But, ultimately, the biggest take away from the crew was that a focus and understanding of everything that was simulated overshadowed a lack of focus on the one thing that was real. No aircraft was going to get shot down by a real missile that night. The danger during the mission was not the scenario -- it was the other aircraft.

Despite having an awareness of all the aspects of the mission, lack of awareness to their own altitude nearly caused two jets to collide over the Sea of Japan.

**“Aviate, Navigate, Communicate” is the motto often used in aviation, and luckily dash two aviated to steer clear of his lead, on a night when lead failed to do so.**

Fortunately, the crews got a chance to return to their room, reflect on a close call, and watch the sunrise over Japan at 3:30 the next morning.





The **best**  
**Pilots**  
**WHO** recognize &  
**ARE THE ONES** **fix**  
**mistakes.**

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“THIS IS THE SKILL THAT MATTERS MOST, THAT SAVES LIVES IN COMBAT AND ENSURES WE WIN.”

---

QUOTE BY RETIRED MARINE CORPS PILOT DAVE BERKE

# That Hydraulic Light is



U.S. Navy photo by Mass Communication Specialist 3rd Class Michael Singley/  
Released

## For Real!

By **LT CMDR John O'Neill**

Over the course of a naval aviation career, one can develop insensitivities to particular issues that are common in a specific aircraft. While quirks, noises, vibrations, and even master caution lights can become expected and commonplace, it is vitally important to address and honor them as if what you're experiencing is an actual issue or emergency and not just a known and repeating gripe.

On a daytime, 6th Fleet flight over the Mediterranean Sea, my crew of Blumail 603 (Command and Control Squadron (VAW) 121) and I were on station profile approximately 140 nautical miles (NM) from USS Abraham Lincoln (CVN 72). At about 90 minutes into the flight, we received a master caution light coupled with a hydraulic fluid quantity (HYD FLU QTY) caution light.

Most often, this light is triggered by an age-old nuisance issue – the chemical (chem) air dryers to the hydraulic (hyd) fluid reservoirs saturate with moisture and then freeze, which provides the false indication of losing hydraulic fluid.

Our altitude (28,000 feet) and outside air temperature (-38 degrees Celsius) were textbook indications that this could be a frozen air dryer, but we honored the light as actual and immediately turned back in the direction of the ship.

We broke out the pocket checklist (PCL) and started a descent toward warmer air in the hopes of thawing the air dryer. We sent the radar operator (RO) forward to check the flight hydraulic reservoir, and he reported that the "slug" that indicates hydraulic fluid level was utterly bottomed out, which is not ideal but also an indication that is always associated with frozen chem air dryers. My co-pilot was flying one of his first flights since joining the Fleet, and as he reached for the PCL, he noticed out the right window that a large amount of red hydraulic fluid was pouring out of the inboard side of the starboard nacelle. He then asked if that was normal to see when a chem air dryer freezes despite knowing that probably was not a good thing. I had to quickly laugh to myself and explain that no, indeed, that was not normal, and we may be looking at a much bigger issue. We had the combat information center (CIC) crew look as well, and they, too, were surprised to see a large amount of red hydraulic fluid continuously streaming out of the engine nacelle.

At this point, we realized we had a much larger problem than a frozen chemical air dryer, and we were still 120 NM from the ship. Pressures in both flight and combined hydraulic reservoirs were normal, so I felt the system was holding on for the moment. We completed the hydraulic quantity emergency procedure with all notes, warnings and cautions.

The procedure ultimately informed us that we were in a "land as soon as possible" situation; however, the red fluid gushing from our right motor had already led us to the same conclusion. I then elected to have us go through the total hydraulic system complete failure emergency procedure so that in the event that we did lose all hydraulic fluid, we would have a game plan. While there are systems in the aircraft designed to isolate hydraulic fluid and allow you to fly the aircraft still, I could not be sure they were not compromised, given the vast amount of fluid that was pouring out of the engine nacelle.



I reached out to Bluetail 601, who was established in the Case 1 overhead stack preparing for a recovery. I advised them of our situation and checked the status and progress of the impending recovery. Due to the leaking hydraulic fluid my urgency to get back to the ship had increased drastically, but I opted to leave our flaps at ten so that we were not stuck in the up position should we lose all of our hydraulic fluid, especially if we needed to emergency-extend them in the event of a ditch or bailout situation. I worked the timing and figured that the recovery would be wrapping several minutes before we arrived, which would allow me time to talk to the Air Boss, Paddles, and set up for the straight-in.

I intended to reach out directly to the Air Boss before the end of the recovery and let him know of our situation and our requirement to land as soon as possible via straight-in so that I could be very directive with what I needed, rather than going through our squadron representative and playing the telephone game. While our squadron reps in the tower are very competent, this was turning into a situation that could not be deferred. Before the completion of the recovery, I had switched up the tower on Button 1 and heard the Air Boss tell the airborne helicopters to “snuggle up” because they had “one to catch.” I knew that if I had to wait for a helo break in the landing area, that could be more time than I could afford to lose.

At that moment, I called the Air Boss directly and reported, “Sir, I have a bit of a situation here. I have a flight hydraulic quantity master caution and an awful lot of hydraulic fluid pouring out of my right engine. I’m at 15 miles and need to set up for a straight-in and land immediately.” The Air Boss concurred with the urgency of our problem, called off the helicopters, got Bluetail 601 on deck, and kept the deck open for our straight-in.

On our transit back to the ship, we addressed what systems we would lose if we began to lose pressure in the hydraulic system, what would be affected if we lost all hydraulic fluid, and had a plan for what we would do once on deck and shut down in the wires. After we completed approach checks and talked to Air Boss about our plan, I then felt comfortable reaching out to our squadron rep on Button 18 and backfilling them on our

situation. They did a great job backing us up on all procedures and ensured we had checked every box needed for a safe recovery. We approached the ship from the bow, so I lowered the gear normally, dropped the flaps from 10 to 20 degrees, and switched to 20 degrees of the rudder. Everything was working nominally, and our hydraulic pressure held steady at 3,000 psi.

### **I entered a downwind and made a deep turn to final using the standard extended landing pattern numbers.**

Then, Carrier Air Group (CAG) Paddles came on the radio and asked how the plane was flying so that he knew what he and his LSO team were up against. I informed him that the aircraft was flying without issue so far and that, while I could not be sure, I had a feeling the plane would hold on long enough to get us aboard. We landed successfully, picking up the three-wire (our target) with the aircraft usually flying the entire time. We were shut down in the wires and towed to our parking spot.



Once chocked and chained and outside of the aircraft, I watched as the starboard inboard nacelle panel was removed, and a vast amount of hydraulic fluid came pouring out from the entire length of the bottom edge. Then more than ever, I was glad we landed when we did. We learned later that a clamp on one of the hydraulic lines had failed and was bleeding out our entire flight hydraulic system.

While the pressure held throughout the duration of the flight, it would not have if we remained airborne for much longer. The E-2D has two separate and redundant hydraulic systems known as the flight system and the combined system. Ideally, the aircraft would have remained airworthy had we lost our flight system. The combined system would isolate itself to all flight control surfaces but require emergency backup activation of flaps, landing gear and brakes.

Fortunately, for the crew of 603 and me, it never came to that. The crew resource management (CRM) to quickly address the situation at hand inside the plane was paramount in getting home safely. The flexibility of the tower and flight deck to recover us immediately was also incredibly helpful, and any lingering concern I had remaining as we rolled out on final was eased after talking to CAG Paddles.

The HYD FLU QTY light is an issue that has long plagued Hawkeye aircrews, but as a community, we have always made a point of honoring that light as if it were actual every single time, just in case you encounter the rare situation when it is real. On this flight, that light was an “actual,” and the teamwork and cooperation from multiple entities ensured we got home quickly and safely, one of the absolute best parts of our job.

# What Kind of Pilot Are You?

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**1. Which was the first battle that showed an aircraft could inflict serious damage to the heaviest armored warships either at sea or anchored in a bay or harbor?**

**A**

Pearl Harbor

**B**

Battle of Taranto

**C**

Leyte Gulf

**2. As an added security measure, aircraft from a supercarrier do NOT carry marking that would identify from which supercarrier the aircraft were launched?**

**A**

True

**B**

False

**C**

It depends

**3. As an additional safety measure and to ensure alertness on the part of deck crews, flight operations aboard a supercarrier are usually restricted to «dawn to dusk» hours of operations.**

**A**

True

**B**

False

**C**

It depends

**4. Which of these is a slang term for the set of lights at the stern of the ship that directs pilots when they land on the carrier?**

**A**

Meatball

**B**

Softball

**C**

Bowling ball

**5. For landing a plane on a carrier, who developed the landing equipment?**

**A**

McDonnell-Douglas

**B**

Wright Brothers

**C**

Curtis and Ely

**6. What was the name of the first U.S. aircraft carrier?**

**A**

USS Enterprise

**B**

USS Lexington

**C**

USS Langley

**7. During the landing of a plane on the supercarrier, the aircraft pilot maintains maximum flight speed until they can identify the proper landing glide slope (usually at about 3/4 miles from the ship), and reduce power (speed) for the landing (trap).**

**A**

True

**B**

False

**C**

It depends

## 5 to 7 POINTS SKILLFUL

This (skillful) pilot carefully makes the plan for the flight, checking and double-checking everything before he or she follows it. They value safety and monitor the performance thoroughly. He or she will re-plan if needed, analyzing the flight after landing, to take notes on how to improve for next time. The skillful pilot knows how and when to take the lead and control, and is confident in his or her skills. He or she will take responsibility for the safety of each flight and has a great ability to handle stressful situations.

## 3 to 4 POINTS ENTHUSIASTIC

A critical trait for enthusiastic pilots is their precise and determined personality. When it comes to safety and planning, they pay attention to details and are committed to fly frequently, conducting a safe, high-quality performance. They are energetic and have a great willingness to learn. They self-evaluate, know their weaknesses, and love solving problems or improving their skills.

## 0 to 2 POINTS FRESH

A "fresh" pilot believes in lifelong learning and understands the importance of training. This pilot keeps improving his or her skills and never stops learning. Their most considerable skill is humility, as they value the experienced pilots and learn from them, flying and performing tasks safely. The other skill they possess is knowing how to respect their colleagues, flight regulations and procedures. This pilot's top priority is a safe environment, behavior, and respect for those on board and the aircraft.

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# 'SAFETY IS A BYPRODUCT OF

The phrase "safety is a byproduct of professionalism" is one frequently heard around Red Ripper (Strike Fighter Squadron (VFA) 11) spaces. Through every single maintenance action and flight, Red Rippers professionally adhere to training, checklists and procedures, resulting in a safe, efficient and lethal combat-ready squadron.

Each quarter, the VFA-11 Safety Department organizes a squadron-wide safety standdown.

However, the Red Rippers have changed the setting from the all-hands auditorium to a much smaller, Chief-led work center setting. In this setting, we share lessons learned, address any concerns individuals might have, and give training on new maintenance practices for the Fleet. Since making the change to a smaller group setting, we have seen a significant increase in the interaction between Sailors and facilitators.

Conducting a squadron-wide safety standdown in an auditorium setting is ideal for sharing annual mandatory training efficiently. However, audiences in these settings generally stop retaining information at around the 30-minute mark. To understand the climate of the Sailors and uncover their concerns, Red Rippers found it necessary to provide a smaller and more comfortable environment where Sailors were more likely to speak up and participate. Adding to this, having their Chief lead the discussion allows the training to become more of a discussion, instead

By **LT Frank Goldstein**

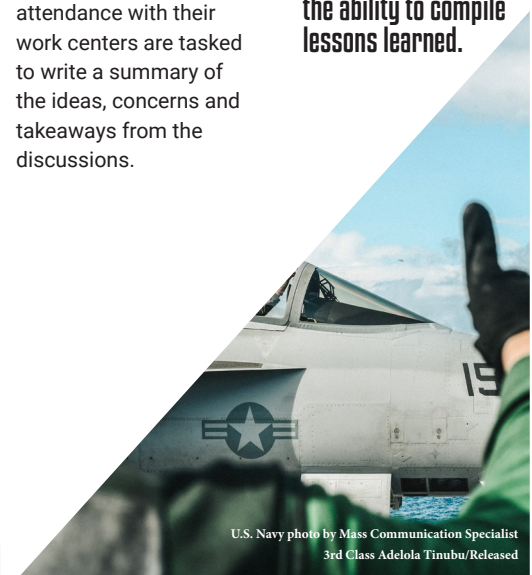
# ...Professionalism...

of regurgitating brief slides. To facilitate the quarterly stand-downs, the squadron safety department conducts a meeting with senior enlisted leadership to discuss quarterly training goals, including mandatory topics, lessons learned from recent mishaps reports (MISRECS), and hazardous reports (HAZREPS), as well as specific feedback from Sailors. Having this discussion with the maintenance leadership also allows us to develop topics and talking points for the standdown. Following this meeting, safety department leadership generates discussion topics for each work center to begin discussions, and the Chiefs take it for action. One of the most effective components of this process is the ability to compile lessons learned. Division officers in attendance with their work centers are tasked to write a summary of the ideas, concerns and takeaways from the discussions.

The safety department then compiles and writes a document for dissemination to squadron leadership to provide an idea on how we can improve our safety environment in the future.

Since changing the safety standdown format, we have seen much greater participation and buy-in from members of the squadron. Officers and Sailors have a voice and the ability to speak up when they see an issue, no matter how small. Within this small group setting and professional atmosphere, safety becomes part of the routine, allowing the Red Rippers to focus on maintaining the highest levels of lethality and readiness on the flight deck.

**One of the most effective components of this process is the ability to compile lessons learned.**



U.S. Navy photo by Mass Communication Specialist  
3rd Class Adelola Tinubu/Released

# An OIR Medevac Becomes 'Turn Back'

By **LTJG Angela Stearn**



There were plenty of factors to consider for such a robust flight. The first decision involved the risk of stretching the wing's standard operating procedure (SOP) for ship-to-shore and shore-to-ship limits. With such a long flight across the water and considering fuel burn rates, any ship-to-shore flight over 250 nautical miles (NM) was prohibited.

However, we knew we had other divers available if needed. Additionally, adverse weather was forecast to begin moving in that might cause problems on the back end of the mission. Analyzing the hazards and in consultation with the squadron and air wing leadership, we determined that the benefits of rescuing a fellow flyer outweighed the risks. Less than one hour after notification, our crew, with the addition of our hospital corpsman and air wing flight surgeon, was off the deck for the 300 NM flight over open water. The beginning of the flight was benign as we split the Cyprus-Turkey corridor and established communications with Nicosia radar. Still feet wet and 50 miles from Incirlik Air Base (LTAG), but only 15 miles from the coast, we received a call on guard to contact a different Turkish controller. We complied, and the Turkish center controller responded with, "You do not have diplomatic approval, so you should turn back immediately."

The helicopter aircraft commander (HAC), Lt. Cmdr. Wesley Johnson, passed our diplomatic clearance number; however, the air traffic controllers stated we did not have a flight plan on file and ordered our return to the ship. Although we passed them our filed flight plan information, we continued to hear, "turn back now." The controls said, "Unable, we are at low fuel state, request to proceed directly to Lima Tango Alpha Golf." After what seemed to be forever, we were

authorized to continue directly to Incirlik - or so we thought. Upon entering Turkish airspace, we noticed traffic off the 11 o'clock. We saw what we later visually identified as a Turkish F-16 intercepting us. We broke away from the coast and climbed for better reception to reach the Incirlik approach instead of the center. The aircrew gunners continuously gave updates on the jet's position as it circled our helicopter. Still new to this environment, I could feel my heart rate increasing and a growing sense of tension coming from our crew in the back. The level-headedness and voice of reason that came from our HAC kept the team at ease and instilled confidence that we would safely complete our mission.

"Everything is fine. They are doing what we would do in this situation," he said as if knowing all of our thoughts simultaneously. After a few laps and communicating with the Incirlik approach, the fighter jet returned to its home base. We landed safely at Incirlik Air Base minutes after sunset, and our medical team began examining the pilot. They took some time to evaluate the pilot's condition and concluded that he suffered symptoms of decompression sickness (DCS), but was fit for helicopter transfer back to the aircraft carrier. We now prepared for the return trip, but with all the commotion of rescuing the patient, getting fuel, and saluting every senior member of the base, we failed to get an update on our weather before departing Incirlik.

As we headed south, there was lightning in the distance, so we contacted air traffic control to get an update on the weather, and asked for vectors to circumnavigate anything threatening. The controller assured us a southerly heading would bypass the storm.





That held for about ten minutes. Once we were over water, our reference to the horizon vanished, and the lightning became so frequent that our night vision goggles bloomed out, eliminating a vital situational awareness builder. Flying right seat, I instinctively shifted my scan to instruments and hawked the gauges to avoid vertigo as the turbulence jostled us around. Control continued to give us vectors in an attempt to keep us clear of the storm, but that proved futile as we started to encounter rain. We kept pressing through the storm with caution, turning west and hugging the coastline of Turkey, hoping to turn toward the carrier eventually.

Lt. Cmdr. Johnson took the controls and brought us around as one of our crewmen said, "Sir, I think that's hail." Acknowledging the immediate danger, we continued our turn away to avoid damage to the aircraft. Like any good *Approach* article, the swiss cheese started to line up and our radar altimeter failed,

causing our altitude hold to switch to the alternate barometric altitude hold. Lt. Cmdr. Johnson flew us out of the hail as I worked to troubleshoot our equipment failure. Reinitializing the system accomplished nothing but frustration and resetting the circuit breaker was just as unsuccessful. At this point, we accepted the loss in capability and started to work through the decision of whether to keep pressing toward the ship or turn back toward Incirlik. We considered such factors as patient care, fuel state, weather, location of the carrier and aircraft degradations. Our HAC listened to the medical team's assessment of the patient, and Lt. Cmdr. Johnson made the final decision.

We squawked "emergency," and we were vectored for a safe return back to Incirlik. We decided to remain overnight and try again the next day, which yielded better weather and an uneventful return to the ship. The experience resulted in several valuable lessons learned.

First, remain mentally alert for every flight. A routine flight can turn dynamic in a matter of seconds. The crew woke up that morning, planning for the usual plane guard flight and ended up flying a long-distance medevac mission.

Second, check the weather. Had we taken the extra 10 minutes to get a clear image of the forecasted weather, we may have entirely avoided putting ourselves into an uncomfortable situation.

Finally, as a leader, the aura you project in a high-stress situation matters. Lt. Cmdr. Johnson's calmness and confidence kept the entire crew composed during an air intercept, thunderstorm and aircraft emergency.

I hope you, too, take away a few lessons learned from our mistakes, strive for excellence and always be ready to execute the mission.

# Pressurized into an Expedited Recovery

By **LT Katherine Smisson**

**FY 2019 Grampaw Pettibone Individual Written Award Winner**

The E-2 Hawkeye community is not known for experiencing physiological episodes, and hopefully, my story is an isolated event. When I woke up the day of our incident, I had no clue that my crew would launch and participate in an alarming physiological episode (PE). The E-2D Advanced Hawkeye crew is made up of five aviators, including two pilots in the cockpit and three Naval Flight Officers in the aft Combat Information Center (CIC). With this many aviators, the proper application of Crew Resource Management (CRM) is important and expected. Safety of flight and successful mission execution relies on each crewmember executing specific responsibilities. CRM is the "effective use of all available resources by crews to safely and effectively accomplish a mission or task." On that day, my crew demonstrated proper CRM during a dynamic aircraft emergency. Operating in the Adriatic Sea, our mission that morning was to support close air support training before the strike group began its transit to the 5th Fleet area of responsibility. Following standard mission and naval aviation training and operation procedure (NATOPS) briefs, we walked on time to catapult two and conducted an expeditious pre-flight and man-up on aircraft 602. During the case one departure, we started our climb out from the carrier, and the pilots completed proper climb checks as the CIC crew set up the weapons systems and conducted asset check-ins.

For our crew, we had a weapons and tactics instructor in the farthest aft seat, as well as an air control officer (ACO) and a fairly new squadron member as radar officer (RO). I sat in the middle seat as the combat information center officer (CICO). Upfront, our senior pilot and maintenance officer sat in the left seat as the carrier aircraft plane commander (CAPC), and a new pilot sat co-pilot in the right seat. Everything appeared to be going well as we continued our climb to the station. Passing through 18,000 feet, the CAPC voiced feeling strange, and the entire CIC agreed that they also were not feeling quite right. In the moments that followed, nausea and the constant need for Valsalva became quite evident, which was our first physiological indications of an aircraft pressurization failure. These symptoms caused the CAPC to recognize that cabin altitude dropped below the expected 5,000

feet setting, causing him to level off the aircraft at 21,000 feet. With cabin altitude dropping to negative read value, the co-pilot and I immediately referenced the pocket checklist (PCL) to execute the cabin pressurization failure emergency procedure (EP). At the same time, the master caution light illuminated with an associated onboard oxygen generating system (OBOGS) Low Purity Warning, OBOGS Degrade Warning and OBOGS Fault Advisory requiring the pilots to switch OBOGS off and execute another EP, OBOGS System Faults.



Historically, if the aircraft fails to pressurize correctly, it is due to the cabin pressure outflow valve becoming stuck in the open position. As the RO went forward to "tap" the outflow valve in accordance with the EP, it was evident that the outflow valve was closed, and we were experiencing a cabin over-pressurization, a situation for which we do not have an EP. The cabin pressurization readout was negative and continuing to drop.

Post-flight, the automated learning environment (ALE) data showed our cabin altitude bottomed out at -6,800 feet. The OBOGS system was not available due to degrades and system faults, and we immediately opted to descend below 10,000 feet to depressurize the cabin. Once below 10,000 feet, the CAPC took the cabin pressure switch to dump and stopped the cabin over-pressurization. Now leveled off at 7,000 feet, the cabin pressure equalized to match outside air pressure. As a crew, we discussed our symptoms and how they were improving. We opted to remain at our current altitude and re-evaluate our ability to continue the scheduled mission. Once we elected to continue on mission, the CAPC switched the cabin pressure switch back to normal, and the aircraft pressurized back to 5,000 feet cabin altitude and held steady. As we climbed, the cabin failed to pressurize, and cabin altitude began to climb past 5,000 feet. The RO went forward to "tap" the outflow valve and found it was stuck open, indicating that the cabin had now failed to pressurize, not over-pressurize. At 12,000 feet with cabin altitude at 6,500 feet, the CAPC immediately elected to discontinue the climb and descend to 5,000 feet. At the same time, the CAPC pointed the aircraft back toward the carrier, and I reached out to request an early recovery on the next cycle in about 40 minutes.





U.S. Navy Photo by Mass Communication Specialist 3rd Class Nikita Custer

As the crew's symptoms returned and began to worsen, the ACO voiced that we needed to get on deck immediately. We all agreed, and I reached out again and requested an immediate recovery due to the crew experiencing physiological issues. The ACO was communicating to the ready room, informing the squadron duty officer of everything occurring in the aircraft. The CAPC reached out directly to the tower to coordinate for the emergency pull forward.

This was when I realized that my symptoms were indeed worsening. My head was throbbing and my left leg was shaking. My left foot was tingling and I could not control my left hand. The ACO and RO were also experiencing a variety of symptoms to include loss of some cognitive and mobile abilities. The CAPC voiced to the Air Boss the crew's status and the transition to emergency oxygen. Another obstacle became evident once the pilots were on oxygen. With the co-pilot's oxygen mask on, his internal communications with the crew were broken and unreadable. The CAPC opted to take over all radio communications and checklists to facilitate our expedited recovery. We ran through the approach checks and set up for a straight in as we began to dump fuel. The CIC was experiencing trouble with our ability to communicate inside and outside the aircraft. The ACO's cognitive ability continued to decline, and without realizing, he was repeatedly attempting to open the incorrect chat program on the laptop. I found myself unable to manipulate my ICS and radios as dexterity and clarity of mind were lost. The RO put on his mask and then stopped responding. He appeared to have passed out! Throughout the entirety of the descent, the front end of the plane was on emergency oxygen, but the CAPC's symptoms had not improved.

The CP repeatedly asked the CAPC if he was still able to land on the ship. The CAPC responded that he was and continued our descent.

We secured fuel dumps 4-5 miles aft of the carrier solely due to the fuel tone sounding. Fuel dumps had fallen entirely out of the scan of the entire crew. The CAPC then turned to intercept final, and in the process, his emergency oxygen bottle depleted, causing him to pull his mask off to breathe, with one side still hooked up to accommodate mic usage.

At this same time, the OBOGS LO Purity, OBOGS Degrade Warnings, and OBOGS Fault Advisory came back on requiring the CAPC to turn the OBOGS system off for a second time. We dirtied up the aircraft just before three miles. As the front of the plane executed landing checks and the gear came down, the ACO tried to remove and stow the CIC ditching hatch. When he verbalized that it was stuck, we then realized that the aircraft had over pressurized again, this time to -1,600 feet cabin altitude despite being at 1,000 feet. The CAPC recommended we continue the recovery with the CIC ditching hatch installed and I concurred. We could not continue to fly this aircraft for any longer than necessary. Paddles talked us down into the three-wire, and once on deck, the cabin pressure equalized back to sea level. We taxied clear of the landing area and shut down on catapult two, right where our morning had begun.



U.S. Navy photo by Mass Communication Specialist 2nd Class Sean Elliott

## LESSONS LEARNED

Upon exiting the aircraft, medical personnel ushered us to the flight deck medical station, where we were evaluated and put on oxygen for the next several hours. In the following days, we learned the extent the crew had been affected by the pressurization event. All five of us were cognitively and physically affected. Our inability to complete the simple tasks in the medical station of connecting dots and drawing shapes showed us how grave a situation we had endured. The lesson to be learned from this experience is that you should always practice proper CRM. Even with our minds and bodies affected, we were able to divide tasks and operate in a way that prioritized the safety of flight and maximized information flow. I was on the radio with the watchstander, the ACO was in chat with the squadron's duty officer and the CAPC was in communications with the tower.

The co-pilot and RO were executing the EPs and backfilling the rest of the crew. Each of us had a role in getting our aircraft and crew safely on deck, and the excellent CRM habits we consistently practiced helped get us there.



# The New Guy Gets His First Taste of Trouble

By **LT Christian Sandroni**

There was a full moon out in the North Arabian Gulf, I had good needles, and the boat was in sight. As a new guy who had already developed a reputation for settling in close, I already had the ball on my mind when the ever feared “deedle-deedle” from my master caution rapidly brought my attention back to the here-and-now. I had a flight control system (FCS) caution on my digital data indicator display (DDI), and all four angles of attack (AOA) channels were crossed out on the FCS page.

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It was one of those nights where everything was going a little too well.

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I lost my heads-up AOA indicator, and neither probe was showing an AOA that correlated with our airspeed. Without reliable AOA indications, I was without my most important tool for making a safe landing. I would have to change my scan. I would have to rapidly incorporate airspeed, vertical speed indicator (VSI), and velocity vector, while simultaneously flying the ball and listening to the landing signal officer (LSO). With that in mind, my electronic warfare officer (EWO), and I decided to discontinue the approach to troubleshoot and work through the checklist.

The controller vectored us to 2,000 feet, and we started talking through the four-channel AOA failure checklist. In the middle of our initial discussion, our rep came up and asked what was going on. We gave him a one-sentence summary and told him to stand by while we went through the checklist. The checklist itself isn't all that long or complicated, but I was a little uncomfortable with the idea of flipping a guarded switch and going into gain override.

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The controller vectored us to 2,000 feet and we started talking through the four-channel AOA failure checklist.



In retrospect, I shouldn't have been. The aircraft handles fine in gain override. There are just some specific airspeed limitations depending on the configuration. Admittedly, my Naval Aviation Training and Operating Procedures Standardization Manual (NATOPS) knowledge weren't all that robust when it came to the FCS. I hadn't seen that emergency in the replacement air group (RAG), and being a new guy who met the squadron one month into the cruise, I was spending most of my time learning how to operate around the boat and trying to catch up on basic tactics knowledge. As a result, some of my basic NATOPS study time fell by the wayside. My subsequent lack of confidence in my knowledge ultimately made a bad situation worse and could have led to more severe consequences.

When it comes to flying in gain override, the first consideration that NATOPS talks about is airspeed: the jet is limited to different airspeeds based on configuration. The second note talks about needing a substantial back stick to avoid an excessive settle after a bolter. In addition, NATOPS recommends that you not deselect gain override if the aircrew needs to return. It does not, however, mention anything about the inability to reconfigure the jet. You can configure and reconfigure all you want in gain override, as long as you adhere to the particular airspeed limitations. My EWO and I discussed the notes in NATOPS but did not discuss our game plan of a bolter, aside from the need for substantial positive rotation. Most of the time on the approach was spent trying to communicate with our rep. For whatever reason, we could hear him, but he couldn't hear us. As a result, we spent an unnecessary (and unhelpful) amount of time trying to communicate which specific built-in test logic inspection (BLINS) we had. It was pretty distracting for me as I tried to focus on flying my approach on airspeed alone, and I should have come up earlier and told our rep to standby. Instead, we fought the communication issues pretty far down the chute.

As I got to the in-close position, I was fast and ended up bolting. Having not thought or talked about a good bolter game plan, I just went through the muscle memory of gear up, flaps half. Then I had a little panic. For whatever reason, I needed to stay dirty and that I couldn't or shouldn't reconfigure. So about a second after I brought the gear up – with the gear still in transit – I quickly brought the equipment back down. And as if things weren't bad enough, I got two flashing main mounts and the flashing light in the gear

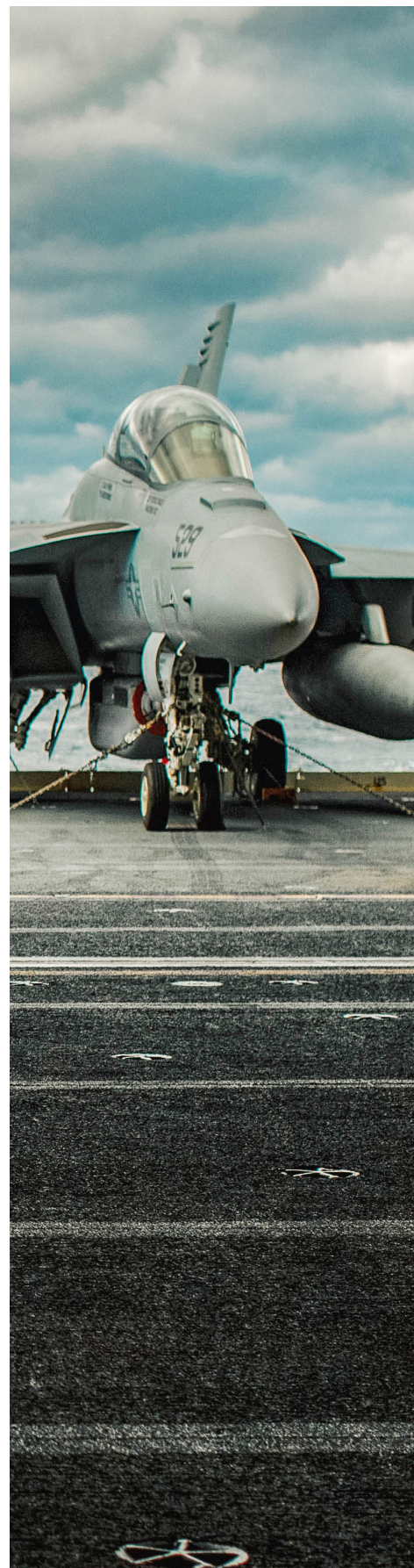
handle. At this point, I decided that gas was the most important thing in my life, so I brought the gear up and started looking for the tanker.

Unfortunately, the tanker wasn't hawking us, and he didn't know we were in extremis. We asked him to slow down and tried to drive him around to help affect a quick join, but as he tried to "help" us instead of just doing what we asked, it prolonged the join for an extra five minutes. Eventually, we got joined and got the gas we needed for another pass. But I got low and slow inside the ball call on the subsequent pass and got waved off. At least when I dropped my gear, the unsafe gear indications from earlier were gone and everything looked good. At this point, because of the inefficiency of the first tanker join and his limited give, we were back to tank state. Thankfully, the turning tanker, last recovery (TTLR), had been launched and was in perfect position. We quickly got joined, got a healthy amount of gas and headed down the chute once more. After having two previous runs under my belt, my scan was faster, and I was able to fly a more controlled airspeed.

Additionally, paddles took a much more proactive role in the pass at the start, giving me a good talk down into the wires, ending a very long, very stressful night. Looking back on the evening as a whole, I think there were three major learning points. First, we had a good plan in our cockpit and we had effectively communicated our intentions with the carrier air traffic control center (CATCC), so we didn't need our rep's input.

We spent an unnecessary amount of time struggling with the radios, driving a more hurried and less focused approach. Already a little behind the aircraft from the approach, I couldn't catch up as I hit the start and got further wrapped up in flying the ball. The take-away is easy enough: have a stronger foundation of basic NATOPS knowledge so that uncommon malfunctions don't become emergencies. Finally, being a crewed aircraft, my EWO and I could have used better tactical crew coordination (TCC) on several fronts. Most notably, after going through the initial checklist, we could have split up radio responsibilities, allowing us to communicate with our rep, CATCC and the tanker much more efficiently.

As it was, we made it back down just fine. Everything ultimately worked out. But we could have done things better, and I probably ended up maturing as an aviator a little more than I expected that night.



# Every Precious Second

By **LT Greg Adkins**

**The day started like any other, and there was a sense of excitement in the air. Our squadron was about to fly out to our ship for carrier qualification as part of a composite training unit exercise (COMPTUEX). Most of our squadron was already on board, including virtually all of our maintainers. Only the minimum crews had remained behind at Naval Base Ventura County (Point Mugu), California.**

We had been executing field carrier landing practice (FCLPs) for the previous two weeks and were all very excited to get to the ship. We had a plan to fly out as two sections and briefed everything accordingly. The man-up was standard for each of the four E-2 Hawkeyes, with a fellow Point Mugu squadron lending their maintainers to get us airborne. I was the copilot for the dash two Hawkeye in the first section. Nothing unusual happened with the startup, and we taxied out to the active runway. During the taxi, there were a few flickers of the left engine vibration (L ENG VIB) advisory light, which illuminates when vibration levels exceed specific parameters in the engine analyzer unit (EAU) software for greater than two seconds. This occurrence is not uncommon in the Hawkeye, so we took note of it but were not concerned that it signified any broader issues. The tower cleared us, and the takeoff was standard for our section, though our climb-out was a series of unusual vectors provided to us by departure to avoid other operations and warning areas in the vicinity. We joined up on our

lead in the starboard parade position and finished our climb checklist. I was focused on the navigation responsibilities as the copilot, while the pilot focused on maintaining a position in the formation. We were in a steady climb at approximately 8,000 feet just north of our home field when the master caution illuminated. Both the pilot and I looked at the annunciator panel to see what triggered it. There were no lights illuminated on the panel, so we looked to the props panel above the left seat as we had been trained to do. The left prop pump main light was illuminated and remained on steadily. We immediately divided responsibilities and began executing the appropriate procedures. The pilot communicated to the lead aircraft that we had to break away and that they should maintain course and climb. He simultaneously advanced the left power level to the max in accordance with the boldface for the "propeller pump light(s) – steady" emergency procedure. We then broke away from lead to the right and toward the home field and leveled off at 8,000 feet.



U.S. Navy photo by Mass Communication Specialist 3rd Class Jarod Hodge

While this was happening, I was communicating externally to approach control and declaring an emergency so that we could immediately return to the home field. I told them the nature of the emergency and that we would need to proceed directly and would require a field arrested landing with a single-engine. We were traveling about 150 knots in the climb, and this only increased when we leveled off and advanced the left power lever to the max, so we were well above the 135 knots minimum set by the emergency procedure.

The procedure states that we should shut down the respective engine with the condition lever if it is normally governing. In our training at the FRS, we had been taught to vary the load on the propeller to check and see if it is, in fact, governing. The point was driven home to us multiple times that just because we saw 100 percent on the engine rpm gauge, it did not mean that the electronic propeller control (EPC) was governing correctly. Our instructors also stressed the importance of what could happen if it wasn't governing normally, and we tried to shut it down early. A safety feature in the EPC, the pitch rate delay (PRD) limits the blade angle change if it senses a loss of fluid flow through the prop pumps and a blade tracking error. This feature is designed to prevent the counterweights from driving the blades toward feather in the event of pump cavitation during a negative-G maneuver.

In the event of fluid loss, PRD can also serve to allow a slow blade angle to increase up to an equilibrium blade angle, not fully feathered, but close enough to enable the aircraft to be fully controllable.



Having all of that in the back of our minds, we were about to try and adjust the propeller load and see if it could normally govern when the plane began to shake and shudder. We felt the swerve of rapid asymmetric thrust and looked at the instrument panel to see the left engine's rpm rapidly drop as low as 60 percent. The final step in the emergency procedure is, "if normal governing cannot be maintained, the engine should be secured with the condition lever when the engine can no longer maintain 91 percent rpm."

We grabbed the condition lever to shut down the engine. The pilot moved it to the feather position. The propeller feathered usually, and the pilot was able to regain full control of the aircraft and maintain altitude at 7,000 feet. We took a few seconds to breathe as a crew and evaluate the status of the aircraft. Now, with the right engine running strong, the left fully feathered, and all other indications normal, we proceeded to run through the necessary checklists. We executed a controllability check to make sure the aircraft functioned as expected through all regimes of flight. Then we finished the checklists needed while the field crew worked to rig the arresting gear. The pilots briefed the crew on the plan, as well as communicating with the assisting squadron back at base. We elected to set up for a straight-in approach to an arrested landing and executed it with no further issues.

We learned that the simulator could never prepare you for every possible situation, and it paid to have good systems knowledge on the aircraft. The scenario we practiced over and over in the simulator during training was not at all what we experienced in real life, and we were surprised when the engine ultimately failed on its own without indications of PRD or waiting for our feather command.

There is a note in our Naval Aviation Training and Operating Procedures Standardization Manual (NATOPS) manual that does not appear in the PCL that states some failures resulting in hydraulic fluid loss will not engage pitch rate delay. That is what happened to us. After the maintenance inspection, we were informed that there was no prop fluid remaining in the reservoir, and if we had not secured it as soon as we did, we might not have been able to feather it at all. We were all thrilled that the situation played out as well as could be expected. However, it is never fun to look back and think about what could have occurred if just one small variable was changed, or we had waited only one second longer. Had we been any later, the propeller on our critical engine may not have feathered and we would have had an uncontrollable aircraft. The end for such scenarios in the simulator is rarely a good one, and that is what gets the pucker factor going after the fact. If I may offer some advice, it is to know your aircraft, understand the prescribed procedures, and trust in your brain as well as your gut when things start to go wrong.



U.S. Navy photo by Mass Communication Specialist Seaman Jarrod A. Schad



Standby New INS

# HOLDING INSTRUCTIONS

For the Fifth Time

Photo by Petty Officer 2nd Class Jakoeb VanDahlen

By **LT Clay S. Elward Jr.**

Despite the incessant heat, lack of wind and constant mugginess, the South China Sea presents some of the most picturesque seascapes in the world. On this particular evening (June 24, 2019), I was fortunate enough to be in the left seat of aircraft 600, dubbed lovingly by our squadron as “The Opal of the Orient,” known for her reliability. In my right seat was a super junior officer (JO) and a very experienced Hawkeye Carrier Aircraft Plane Commander (CAPC). We were tasked to control a Hawkeye Controlled Approach (HCA) and execute a “trap-cat-trap” in order to keep both myself, a junior pilot, and the CAPC night current.

As we taxied to catapult number three, everything seemed perfect for the launch. The plane had passed all ground checks, and the systems were looking 4.0. We rogered up the weight board, ran up the motors and saluted the shooter. As we were launched off the deck of USS Ronald Reagan (CVN 76) into a beautiful pink sunset, I put our aircraft into flyaway attitude, began a left hand clearing turn and raised the gear.

As our gear was in transit, we heard the tell-tale “deedle-deedle” of a master caution. More intent on flying the aircraft away from the water than looking inside at our gauges, I continued to climb until we leveled off at 500 feet and turned to parallel Basic Recovery Course (BRC) after our clearing turn. Then, looking inside, I saw the caution “Tow Link.” The caution has a two-fold meaning: either the tow link (the launch bar in the VFA/VAQ communities) was still down, or our nose wheel was cocked past 10 degrees.

The boldface procedure for this emergency is simple enough: “Check Nose gear visually before raising gear.” However, as in most cases of this emergency, the gear was already in transit as the caution sounded. Frequently it is merely a bad wire or connection in the circuit with no real issue. We made the decision to get away from the carrier before we lowered our gear to check anything and continued our Case I departure and began to climb away.

After departing the terminal area and establishing a climb, we communicated the

malfunction to the Air Boss, then slowed the aircraft to below gear speed and lowered the gear as we continued to climb. The sight window in the cockpit can only let the pilots confirm whether the nose gear is centered or not, and as far as we could tell, it was centered, but the status of the tow link itself was still in question. Our next course of action was to get another aircraft to join us for a visual inspection. Our Combat Information Center Officer (CICO) immediately reviewed the air plan to determine nearby aircraft and cross-checked it with whom he saw on the scope launching from the ship. We assessed the best course of action was to get an E/A-18G Growler to join up, as they had a pretty light mission for the event. Our CICO reached out on their tactical frequency and they agreed.

After leveling off, we lowered the gear and then sped up so that the faster jet had some airspeed to play with when joining up. While this would burn more gas than we wanted to, we were scheduled for a relatively short double cycle, and we could afford to burn more gas than normal to troubleshoot.



It did not take long for the Growler to join upon us and confirm that our nose gear was centered, and the tow link was up. After the Growler cleared off, we raised the gear, communicated our status to the ship and continued on the mission. The rest of the mission continued without a hitch, and after its completion, we proceeded to check-in with Marshal with plenty of gas to meet our required fuel for our first pass. The ship gave us marshal instructions at 6,000 feet and told us that we were to do a low pass for Paddles to get a good look at the gear, then we would be vectored around for a second approach for the trap.

The beautiful weather we had launched into was no longer. Pop-up storms now littered the airspace, and illumination was near zero. The last event of the night was canceled, and, as we hit our holding point, one of the fighters suggested a change in marshal radial due to the weather. Marshal concurred, and we put in a turn to expeditiously move over to the new radial to meet our expected approach time. As we were transiting over to the new radial, I noticed that we seemed frozen in space. Our tactical navigation indicated no change in radial or DME, and the CICO brought up the same issue. We immediately communicated our status to Marshal and asked for vectors. Instead, we were given "600 standby INS holding instructions" at 6,000 feet. Manually inserting INS holding points in the E-2D is not a streamlined task, but our CAPC quickly went to work. The CICO provided an initial steer, utilizing the E-2 weapons systems, and we were established five minutes later.

Then, we again heard Marshal's voice "Standby new INS holding instructions," moving the point again and this time putting us at 15,000 feet. Simultaneously, an F/A-18 Super Hornet was cleared to hold at 6,000. The ship had decided to forgo the Paddles inspection, strip the 3-wire to avoid an unsecured tow link catching it and bring us down last.

The new marshal instructions immediately raised concern in the cockpit. We were currently at an altitude that a fighter was just cleared to, and we had to climb up through altitudes occupied by multiple aircraft to enter our new marshal altitude. Our CICO immediately went to work, using the aircraft's systems to once again give us an initial steer and clear us of traffic as we climbed. There was a constant string of communication front to back. We were blind in the front, relying solely on direction from the back end. In marshal, we requested an expected approach time but were told to standby as the rest of the air wing commenced. We shifted focus onto conserving fuel. We burned more than expected to allow the Growler to join, had a higher fuel flow at 6,000 feet than we normally burn at the top of the marshal stack, and had to use even more fuel to climb back up to 15,000 feet.

The CICO broke out the pocket checklist and ran the Bingo numbers to our nearest divert. We set our system Joker alert for that value as we wanted to have that option in our back pocket. Encountering moderate turbulence, we were again given new INS holding instructions, this time at 6,000 feet, and once again, the CICO cleared us of traffic and gave an initial steer. His backup and thorough understanding of carrier Naval Aviation Training and Operating Procedures Standardization Manual (NATOPS) procedures allowed us to safely operate in a congested environment at night, with poor visibility and no tactical navigation.

Having been in Marshal for close to an hour, we were given one last set of INS holding instructions and repeated the process of remarshaling as a crew. In the process, our Joker advisory alert sounded, we were now below Bingo and officially landing on-board that night. Once all other aircraft were on deck, we were given a manual push and vectors to final. The approach was normal. On final, I had a good approach but was already hundreds of pounds light of my blue-water state. Carrier Air Group's Paddles came up over the radio, "600 good evenings from the platform, we're working MOVLAS, and I'll be talking you down." The first pass brought me in on an uncomfortably steep glideslope, the 2-wire was out of battery, and the three stripped to accommodate for the tow link. We needed to catch the one wire. Upon hitting the deck, there was no stopping, and I heard "Power back on, hook-skip bolter." I assumed a fly-away attitude and came around to try again.

Light on fuel, I was back on the power in order to fly the steep glideslope needed to maintain our hook-to-ramp (the vertical distance the hook clears the ramp on a carrier approach). I bolstered two more times as I inevitably added too much power on the approach, watching the fuel dip lower and lower each time I went around. I was spent from marshaling five times and executing three-night approaches. Being low on fuel, we decided to do a side-to-side crew swap. The CAPC successfully brought us in on his first attempt.

The entire flight was an exercise in Crew Resource Management (CRM), utilizing help inside and outside the cockpit. Without the Growler crew, we never would have confirmed the condition of our aircraft. Without the excellent backup of our CICO, we would have been lost in the stack and climbing through traffic at night with poor visibility.

Finally, without my CAPC and a Paddles talk-down, we may have taken many more laps in the pattern before trapping. Regardless of platform, Naval Aviation is built on teamwork, and sometimes it takes the entire team to get you back in time for MidRats.

# Behind the Power Curve

By **LT James Botzer**

**It is often said in our profession that “speed is life.”**

From the moment we begin training as Naval aviators, we are continuously reminded that we must keep ourselves ahead of the jet and never get behind the power curve. However, on a dark night in September 2018, while flying off the coast of Andersen AFB, behind the power curve is exactly where I ended up. I learned first-hand that recognizing when you are operating on the wrong side of the curve is not as easy as I previously thought, and it almost resulted in the loss of my aircraft. The events following proved to be the most challenging emergency I had experienced in my young naval career.



U.S. Navy photo by Mass Communication Specialist 2nd Class Tammie Schumaker/Released

Operating from USS Ronald Reagan (CVN 76) in the double-bubble configuration, I had just completed a seemingly uneventful night tactical intercept flight and was blissfully flying circles in the marshal stack waiting to commence my approach on-time. As I admired the night sky, I was quickly snapped back to reality by the sound of the master caution tone and the aircraft warning system telling me that I had a problem with my right Aircraft Mounted Accessory Drive (AMAD) in the form of a Pxxx RXXXX (PR) caution. After a quick session of troubleshooting with the squadron representative, I was directed to shut down my right engine and plan on a restart for landing per the Naval Aviation Training and Operating Procedures Standardization Manual (NATOPS). The rep, my wingman, and I all felt like we had a good plan, and I was to commence on a routine (CV-1) approach and restart the right engine for landing.

I commenced the approach, as usual, making sure I kept plenty of airspeed on the aircraft since I only had one engine operating, but when the time came to restart the right engine, things started to get interesting. With plenty of RPM on the good engine, I placed the engine crank switch to the right and... nothing. I tried again—still, nothing. At about 20 miles from the ship, I informed the rep my right engine would not crank. As anyone with F/A-18 experience knows, this is the last place you want to find yourself because all of our primary hydraulics for landing gear extension is powered by the right engine. Since I could not get the right engine to rotate, my only option to extend the landing gear was to use the emergency gear extension procedure.



After a quick discussion with the rep, I discontinued my approach and was placed in the bullpen so I could configure the aircraft. With the rep's help, I stepped through the emergency gear extension checklist and achieved three down-and-locked indications. At this time, I was directed to emergency-extend the in-flight refueling probe to create options in case of a bolter. Since this was the first time I had ever done an emergency gear extension in the actual aircraft, I was more methodical as I stepped through the procedures and the extra time resulted in a lower fuel state. Because of my location relative to the ship, I was directed to proceed to the recovery tanker to get extra fuel before making my approach to ensure I had as many options as necessary in case of a bolter.

During this time, I discovered the issue that would plague me for the remainder of the flight: no matter what I tried, the aircraft would not accelerate. Flying single-engine, now in the dirty configuration with the in-flight refueling probe extended, the aircraft would not accelerate above 150 knots without selecting afterburner. The recovery tanker joined on me but was unable to slow below 180 and still maintain in-flight refueling capability. Upon communicating this information to the rep, there was a quick pause before I was passed the signal to divert.





U.S. Navy photo by Aviation Electrician Technician Airman Josiah Connelly



U.S. Navy photo by Petty Officer 3rd Class Kaleb R. Staples

The closest field to our current operating area was Andersen Air Force Base on the north side of Guam, and with my current fuel state, the decision to divert was early enough to provide a comfortable fuel state above standard operating procedure minimums upon arrival. As I commenced the dirty bingo, the inability to gain airspeed or climb with a single-engine in military power was an uncomfortable reality. I could not add energy to the aircraft, and I had never experienced a scenario where I did not have the thrust available to power myself out of a bad situation in a Hornet. To put it plainly, I needed more thrust to get myself on the proper Bingo profile to arrive at Andersen above NATOPS minimums, but with the afterburner required to meet the required airspeed, I did not have the fuel available to allow prolonged afterburner operation. And, since I couldn't accelerate with military power in my current configuration (dirty, refueling probe extended, and two inboard external fuel tanks), I began to calculate fuel remaining on deck and realized I would flame out before reaching the destination. Little did I know I was flying the aircraft on the wrong side of the power curve.

Figure 1 is used to illustrate the aircraft operating regime as I diverted to Andersen AFB. This general representation of a power curve compares the thrust available ( $T_A$ ) to the thrust required ( $T_R$ ). The vertical axis lists the thrust in pounds of fuel flow, and the horizontal axis

lists velocity in NM. The lowest point on the  $T_R$  curve represents lift over drag max, or maximum endurance and is the point on the curve where the least amount of thrust is required to maintain level flight. To the right of lift over drag max is the region of normal command where pitch affects altitude and power affects speed. However, when aircraft are operating left of lift over drag max, you find yourself in the region of reverse command where power affects altitude and pitch affects airspeed. The region below the  $T_A$  line and above the  $T_R$  curve represents excess power, which is something we typically never lack in the F/A-18.

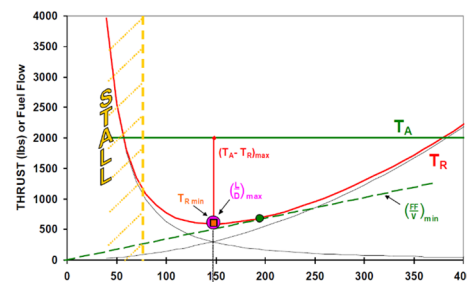


Figure 1

Moving back to my scenario, when I shut down the right engine, I reduced the available thrust by 50 percent. Also, with the landing gear down, in-flight refueling probe extended, two external fuel tanks and trailing edge flaps automatically scheduled down due to lack of airspeed, the  $T_R$  curve had moved up significantly, which reduced excess power and the ability to accelerate in level flight. As visualized in Figure 1 and moving the  $T_A$  line down on the vertical axis to a point where I effectively only had 1,000 lbs. of available thrust, there were two options available to get back into the region of normal command. The first option was to reduce drag, which would reduce thrust required and increase excess power and the ability to accelerate in level flight. The second option was to use potential energy to accelerate above lift over drag max and back into the region of normal command. If there were sufficient potential energy available in the form of altitude, trading altitude for airspeed

would have the combined effect of reducing drag because the trailing edge flaps would schedule up to the faired position as airspeed increased. In either case, the result would be to move from the region of reverse command to the region of normal command. As I continued toward Andersen, still unable to accelerate or climb to make the Bingo profile, it quickly became apparent I was not going to have enough fuel to make it, and after communicating this information to the rep, the decision was made to execute option one, emergency jettison the external fuel tanks (reduce drag). As soon as the tanks left the aircraft, I immediately began to accelerate, and the aircraft was easier to command. The recovery tanker followed me toward Andersen and was now able to transfer fuel based on my ability to maintain closer to 200 knots. As I accelerated, my trailing edge flaps also scheduled up, which further reduced my drag, so I was able to add thrust, although still in a dirty configuration. After receiving several thousand pounds of fuel from the tanker, I was able to make a safe and uneventful recovery at Andersen AFB. The next day, a rescue detachment arrived at Andersen AFB to inspect the right AMAD of aircraft 401 and concluded an AMAD PR caution was caused by an incorrectly installed pressure sensor. Upon return to Ronald Reagan and inspecting the aircraft maintenance card, another issue, which I did not recognize in flight, became apparent. With roughly 3,000 pounds of fuel remaining, I received a Fuel Lo caution while climbing to my Bingo altitude, but this did not register to me as an issue at the time.

However, post-flight data analysis revealed the Fuel Lo caution lit because roughly 900 pounds of fuel migrated out of the feed tanks and became trapped in the wing tanks, rendering this fuel unusable. The migration was caused by placing the IFR probe switch in the emergency extend position and leaving the switch in that position for the remainder of the flight. After digging through the PCL, I found a potential fix for this in the HYD 2A/2B caution checklist, which tells you to place the emergency probe switch in "retract" once complete with aerial refueling (due to loss of HYD 2, the probe will remain extended). After shutting down the right engine per the AMAD PR caution procedure, I essentially induced an HYD 2A/2B failure, and executing this procedure, airborne would have prevented fuel migration to the wing tanks. Before this event, I never would have thought about how much trouble you can get into once you get behind the power curve. Luckily, the outcome ended up only being the loss of two external fuel tanks and not the entire aircraft. I hope that everyone who reads this story will learn from my mistakes and make sure to keep plenty of airspeed on the aircraft when dealing with a single-engine emergency.

# BRAVO ZULU



**Capt Elliott A. Joses**



During normal preflight inspection for a check flight, Capt Joses paid specific attention to the tail rotor drive system beyond the scope of normal aircrew procedures, identifying a potentially catastrophic maintenance error. During a previous inspection on the No. 3 hanger bearing four months prior, a driveshaft alignment was conducted. Unfortunately, the hanger bearing mounting bolts were incorrectly torqued and were left spinning free. The day before Capt Joses' flight, a plane captain missed the discrepancy and conducted a low power turn without noticing the error. Although the Naval Aviation Training and Operating Procedures Standardization Manual only requires the tail rotor driveshaft be inspected for condition and security, Capt Joses makes a personal habit of physically touching each mounting bolt for torque since they have no visual indication of the correct torque application. They freely spun under hand pressure. Since the tail rotor drive shaft rotates at 4,196 rpm, it would have catastrophically failed. Now, a slippage marking is on each mounting bolt in the squadron due to his efforts.

**LT Christopher Foight**



As runway duty officer (RDO) at one of NAS Whiting Field's outlying fields (OLF), it was LT Foight's responsibility to ensure that each of the aircraft in the pattern maintained the safety of flight along with providing a final landing gear check before touchdown. During his shift, an aircraft in the pattern raised the gear to perform a practice precautionary emergency landing (PPEL) from the pattern. As LT Foight coordinated with the remaining aircraft in the pattern, including a student solo in the break and a civilian aircraft, the PPEL aircraft turned on final with landing gear raised. As the aircraft approached the runway threshold, LT Foight acted swiftly and decisively, ordering a wave off on the radio and activating the wave-off lights. Vigilant and attentive, he averted disaster. His actions gave the aircraft time to safely perform a wave-off, preventing a catastrophic gear-up landing and potential injuries to the crew. LT Foight's alertness and attention to detail in a high traffic environment were critical to the safe completion of the air wing's daily training mission.

**AD3 Monica Lazard**



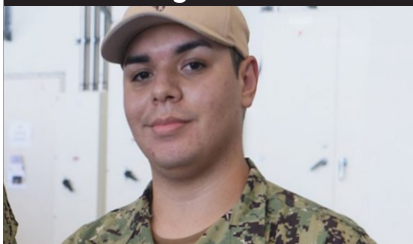
During Foreign Object Damage (FOD) walk down on 2 April 2019, AD3 Lazard found one of the engine oil caps not installed on a P-8A Poseidon. Her initiative to check the #2 engine oil cap, during FOD walk down, prevented a possible engine failure due to FOD ingestion or loss of engine oil in flight. Her actions serve as a hallmark demonstration of incorporating initiative and attention to detail on the flight line, and earned her the Squadron Safety Professional Award.

**AN Vincent Rice**



During operations on 28 May 2019 out of Kadena Air Base, two P-8 Poseidon aircraft were preparing to taxi to the runway when AN Rice noticed an object laying on the taxiway aft of both aircraft. He investigated and found a yellow and black scarf laying on an active taxiway. Without hesitation, he collected the object and removed it from the flight line. His attention to detail and initiative prevented the taxiing aircraft from an engine FOD incident. AN Rice's actions served as a hallmark demonstration of exceptional situational awareness and attention-to-detail and as a result earned him the Squadron Safety Professional Award.

**A03 Miguel Guzman**



As a P-8A Poseidon taxied toward an active runway, A03 Guzman noticed the anti-collision lights suddenly stopped working on the aircraft. He immediately notified the Flight Line Coordinator, who radioed maintenance control and the pilot, who was able to correct the situation, a safety hazard to other aircraft had the airplane used the runway and launched. For his assertiveness and attention to detail, A03 Guzman was awarded the Squadron Safety Professional Award.



## PRINT & DIGITAL



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Strike Fighter Squadron 147  
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Helicopter Maritime Strike Squadron 37 (Expeditionary)  
Fleet Air Reconnaissance Squadron 1 (Tacamo)  
Helicopter Sea Combat Squadron 3 (FRS)  
Fleet Air Reconnaissance Squadron 4 (Tacamo)  
Electronic Attack Squadron 135 (Expeditionary)

#### **Commander, Naval Air Force Atlantic (COMNAVAIRLANT)**

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Carrier Airborne Early Warning Squadron 126  
Helicopter Sea Combat Squadron 11  
Helicopter Mine Warfare Squadron 15  
Helicopter Maritime Strike Squadron 72 (CVW)  
Helicopter Maritime Strike Squadron 46 (Expeditionary)  
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Patrol Squadron 30 (FRS)  
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Marine Medium Tiltrotor Squadron 365  
Marine Light Attack Helicopter Squadron 167  
Marine Attack Training Squadron 203  
Marine Heavy Helicopter Squadron 461  
Marine Attack Squadron 231  
Marine Heavy Helicopter Training Squadron 302  
Marine Heavy Helicopter Squadron 464  
Marine Heavy Helicopter Squadron 366  
Marine Light Attack Helicopter Squadron 269

#### **Commander, Marine Forces Pacific (COMMARFORPAC)**

Marine Medium Tiltrotor Squadron 161  
Marine Medium Tiltrotor Squadron 165  
Marine Medium Tiltrotor Squadron 262  
Marine Medium Tiltrotor Squadron 268  
Marine Medium Tiltrotor Squadron 363  
Marine Medium Tiltrotor Squadron 364  
Marine Light Attack Helicopter Squadron 367  
Marine Light Attack Helicopter Training Squadron 303  
Marine Heavy Helicopter Squadron 361  
Marine Heavy Helicopter Squadron 462  
Marine Attack Squadron 214  
Marine Fighter Attack Squadron 211

#### **Commander, Naval Air Force Forces Reserve (COMNAVAIRFORES)**

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Fleet Logistics Support Squadron 64  
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Patrol Squadron 62  
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#### **Commanding General, Fourth Marine Aircraft Wing (CG FOURTH MAW)**

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Marine Light-Attack Helicopter Squadron 775  
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Marine Aerial Refueler Transport Squadron 452  
Marine Medium Tiltrotor Squadron 774

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Training Squadron 9  
Training Squadron 21  
Training Squadron 27  
Training Squadron 35  
Training Squadron 86  
Helicopter Training Squadron 18

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Air Test and Evaluation Squadron 31 (LARGE RDT&E)  
Air Test and Evaluation Squadron 20 (SMALL RDT&E)

#### **Marine Corps Installations East**

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The Naval Aviation Readiness Through Safety Award and the corresponding Order of the Daedalians' Admiral James S. Russell Aviation Flight Safety Award are presented to the controlling custodian that contributed the most toward readiness and economy of operations through safety.

The command selected has an outstanding safety record, an aggressive safety program and an improving three-year safety trend. 4th MAW distinguished themselves by flying just under 20,000 hours with no Class A flight, flight related or aviation ground mishaps.

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Grampaw Pettibone is the famous curmudgeon of Naval Aviation News. Organizations and individual winners of this award contribute the most toward aviation safety awareness through publications and media resources. Sharing stories of misuses, mishaps, goofs, flubs, and other airborne misadventures has long been a hallmark of professional aviators. Publishing these stories and the lessons learned, keeps countless aviators from learning the hard way.

#### **Individual Award:**

LT Katherine Smission, VAW-121

Organization Award: VT-10

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#### **Organization Awards:**

USS John C. Stennis (CVN 74) and Carrier Air Wing 9

USS Boxer (LHD-4) and 11th Marine Expeditionary Unit

