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Approach

Freeze the Trainer

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

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Thanks for helping with this issue …
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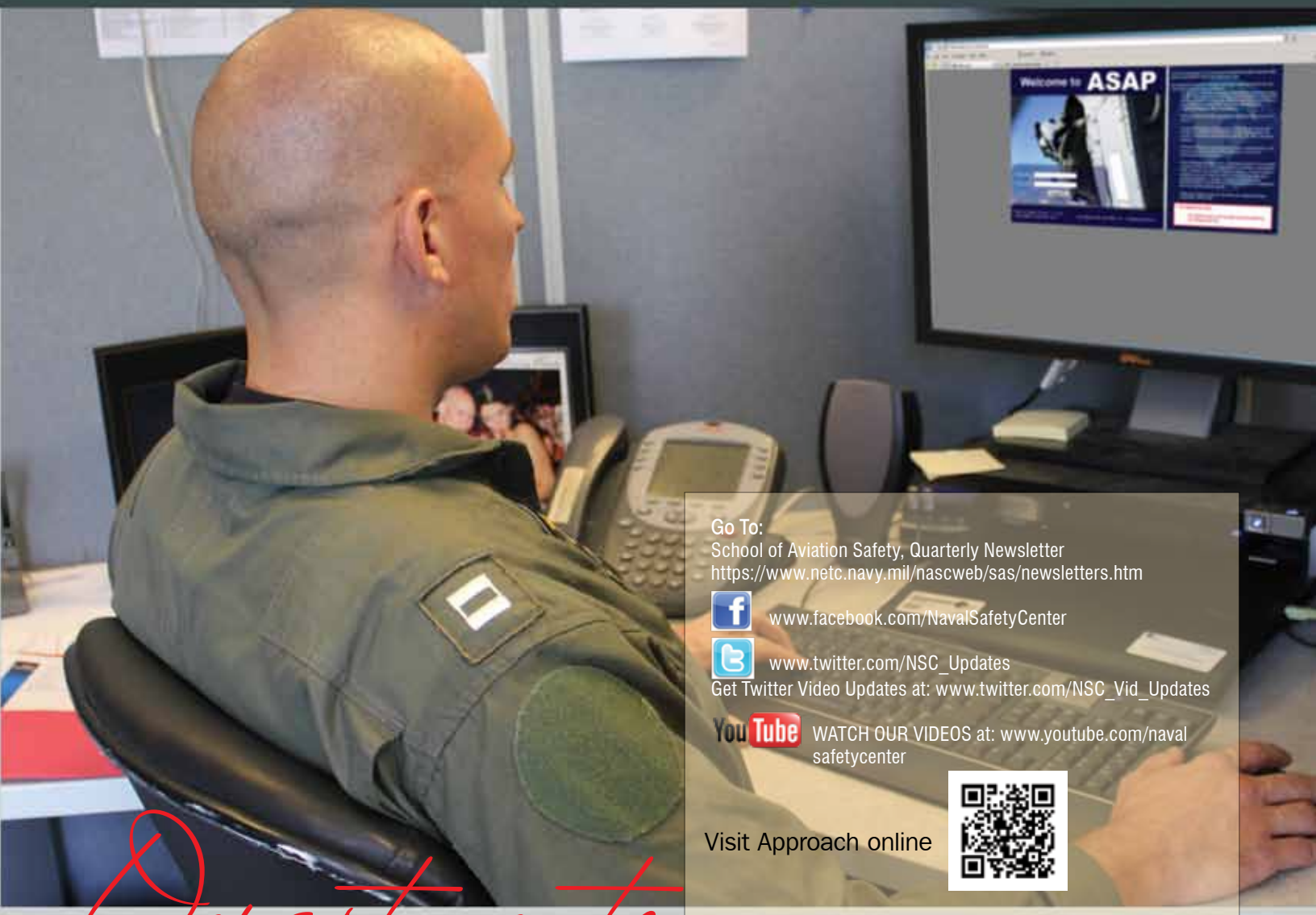

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SAFETY AWARDS

How's your end-of-calendar-year, safety-award nomination packets doing? It's time to nominate your command and be recognized for a solid year of accomplishments. Command excellence through safety is at the core of Naval Aviation, and the following awards will showcase high achievements: CNO Aviation Safety Awards, Naval Aviation Readiness Through Safety Award, Admiral James S. Russell Naval Aviation Flight Safety Award and the Admiral Flatley Memorial Award.

Don't forget the highly coveted Grampaw Pettibone Awards, with unit and individual categories that recognize promoting safety through publications (such as Approach and Mech), and the media category (unit or individual) for the use of digital and media resources (such as videos and websites) to promote aviation safety.

The reference is the CNO Aviation-Related Safety Awards, OPNAVINST 1650.28A.

Admiral's Corner

Everyone in Naval Aviation can be proud of our safety record over the last several years. What this tells me is we're improving the way we operate and the way we "view" safety. Since accomplishing our mission is directly linked to preventing mishaps, fewer mishaps means we are better optimizing our warfighting capability. Fewer errors, on the job and off duty, allow us to do what we do best: hone our warfighting edge as we ensure our readiness to respond to crisis.

To continue this positive trend we must strengthen our safety mindset. The easy part is setting up our "safety programs" which establish rules, SOPs and "by the book" requirements, which build a sound safety culture throughout Naval Aviation. Increasingly we must focus on the "human factors" that cause us to lose focus, often only for a few seconds, leading to disastrous consequences.

The "human factors enemy" is all too familiar to us: complacency, fatigue, poor procedural compliance or crew coordination, actual or perceived pressure, and transition from a positive "can do" attitude, to a resigned "will do" at any cost attitude. Fortunately we have a wide array of tools designed to address these human shortcomings by ensuring individual excellence and forceful backup of the team: ORM and TCRM, Human Factors Councils, CRM, crew rest requirements, ASAP and NATOPS training. BOTTOM LINE: Unless we have a "culture" that refuses to believe there are times when we are too busy to apply these tools, we set ourselves up for an opportunity for "gaps" in our culture that will greatly increase the risk of bad outcomes.

To ensure that the safety culture in your organization is able to withstand pressures to "cut corners" or put off the HFC until next month, ask yourself if the following "building blocks" are in firmly in place. First, is everyone fully CAPABLE to do their job, meaning they know their procedures and guidelines cold? Second, do they understand all hands are EXPECTED to be an active part of the command's safety program? Third, has leadership made it absolutely clear that everyone is EMPOWERED to stop an evolution or let someone know they are violating established procedures, even when they point this out to their seniors? The most junior person with the least experience can be in the right place to prevent a mishap. Will a clear understanding of proper procedures and a strong sense of expected empowerment cause them to speak up without delay, or will they hesitate at a crucial moment? If your command claims ownership of these traits the chances are you are on track. When commands get off-track we pay a heavy price. Recently we lost a helicopter due to poor communication, insufficient risk management and "will do" thinking when a heavy lift evolution was attempted clearly outside the safe envelope. Several people should have assessed the risks more thoroughly and made sure all were on the same page.

As you read *Approach*, the concept of risk management, stated overtly or implied, appears in most every article. Whether the story is from a student in the training command or the skipper, the authors are aware of the importance of risk assessment in making good decisions. I urge you to read each article with a critical eye and look for how these articles reflect risk management successfully embedded in our culture. Chances are that in commands with a mature safety culture, risk management transitioned from a "program" to "instinctive collaborative behavior" a long time ago, and is now deeply in their organizational DNA.

Of course Naval Aviation operates in an environment where decisions must often be made with split second timing, thus the need for Time Critical Risk Management (TCRM). We must be prepared to react to unplanned, but not "unforeseen" circumstances that greatly alter our risk. This flavor of ORM is remembered by a simple ABCD mnemonic: Assess, Balance Resources, Communicate, and Do/Debrief. The best approach to TCRM is being fully prepared to execute procedures and take prudent precautions for environments that increase the risk of "likely" risk raising their ugly heads. Every crew must strive to be completely in sync and communicating so that procedures to adapt to the "unexpected" are executed without confusion or delay. We have a couple recent Training Command examples where the instructor acted too slowly in a "known risk environment," allowing higher risk to turn into a mishap instead of a well-timed intervention by the Instructor. What tools to combat complacency should have been used to greater effect in these cases?

When it comes to combating the human factors all too prevalent in Naval Aviation mishaps, the Naval Safety Center is one part of the safety team I encourage you to tap into, in addition to the many other tools available. To continue to build upon our safety record, our task is to make the most of the resources we have, which means making sure everyone is actively on the team. This record of optimizing readiness by minimizing losses, is equally important off duty where unfortunately we lose many more Sailors and Marines than in on duty mishaps.

RADM Brian Prindle

Freeze the Trainer

BY CDR. MATTHEW ROSS

Do you want to practice your response to an aircraft engine fire a few times without actually burning anything? How about flying an instrument approach into Hong Kong International before you actually have to fly there with a VIP? Better yet, do you want to practice several bombing runs over your next target before you do it for real?

No problem. Do it in the simulator.

Navy reserve and active-duty aviators operate some of the most technically advanced equipment in the military arsenal. It takes hundreds of hours of training to master the needed skills. Some training is best done in a simulator, but how much is enough, or too much? That's a question that Commander Naval Air Force Reserve (CNAFR) staffers tried to answer.

CNAFR recently reviewed all flight events logged (actual and simulated) during FY11, to make sure the flight-to-simulator balance was maintained. Each aircraft has a syllabus (combining simulated and actual flight events) to make sure that aviators maintain proper levels of readiness. CNAFR action officers began with these syllabi and matched the best training device — aircraft or simulator — to each training event. Events such as emergency-procedures training and basic-proficiency hops were designed for simulators not as a cost-savings effort, but because the simulator provides an optimal way to introduce stressful scenarios under the watchful eye of a qualified instructor.

Photo by MCS2 Charles E. White.

We need to not only train effectively to meet readiness requirements, we also need to balance constrained resources.

Increasingly, simulators are an attractive way to do just that.

Technological improvements in simulator capabilities offer expanded opportunities to match or surpass the training that can be done in an aircraft, within certain mission sets. For example, with the recently upgraded C-9 Skytrain simulator in Denver, Colo., 230 flight hours can be transferred from the aircraft to the simulator without any degradation in training. Similar transfers of hours have been identified in other platforms. This transfer will save the Navy Reserve flight-hour program more than $1.5 million annually.

The CNAFR staff included analysis of simulators as part of the on-going C-40A Clipper procurement

Photo by MCS2 Alan Gragg.

process. By taking advantage of commercial simulator capacity, program managers leased time in civilian, state-of-the-art Boeing 737 training devices for new and recurrent C-40 training. This arrangement eliminated costly flight hours without compromising qualification standards.

"Forever more we will be looking for ways to effectively reduce the cost of flight proficiency," said CAPT Eric Petersen, CNAFR Deputy Commander. "We have learned that money does indeed buy realism, but only up to a point." As effective as simulator training is, the benefit of fighting the aircraft against a breathing and thinking adversary is essential to produce combat-ready aviators.

"You make your money at 6.5 G's with sweat running into your eyes, when your cursor isn't working quite right, and you have lost your wingman behind a cloud," says CAPT James Kuhn, CNAFR Chief of Staff, former Tactical Support Wing Commander and a naval aviator with 16 years of adversary experience. "It's difficult to replicate the physical stressors of dynamic flight while sufficiently substituting a thinking and reacting adversary."

Commercial aviation decided long ago to invest in simulator-based training to the fullest extent possible. Every major airline conducts all line qualification in advanced simulators. "In a world where computing speed can double every two to three years, simulators bring increased fidelity and capability. The key is to match new simulator capabilities with the phase of flight that can be properly replicated in a simulator," said RADM Sadler.

Today's simulators offer training that is increasingly realistic. In many cases this training meets or exceeds proficiency requirements that in the past could only be met by actually flying. The Naval Aviation Enterprise is heavily engaged in leveraging simulators to maintain readiness while downloading flight hours from the airplane.

For example, the P-8 Poseidon multi-mission maritime aircraft (MMA) is estimated to use simulation to allow aviators to complete 70 percent of their training and readiness requirements.

"With the right balance of simulator training and flight-hour apportionment, simulators provide naval aviators and flight officers an extremely effective and cost-efficient means of maintaining their training and readiness standards," said RADM Chris Sadler, Commander, Naval Air Force Reserve.

CDR. ROSS IS THE VAW/VAQ PROGRAM MANAGER WITH NAVY AIR FORCES RESERVE.

It's Brand New!
What Could Go Wrong?

BY LT. JOHN BASHER

Emergencies always seem to strike at the least expected time — no matter how tedious the situation seems.

After flying the most hours of any instructor pilot in the previous month, I was selected to accompany the XO to the Hawker Beechcraft factory in Wichita, Kan., to pick up a new aircraft. I had been flying the T-6B Texan II for four months as an instructor and had logged about 150 instructional hours. I had seen many crazy student scenarios while operating in congested airspace but had yet to be confronted with an actual emergency.

After delaying our departure from Wichita for a day because of icing, we made our final preparations to head home. Our flight profile took us from Wichita to Alexandria, La., for fuel, followed by a final leg into Pensacola, Fla.

After a thorough acceptance walk-around, we signed the paperwork and the aircraft was released to the U.S. Navy. Once all documentation and gear was loaded, the factory's hangar doors were opened, and the aircraft was towed to the ramp for engine start. After a comprehensive final preflight by both of us, we strapped-in with the XO in the front seat.

We taxied to the runway and received our takeoff clearance. We had no issues on takeoff, and the landing gear came into the well normally. We climbed to cruise altitude and headed toward Alexandria.

Our route had us transiting in the vicinity of Barksdale AFB's many military operating areas (MOAs). Based on the forecast weather conditions, we planned to land in Alexandria with about 400 pounds of fuel.

Our actual transit closely matched our preflight plan. However, as we approached the Alexandria area, we got vectored off our flight route by ATC because of unusually heavy military operations. This added about 30 minutes to our flight time, which in turn caused us to hit the IAF with about 75 pounds less then we had planned. This issue was not a concern because we expected to be on deck shortly. The XO decided to make the first landing.

After being diverted westerly for about 30 miles, we were given vectors to the final approach course (FAC) for the RNAV 32. As we approached the FAC, we noted our fuel was just over 300 pounds. The weather was

We knew something was not right, but we were probably in denial as to how a brand new aircraft could have a gear malfunction.

VMC so there was little concern we'd approach the NATOPS minimum fuel of 200 pounds.

Once on FAC and within five DME of the FAF, we noted that our airspeed was below the gear-extension NATOPS limit of 150 knots. The front-seat gear handle was placed in the down position. We received the call to switch to tower. While I switched frequencies, I heard the XO start his Before Landing checklist. He made an unusual pause when he got to Landing Gear, which is where both pilots confirm three green lights in the landing indicators. I looked down to give out my call of three down and locked, thinking he was distracted by traffic and forgot to make the call. I soon realized why he was silent. There were no lights whatsoever in the indicators or gear handle. I'm sure his disbelief matched mine.

The XO then asked me if I had any gear lights on my indicator; I looked again to confirm there were none. I instinctively went to the interior light adjustments to brighten the dials — still, nothing. We knew something was not right, but we were probably in denial as to how a brand new aircraft could have a gear malfunction.

Tower called and cleared us to land; we were now just past the FAF. We continued to troubleshoot, trying all light switches, but nothing gave us positive signals. I then requested tower to visually check if our gear was down, or if they saw any of our landing and taxi lights. Tower replied negative.

The XO then declared a missed approach and requested to hold over the field for troubleshooting. Tower denied the request and told us to hold west of the field in VFR. We climbed to a 2,000-foot VFR holding pattern and began the Landing Gear Malfunction Procedures in the pocket checklist (PCL).

A new aircraft with a gear malfunction — was it possible? I quickly looked at our fuel, which indicated under 300 pounds. Things just went from uneventful to urgent in a matter of seconds.

We worked our way through the checklist procedures, but the landing gear remained in the up position with the gear handles in both cockpits stuck in the down position. No matter how much force was applied, we could not move either gear handle.

After following the checklist and having the exact indications listed in the malfunction, we were directed

to continue to the Landing Gear Emergency Extension checklist. I looked down at our fuel and noticed we were just above 250 pounds. If the Emergency Extension Checklist was unsuccessful, we would have some tough decisions to make as we approached minimum fuel. Should we try to land with unsafe-gear indications or eject? If we had to go down that route, we could be looking at severe to total damage of an aircraft with essentially no flight time on it.

The landing-gear Emergency Extension Checklist has only a few steps, so we expected a quick result. When we got to the step to pull the emergency landing-gear handle, we paused, and then the XO pulled the handle. Immediately, we heard the sound of the gear doors opening and the landing gear dropping. We then received the expected result of three green lights, indicating gear down and locked. We also got two red lights for the main gear doors, which will not retract when using the emergency gear-extension system.

Things just went from uneventful to urgent in a matter of seconds.

We quickly turned back toward the airfield and got landing clearance from tower. While on short final, we requested tower to visually verify our gear was down, which they confirmed. We continued and landed.

THE CORRECTIVE ACTION that maintenance took was to replace the forward-panel, landing-control assembly in the front seat. If this part fails, the gear handle will come down. However, all other functions of the gear handle will not operate because the assembly is unable to route any inputs to the gear components in the aircraft. When the XO placed the gear handle in the down position, the handle remained locked in the down position, but the gear remained up.

Our squadron had recently issued a hazrep detailing seven different landing-gear malfunctions in 10 weeks. This hazrep was briefed to all instructor pilots at a training meeting, so we were familiar with the various malfunctions that may be seen. A few months earlier, another instructor in the squadron was faced with the same indications. Therefore, we would still follow the checklist, but in the back of our minds we knew we'd have to rely on the emergency-gear system to do its job.

It's important to never take things for granted when flying. Who would have thought a new airplane would have a gear malfunction? We sometimes assume the things we do routinely will always work or happen. The importance of doing all items on a checklist and visually confirming them may seem mundane at times. What if we had lowered the gear handle and hadn't visually checked for down-and-locked indications? Even in the most challenging and task-saturated times, we must never forget to complete even the simplest procedures, including the landing checklist, and not be lulled into a false sense of security with a "brand new aircraft."

LT. BASHER FLIES WITH VT-6.

Mishap-Free Milestones

VP-26	338,081 Hours	50 Years
HSL-49	25,000 Hours	5 Years

BRAVO Zulu

HT-8

Lieutenant Commander Gabe Somma, USCG, and Ens. Josh Nunn, USN, flew an autorotation to a remote cotton field near NAS Whiting Field when their engine malfunctioned during a simulated emergency.

The HT-8 instructor and student were flying a single-engine TH-57B on an early stage familiarization flight. Lieutenant Commander Somma rolled the engine to idle to simulate an engine failure at 1,000-feet AGL.

During the recovery, the engine remained unresponsive despite rolling the twist grip to full open. The aircrew entered an auto-rotation profile, confirmed the twist grip position and crosschecked engine instruments. Without any indications, LCdr. Somma rolled the engine back to idle and then to full power — no response. Passing through 400-feet AGL, LCdr. Somma transmitted a Mayday, and Ens. Nunn depressed "emergency" on the transponder. At the bottom of the autorotation, the engine began to spool-up at 30-feet AGL as LCdr. Somma completed a partial-power autorotation landing.

They estimated the engine was unresponsive for eight to nine seconds.

Left to right: ENS Josh Nunn, and USN LCDR Gabe Somma, USCG.

HS-5

After transferring passengers to and from USS *Dwight D. Eisenhower* (CVN-69) and French carrier Charles De Gaulle, the HS-5 crew received a call: "This is an actual SAR." They were relaunched toward the SAR datum. A French pilot had ejected during a day, basic fighter-maneuvering flight.

The HAC, Lt. Adam Sheppard, had the navigation needle pointing directly to the survivor's location. AWRC Jonathan Showerman, AWR2 Brad McCutcheon and AWR3 Justin Tolberty prepped the cabin for the rescue.

The SAR crew coordinated with an FA-18 already on-scene and exchanged details of the situation. The Hornet took position overhead the scene.

The HAC was on the controls for a 10-foot, 10-knot creep as AWR3 Tolbert jumped out of the aircraft to join the French pilot. Ltjg. Lynda Pearl then took control in the right seat and stabilized in a hover for the rescue. AWR2 McCutcheon operated the rescue hoist and gave verbal directions to the pilot to position the aircraft over the swimmer and survivor. AWRC Showerman gave rescue updates and provided a medical evaluation of the French pilot once he was on board.

The French pilot was flown back to the Charles De Gaulle. This Nightdipper crew lived up to their motto, "We rescue, we protect, we deliver."

From left to right: AWR3 Justin Tolbert, AWR2 Brad McCutcheon, AWRC Jonathan Showerman, Ltjg. Lynda Pearl, Lt. Adam Sheppard.

Racing the Sun

BY MAJ. BRYAN L. KILL, USMC

It was two months since we'd left San Diego aboard USS *Makin Island* (LHD 8), the Navy's newest LHD. We were well into our deployment with the 11th Marine Expeditionary Unit (MEU) and anxious to get off the boat.

Life on the boat isn't all that bad, in fact, we'd enjoyed nearly a full week of liberty in Singapore just two weeks earlier. The food is good, and we have ready access to fitness facilities. However, you can only float for so long before craving a change of scenery. However, as anyone who has deployed as part of a MEU can attest, a change of scenery sometimes comes unexpectedly and can bring a marked decrease in your quality of life.

Two months out from the surf, sand and all things San Diego, we found ourselves floating off the coast of Djibouti in the Horn of Africa (HOA). With fish tacos clearly worlds away, what we found instead were "fish boxes": invisible boxes found only on oceanographic charts. Within these fish boxes, we would turn untold numbers of "gator squares," all the while endeavoring to maintain flight currency and support training ashore. We eagerly anticipated real-world tasking.

With flight currency and proficiency as our mandate, we launched as Dash 2 in a division of four CH-46Es. We were heading feet dry to conduct section terrain flight (TERF) and division confined-area landings (CALS) in Djibouti. After that, we were to shut down and assume the role of casualty-evacuation (CasEvac) standby in support of battalion landing-team (BLT) training at resupply point-1 (RSP-1). Our basic maneuver had us make a single hit at RSP-1 to resupply and fulfill the Marine logistics (MarLog) portion of our tasking before commencing training.

With the MarLog complete, we stopped at Djibouti International airport to take on fuel. With tanks full, we set off to the TERF route as a section. Two hours later, we pushed out to the CAL site, where the other section joined us on deck. We conducted division CALS in each position before dissolving the flight and pushing back to Djibouti International to refuel.

With sunset rapidly approaching, we departed for the short return flight to RSP-1. We would shut down there and spend our first night away from the boat — a perfect end to a full and successful day of training.

RSP-1 sits at a intersection in a small valley, where the BLT could easily stage and transit to their range complexes and back. Our aircraft would be established as the on-call CasEvac section during all live-fire events. The approach to landing is made on

Photo composite.

As I was about to call out 50 feet, the aircraft unexpectedly made a rapid rate of descent, and the pilot responded with all the collective he could pull.

an east-west or west-east heading, because of high ground on both the north and south sides of the zone. The zone is large, flat and full of 12-to-18-inch volcanic-type rocks. We were not the first MEU to use this zone, so we knew there was adequate space for multiple aircraft. Several large areas inside the LZ had been cleared of rocks for aircraft and marked as landing points.

What happened on our final approach to freedom? We were in the Dash 2 position on final approach to RSP-1 with decreasing airspeed and altitude. I already had conducted landing checks — from memory, not the checklist — and we were approaching short final with our landing profile established. At 200 feet, I began to call airspeed and altitude at regular intervals. The pilot initiated control inputs and said we were taking separation from lead to avoid rotor turbulence.

Recognizing the intended point of landing, I called out 100 feet and shifted my weight in preparation to assume the controls if I needed to. As I was about to call out 50 feet, the aircraft unexpectedly made a rapid rate of descent, and the pilot responded

with all the collective he could pull. With torque horns blaring, he squeaked out just enough collective to silence the horns.

The aircraft didn't have the juice to maintain our profile, and we touched down well short of the intended point of landing. Our ramp struck a small boulder, which drove the ramp actuators upward, breaking them off the airframe. The impact also damaged the utility hydraulic and electrical systems, as well as the airframe.

How is it that we could fly all day, only to fall prey to blow it in the final few seconds of the flight? We had conducted thorough flight and cockpit briefs. We delineated responsibilities and religiously executed them. We flew all day according to the parameters briefed. I knew exactly what to expect from the crew and they from me. This was supposed to be just another landing, no different than the others. What had gone wrong?

THE PRECAUTIONS for such events have been with me since the summer following my sophomore year, when I flew a small Piper airplane virtually everywhere I went. I remember my flight instructor telling me, "Manage the variables and always put controls in place." He added, "Those things you can't control will eventually manifest themselves and it'll usually happen at the worst possible moment."

"A pilot," he would say, "can always handle one unforeseen variable, and usually two, but a third unchecked variable will almost certainly take you down."

What variables collectively led to our hard landing that fateful day in Djibouti? As much as I'd like to blame Friday the 13th and the boat's brilliant airplan cartoon, the reality is that we had allowed a time crunch to dictate the conduct of our final 10 minutes of flight. With the sun rapidly descending, and as our crew day began to run short, we departed in earnest to reach our final destination. Flight-planning considerations, the basis for such success throughout the day, were no match for our race with the sun.

In our haste, we allowed ourselves to deviate from the plan and break from the brief. The landing checklist I had completed from memory did not include the variables that any pilot (and certainly a pilot of a 46-year-old helicopter) should always pay particular attention to: wind direction and velocity. We accepted a landing with a tailwind. The tailwind had not affected our lead aircraft as far as we could tell, but not all aircraft perform exactly the same, and in our case, aircraft 04 is one of our less powerful players. What may have been a minor detail to our lead aircraft was for us the straw (tailwind variable) that broke the camel's back (in this case, the Phrog's ramp).

In our rush to arrive at the LZ and begin our overnight camping experience ashore, we ignored the weight of the aircraft (recently refueled and with passengers aboard) and the direction of the wind. We had decided the threat was such that the ramp would be left in the horizontal position to support the tail gun.

We also had not briefed the physics of flying aircraft that are routinely on the edge of their operating envelopes. By setting up our landing profile with a tailwind, we had positioned the aircraft such that power required was nearly equal to power available. Given this, the reaction to the torque horns induced a rate of descent from which the power required had exceeded the power available. In the interest of preventing an overtorque, we had created a situation where we guaranteed an overtorque to arrest the rate of descent. So, we landed short of our intended point of landing and damaged the aircraft.

What should have changed? We had just left Djibouti International and had been given the wind direction and velocity to us over the radio. It is a safe assumption that the reported winds would be the same 25 miles away inside channelizing terrain. Once identified, a reminder to the lead aircraft would have been appropriate, and he would have changed his landing direction. Also, we overestimated the enemy threat and should have raised the ramp, acknowledging that we wouldn't need the tail gun on final approach to landing. We should have conducted our landing checks using the checklist.

We should have spent some time briefing our power margins. This would have increased our awareness of the different phases of flight, where we would be power limited and where we would have excess power.

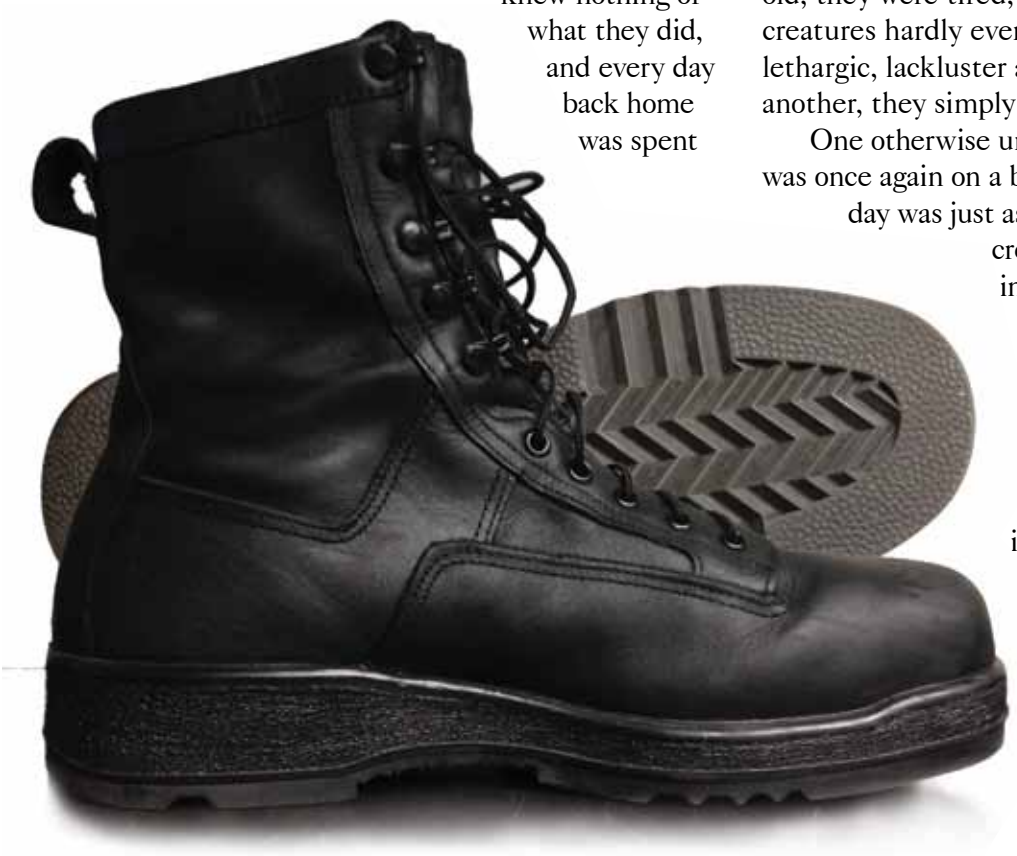
Maj. Kill flies with HMM-268 (REIN).

The Slippery Slope

BY LT. PATRICK BELL

This is a story of intrigue, desperation and despair. It has deep meaning, but offers promise for future exploration by scholars years from now. Sit back and enjoy as I take you to a place your mind can only now imagine. Welcome to the slippery slope.

Many moons ago, in a watery land far away, a giant steel beast rolled along, hour after hour, day after day. No living creature aboard spoke a happy word, as the work was menial, the accommodations marginal, and the company, despicable. Worked to the bones, in conditions only seen by the drudges of the earth, they lost all of their drive and motivation because of the overarching desires of the few. Fortnights felt like centuries, yet they continued to trudge along into oblivion, away from their loved ones and growing older every day. The rest of the world knew nothing of what they did, and every day back home was spent without knowledge about how much blood, sweat and tears these warriors sacrificed.



Incredible humidity, mixed with the blazing inferno of the giant ball of flame in the sky, made the steel giant sweat. Everything was salty, wet and slippery. Neither bird nor a creature could navigate the slippery top without extreme caution. The creatures feared falling over the side, into the gigantic blue pool of treacherous liquid. They looked like figure skaters on top of the giant contraption of despair.

Daily, almost driven by the clock, many creatures were forced to climb on top of the steel birds and inspect them, not unlike one who wears a white coat as a trade.

Their shoes, if they could talk, would describe the deplorable conditions in which they had traversed hundreds of miles of unforgiving steel. The shoes were old, they were tired, and they were worn down. Yet, the creatures hardly ever replaced their shoes. They were lethargic, lackluster and uncaring; for one reason or another, they simply did not receive new boots.

One otherwise unmentionable day, a certain creature was once again on a bird, doing a daily inspection. This day was just as wet as all the other days. The creature, suddenly and without warning, lost his way. He tumbled off the giant steel bird, and careened down to the steel surface below. Fortunately, the fall was not far, and the hurt was not much.

The elder council demanded a change; floggings commenced immediately. All junior creatures were offered replacement shoes. That my friends, is why you should procure and wear proper boots for the flight deck of a nuclear-powered aircraft carrier.

LT. BELL FLIES WITH VAQ- 131.

THE GREEN FLASH

BY LTJG. DAN ARSENAULT

After a training mission in the warning areas off the coast of Jacksonville, Fla., our P-3C entered the GCA pattern at NAS Jax for night field work and pilot-proficiency training. We flew three precision approaches to runway 28 and requested the next one be a full-stop to conclude our evening of training. With the pilot at the controls in the right seat, and while beginning our turn upwind in the GCA pattern, a steady green light crawled up the nose radome. Green rays momentarily illuminated the flight station.

The pilots, flight engineer, and other crewmembers in the flight station realized that the green light was a laser. Before our return home from a recent deployment, we had read about several such incidents in the Jacksonville area, but none of us had ever experienced one. We reported the incident to radar control and tower and landed. After shutting down, we began the process of reporting the incident and letting others know what had happened.

Almost 20 lasing incidents were reported Navy-wide via hazreps in the last year (eight instances were in the NAS Jax GCA box) In the P-3 community, hazreps have been generated in all areas of operation, including recent lasings in Kuwait and Kadena.

Will lasers damage your eyes? Absolutely. The initial effects can be glare, after-images, pain or discomfort, and temporary blindness. Long-term damage can range from mild and reversible to permanent. Injuries include burns on the cornea or retina, holes, hemorrhages, retinal scarring, macular holes and macular cysts.

If you find yourself in a situation like ours, look away. Do not stare at the laser. Avoid rubbing your eyes as this may irritate any damage caused by the initial contact. Immediately mark your position and report the incident to ATC, making note of the lat-long for further reporting after you land.

As soon as possible after landing, per OpNavInst 5100.27B, consult an ophthalmologist or optometrist, even if you just suspect laser exposure. Early medical intervention may lessen the severity of the damage or subsequent retinal scarring. Get in touch with your aviation safety officer, fill out an ASAP report to the Federal Aviation Administration, and complete a hazrep. Expeditious reporting can assist local law enforcement in determining the location of the lasing source.

Laser is an acronym for light amplification by stimulated emission of radiation. Lasers convert electromagnetic radiation of mixed frequencies to discrete frequencies of highly amplified and coherent ultraviolet, visible, or infrared radiation. Lasers range in size from semiconductor devices no bigger than a grain of salt to high-powered instruments as large as an average living room. Lasers can be so powerful that their power, concentrated at a single point, can be a billion times the intensity at the surface of the sun. Commercial lasers are applied in such areas as welding, machining, measuring, tracking and surgery. Military lasers are applied in range finding, target designation, illumination, detection and weapons aiming.

Lasing activity can be considered "interfering with flight crew" and is punishable under the Patriot Act, carrying fines in excess of $500,000 and 20 years in jail. FAA laser reporting procedures can be found at http://www.faa.gov/aircraft/safety/report/laserinfo/.

LTJG. ARSENAULT FLIES WITH VP-45.

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The Evolution Got Interesting

BY LCDR. STEVE YARGOSZ AND CDR. BILL FREDERICK

You've just landed in a helicopter landing zone (HLZ) to pick up troops when you encounter an emergency procedure (EP) that is not covered in NATOPS. What do you do?

That's easy — stop what you are doing and assess the situation. Well, what if that HLZ is in hostile territory and you are picking up a team that had just captured some "bad guys?" Does that change anything? We faced this situation last summer.

The mission planning was typical: it took about 2.5 hours to get a plan together and brief everyone. The infil and exfil HLZs would be separated by almost two miles. It was a hot night at 35 degrees Celsius, and it was also a high-light night. The high temperatures led to high-density altitudes (more than 3,000 feet) and reduced power available. This situation gave little room for error while carrying at least 12 combat-loaded troops. We briefed the mission and all known hazards (wires, towers, fences and stakes), and the crews prepared to launch.

The flight launched with four aircraft for a quick flight to the forward operating base (FOB). Once there, we shut down the aircraft and briefed the mission and contingencies with the team we were supporting. We paid close attention to the landing plans for the four-ship infil, their assault tactics and the objective buildings. We were also updated on other airborne assets that would be involved with the mission.

The infil portion went as planned, despite an extremely dusty landing zone. The post-infil flight returned to the forward arming and refueling point (FARP) to refuel and then returned to the FOB to await the exfil call.

When the call came, we learned that the planned exfil HLZ was fouled and that the team had shifted about 200 yards to another HLZ (which would fit the four aircraft). Although we had no real-time imagery of the area, overhead sensors indicated the HLZ was clear of obstacles, with nobody in the vicinity. We launched and proceeded to the release point prior to the exfil HLZ. We again checked if the HLZ was clear of obstacles, and we got an all-clear.

Once the team gave the exfil call, the flight of four helos headed inbound to land. The team lined up as we had requested in the brief and gave excellent visual cues to the intended HLZ. The HLZ appeared to be a farmer's field where there they had hastily erected greenhouses in the spring.

Dash 1 landed on the forward right part of the landing zone with Dash 2 just aft and left. Dash 3 had to land farther back because of uneven terrain and all of the dust blown up from Dash 1 and Dash 2. Dash 4, on the far left, had to move forward because of uneven terrain and what looked like vegetation with guide-stakes.

Within seconds of Dash 3 landing, the aircrew heard a loud noise. The aircraft had developed a large lateral shuffle and a "whopping noise." The pilots observed a momentary decay of NR that quickly returned to normal. The right door gunner saw a large plastic tarp enter their rotor system — it might have wrapped itself around the main mast and control rods, or it might have stuck on the leading edges of some of the rotor blades. The right door gunner had to forcefully stop the troops from entering the rotor arc and directed them to set up a defensive perimeter.

Rewind two years to the summer of 2009. HSC-84

had a Class A mishap at Fort Picket in which a tarp (designed for landing small UAVs) flew up and into the rotor system, with instantly catastrophic results to the airframe. There were only minor injuries. In our case, the Kevlar-reinforced tarp (intended as a UAV landing strip) entered the rotor arc with the aircraft about two feet off the deck. One second later, the aircraft was on its side, with a debris field of 300 yards in every direction.

What would you have done? There wasn't a sudden stoppage of the main rotor system. You weren't in friendly territory. The aircraft felt fine. Your troops were accommodated by the remaining aircraft in the flight, and Dash 1 was about to take off.

The HAC for Dash 3 called Dash 1 to let him know what had happened. He also talked to his crew, having onboard a crew chief who had experience with several aircraft mishaps.

Dash 1 immediately directed the flight to remain on deck. He then contacted the airborne assets to tell them of the situation and to determine their on-station time. All the assets had enough gas to stay as long as it took for Dash 3 to shut down and take a look at the the entire aircraft, particularly the main-rotor and tail-rotor systems.

Dash 1 decided to keep the integrity of the flight and stay on deck. He made sure the package had adequate coverage from the airborne assets. He also tasked the airborne assets with contacting their bosses to prepare for other contingences.

Dash 3 decided to shut down the aircraft to the auxiliary power unit (APU), check the aircraft for damage, and survey the HLZ for other possible missile hazards.

After inspecting the aircraft and immediate area, Dash 3 restarted. The formation was airborne in 15 minutes, heading back to the FOB and home base. An uneventful ending to what had been a very eventful night. Fifteen minutes can seem like an eternity.

While NATOPS covers a lot of information, it does not cover everything. Your toolbox needs to include an understanding of the aircraft and systems, the tactical environment and immediate threats, experience and thinking outside of the box. Also, take things slowly. There were no enemy combatants in the immediate vicinity, and we were not taking any fire. Decisions could have been far different under those circumstances.

As a mission lead, you have to take into account many variables. Not only your experience and comfort level, but also the capabilities and limitations of your crews and aircraft. You may also be required to take charge of external assets and use them to your benefit.

There is a tendency to jump into someone else's cockpit during an emergency. Something may not be done in the preferred method, or members of the flight are eager to prove themselves. Actions may be ego-driven or with the intent to be "helpful." Either one could be detrimental to the flight, closing down the most vital component of CRM, which is communication.

In this case, silence from other aircrew probably allowed rapid assessment of the situation for the flight lead. Know your responsibilities within the flight, and be comfortable with CRM so you can react to any situation

Our mission lead and Dash 3, who was also designated as a mission lead, worked together to sort out what needed to get done. They didn't get into each other's cockpits. Dash 2 and Dash 4 wisely kept quiet and supported the other aircraft when asked.

LCDR. YARGOSZ AND CDR. FREDERICK FLY WITH HSC-84.

I Really Don't Want to Shut Down This Engine

BY LT. KARL POPEJOY

Our detachment discussed the ORM of single-engine emergencies and acceptable widths of runways that lack arresting gear. We jokingly responded with "50 feet wide" or "60 feet narrow." Acceptable runways would be important because we were considering a detachment site out of NAS Sigonella to provide COD (carrier onboard delivery) support to USS Abraham Lincoln (CVN 72) during its transit through the Mediterranean.

This would be our last detachment site on an eight-month deployment. We wanted to do it right and make the boss proud. While the jet jockeys on the ship had ended their combat missions supporting troops on the ground, our battle was just starting. Distinguished-visitor (DV) warfare was the name of the game. Fly them on, fly them off while showcasing the power, pride and professionalism of the U.S. Navy to foreign dignitaries. Each carrier wing only has two CODs, so no broken planes during DV warfare.

Back to our ORM discussion about our skinny runway. NAS Sigonella has a nice, wide runway with arresting gear, a big plus for tailhook aircraft. Fortunately, Sigonella has a secondary runway, but with no arresting gear. We agreed that we'd feel comfortable landing a hypothetical single-engine emergency on this runway, a chance to show off our pilot skills and earn our pay.

On our second day of a detachment transit to NAS Sigonella from Bahrain, we had seen it all. We had trouble with country clearances, loss of air conditioning and pressurization (a big deal over the Middle East

While the jet jockeys on the ship had ended their combat missions supporting troops on the ground, our battle was just starting.

in the summer). Of greater importance, we noted an increased fuel burn at lower altitudes from our T-56A-425 Allison engines. But hey, we were fortunate to have the pleasure of one night in NAS Souda Bay to get our fill of gyros and baklava.

The next day, we had a two-hour flight from Souda to Sigonella – all that was between us and three days of liberty. As we started our descent and completed the approach checklist, we saw a propeller-pump light flicker.

I trust the jet jocks reading this remember how they had to feed in right rudder when adding power in your trusty T-34/T-6. It's a similar issue in the COD, but worse when you have 4,600-SHP engines on your wings. Our plane has to fit on the flight deck, so the engineers made it short and gave us three big rudders, instead of a nice long tail with only one. Those three rudders produce large forces, so we have a rudder-limiting system which keeps us from ripping them off when we come into the break at a scorching 300 knots. These speeds allow for a face-sagging, awe-inspiring display for all of our admirers in the tower and flight deck. The rudder-limiting system, like all systems, is designed with the best of intentions. However, when it fails, it can hinder your best efforts to keep the houses small and the sky up.

So, there I was (I had to say that, don't judge me), as we received indications of a loss of pressure from our main propeller pump on our port side. NATOPS directs an engine shutdown while the secondary pump is still producing pressure to control the blade angles on the prop. You go to max power to drive the blades closest to the feather position before pulling the T-handle. This step is vital, in case the aircrew can't execute the shutdown before the secondary pump loses pressure, or the prop loses all fluid. If that happens, you risk losing control of blade angles. What's the big deal you ask? If you can't feather the prop, you are stuck with the equivalent of a 14-foot-wide, trash-can-lid-worth of drag hanging on your wing.

Enough with the technical garbage; we had a successful shutdown and feathering sequence. We were winning. Then we had a Dudastrophe, named for Capt. Terry Dudash, USN, (Ret.), a C-2/E-2 simulator master. Our rudder-limiting system was stuck in a high-speed limiting mode, giving us only two degrees of rudder authority versus the 20-degree rudder we needed. However, we had the altitude to reduce power on our operating engine, thereby reducing the asymmetric thrust and descend. We identified the issue as a faulty artificial-feel system, which limits our rudder authority. After a few tense moments, we diagnosed the problem and regained control of our aircraft.

Tragically, that pesky single-engine, asymmetric-thrust problem reared its ugly head again.

WITH 40 MILES LEFT to our destination and closest airfield, we set up for a single-engine approach to a 98-foot wide, 8,000-foot-long runway with no arresting gear in Sigonella.

The C-2A(R) is not equipped with anti-skid brakes. Sound judgment and trusty FRS instructors vehemently teach no brakes during normal landings (until well below 50 knots), unless you want to blow a tire and gain membership to the fraternity of the golden boot. So, we normally use our props to slow down.

Tragically, that pesky single-engine, asymmetric-thrust problem reared its ugly head again. High drag from our functioning starboard engine was pulling us to the right side of the runway at the same time. You have to use reverse thrust to try and slow down. Single-engine full stops are sporty enough on wide runways.

After eight months of deployment, this seasoned crew pulled all of their training together to land a plane full of 16 hardworking VRC-30 Det. 2 maintainers in Sigonella.

To all the jet jockeys and rotorheads, thanks for playing along, I can't wait for all the jabs back. This tale is not written in blood, and tragedy has been averted yet again. Trust your gut, use your training, and never take extra gas to a possible crash site.

LT. POPEJOY FLIES WITH VRC-30.

Photo composite.

On the Bare Edge

BY LCDR. JAY HIGGINS

It was a warm, hazy morning in the Gulf of Oman. I launched from the deck of USS *Abraham Lincoln* (CVN 72) on a functional check flight (FCF). The Pro C for the Hornet is an uncomplicated check required after certain kinds of flight-control maintenance. Airborne requirements include flight-control rig checks, a G-warm maneuver, and a loop to verify flap scheduling. The flight is normally expedient and methodical. This particular FCF was scheduled following maintenance on the port leading-edge-flap universal, the starboard rudder servo and port aileron servo.

I completed the on-deck portion of the FCF checklist and the airborne rig checks, then began the G-warm maneuver. The initial 4 G pull to the left was uneventful. As I reversed for the 6 G right hand pull, the aircraft began what I can best describe as a loose-tailed, uncoordinated roll at a high rate.

I couldn't stop the jet at the desired roll angle, overbanking to about 115 degrees. After two or three oscillations, I recovered a wings-level attitude. I had to maintain half left-stick deflection to counteract the aircraft's tendency to roll right. The standby attitude-balance ball was pegged full right. Rudder trim only brought the ball halfway back to center. When I relaxed on the stick, the Hornet immediately and rapidly rolled right. The odd handling characteristics were not accompanied by any indication of a flight-control malfunction from the aircraft warning system. I began climbing and decelerating to reach a safer altitude and more normal airspeed.

As the aircraft slowed, the tendency to roll right decreased until, as I passed through 13,000 feet at 250 knots, control inputs were no longer required to maintain wings-level flight.

On the bare edge of controlled flight, I knew I wouldn't be able to complete the immediate-action step of releasing the controls should the jet depart.

With what now appeared to be a properly functioning flight-control system, I decided to further investigate the strange handling. Accelerating to 300 knots, I began a 3 G left hand pull. The flight controls felt solid. I increased speed to 350 knots and pulled to 4 Gs. The heavy, uncoordinated roll returned with violent pitch, roll and yaw oscillations. This time the aircraft was more difficult to upright. Each control input produced an adverse reaction in a separate axis, as the aircraft oscillated from 60-degrees left bank to 10-degrees right every two seconds.

On the bare edge of controlled flight, I knew I wouldn't be able to complete the immediate-action step of releasing the controls should the jet depart. Therefore, for the first time in more than 2,000 Hornet hours, I realized that any indication of departure would signify my entry into an unrecoverable condition and cue my immediate ejection.

Fortunately, with the onset of the heavy roll, I had pulled my throttles to idle. As my airspeed decayed, the oscillations abated. After 20 to 25 seconds, I was able to maintain wings-level flight with left stick input. I continued to slow and did a controllability check. With the flaps extended, the aircraft was controllable and did not require left stick input to maintain wings level. However, the lateral stability was less crisp and the roll rate was slower than normal. I flew a straight-in approach and recovered aboard the carrier.

Postflight analysis of the flight-control failure indicated my left aileron position sensor, a component of the recently replaced aileron servo, had malfunctioned twice in flight. In both instances, the flight-control computer, believing it to be in the full-up position, had continued to drive the port aileron down. After the first occurrence, the sensor began working again, but then failed a second time. It remained inaccurate throughout landing. Decelerating and lowering the flaps allowed the functioning right aileron to mirror the drooping left, explaining the lack of oscillation and roll in the landing configuration. Also, the reduced lateral stability and roll rate I noted was as expected with one of the two ailerons out of commission.

In February, 2011, an updated FA-18C NATOPS was released. Among the new emergency procedures was "Uncommanded Roll/Yaw Excursions with Aileron Hard-Over." I dutifully memorized the sole immediate-action item for this procedure, but I didn't look through the remaining steps or read the discussion in the NATOPS Flight Manual (NFM). To be honest, the simplistic first step, "Rudder and stick – AGAINST YAW/ROLL," led me to assume the procedure was a common-sense application that didn't warrant further investigation.

DURING THE COURSE of this emergency, it never even occurred to me, or the others involved, that we were experiencing an "Uncommanded Roll/Yaw Excursion." Had we read the NFM discussion, or taken time to fully investigate the flight-control positions, the nature of the emergency would have been obvious. The NFM clearly explains the lack of warning-system indications, the need to alter airspeed to reduce oscillations, and the fact that lowering the flaps greatly reduces the tendency to roll. More importantly, it warns that lateral asymmetries consistent with our normal carrier-launch configuration may produce insufficient lateral-stick authority to arrest the uncommanded roll. Based on the oscillations I had and the close proximity to the water, had this failure occurred during launch it almost surely would have resulted in a catastrophic loss. This occurrence validates the FCF requirement that checks be performed at or above 10,000 feet AGL.

LCDR. HIGGINS FLIES WITH VFA-34.

A LITTLE Late

BY LCDR. NICHOLAS BRANDT

The mighty Hercules and her crew began the day with a takeoff from Kuwait at 0900 following a long and mostly sleepless night in the aircrew tents. We were tired having crossed 11 time zones in four days. We were also a little late, because apparently the Kuwaiti version of the Blue Angels doesn't feel the need to NOTAM their practice sessions. Following a quick fuel stop in the U.A.E., we proceeded to Diego Garcia. On-top time was 2330 on a clear, moonless night.

I was in the right seat, and as the C-130 NATOPS evaluator, I was the aircraft commander. My copilot in the left seat was a veteran COD pilot and training-command instructor, just getting ready to upgrade to a Herc aircraft commander. A second copilot, an experienced post-command O-5, was also in the cockpit. The flight engineer, an assistant squadron NATOPS instructor, had just been selected as our airwing's Sailor of the Year. This was a good crew.

We were cleared direct to the IAF for the ILS approach to runway 31. I easily could see the runway despite the pitch black night and occasional low cloud. The pilot at the controls (PAC) was lined up on the localizer, but I could see that it didn't exactly correspond to the runway centerline. I've seen that happen several times before, especially outside the continental United States (OCONUS), so I didn't think much of it. I advised him to line up visually, which he did at about five miles.

The runway had HIRL, VASI, and REIL, and was the only lighted area we could see. We reported gear down, and were cleared to land on runway 31. Crossing the threshold, the runway markings didn't seem quite right. The PAC asked if there was a displaced threshold, and I responded that none was depicted. I looked out and saw a 7 board, and a clear, well-lit runway in front of us. We decided that it was safe to continue.

Touchdown was smooth, but at about 90 knots on reversal, we had a problem — a big problem. An unlit concrete barricade was right in front of us and getting closer by the second. We all saw it at the same time, and the PAC continued with full reverse thrust and aggressive anti-skid braking. We stopped about 500 feet from the barricade, which was between the 3 and 4 boards.

"Tower, Convoy 3982. Uh, we've stopped here on the runway. What would you like us to do?"

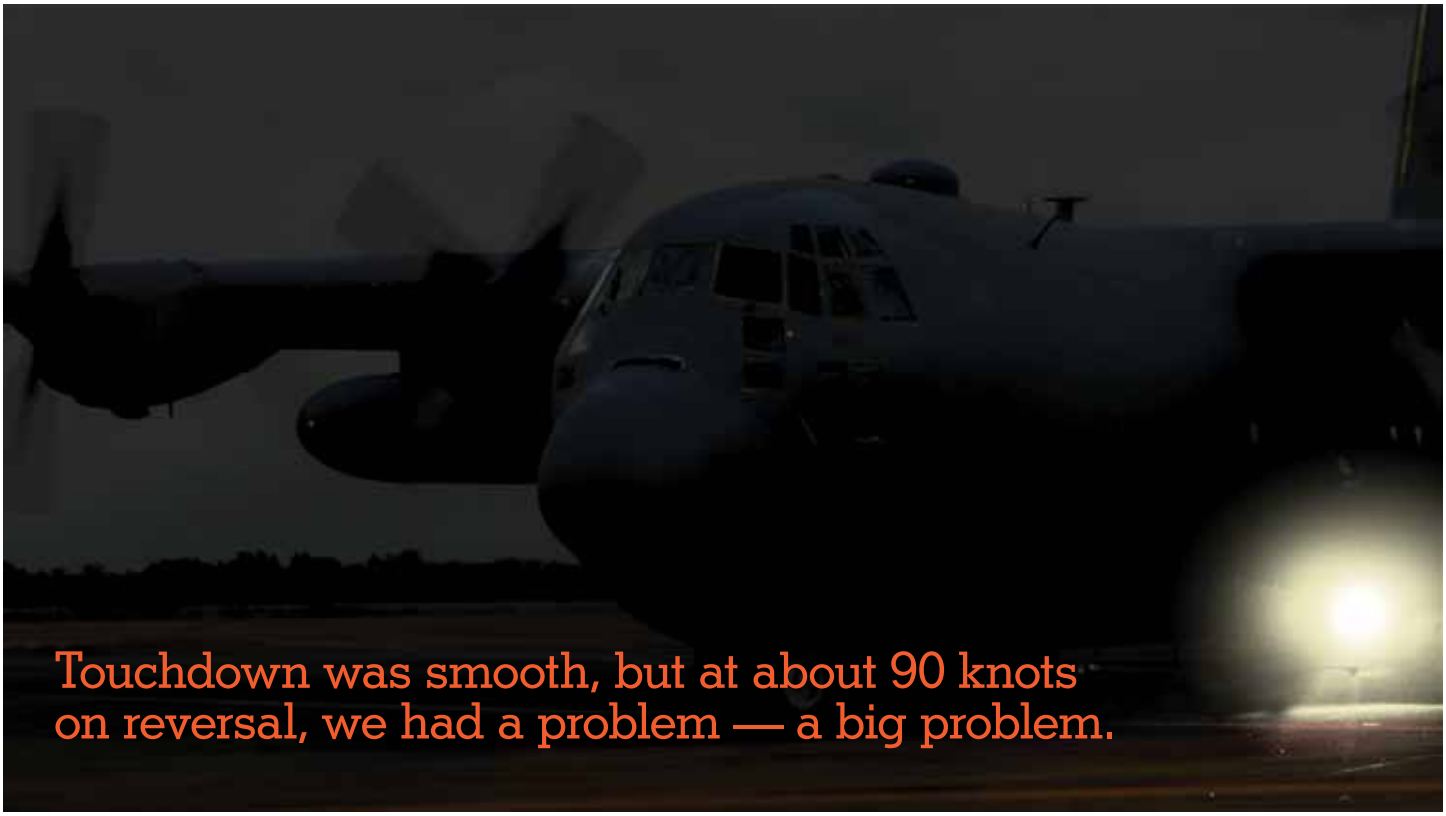
"Convoy 3982, taxi to the end, exit on bravo to the north ramp for parking."

As I pondered the impossibility of following those instructions, I looked to the left with the aid of the landing lights, and I saw the main runway, completely unlit. I looked to the right and saw a ramp with several C-5s parked. I looked at the airfield diagram in front of me and realized we must be on the parallel taxiway, even though the lights were white, not blue.

I asked the controller if the taxiway had been lit as the runway. He said he couldn't tell, since the windows on that side of the tower were fogged over and unusable. He cleared us onto the runway via taxiway Delta for taxi to our parking spot.

As we pulled onto the actual runway, the white lights came up, and the parallel taxiway lights behind us changed from white to blue. The passengers had no idea what had happened. And after a 14-plus-hour duty day, we just wanted to sleep — after having the seat cushions surgically removed by the flight doc, of course.

Looking back, I wish I had initiated a go-around. However, with the combined experience of more than 15,000 hours of flight time, the three pilots and the



Touchdown was smooth, but at about 90 knots on reversal, we had a problem — a big problem.

flight engineer in the cockpit (every one of us current or prior instructors/evaluators) all agree that given that same situation and knowledge, we would do the same thing again. For all we knew, if we had initiated a go-around, we would have come back around to the same surface. We had no idea there was a concrete barricade in front of us. None of us had ever seen or heard about anything like this happening before. Now we have, and so have you.

After talking about it at length, our critical decision points were:

- We flew an approach where the lineup did not exactly coincide with the runway. I think it's safe to say we've all seen this, especially on non-RNAV approaches. Now, be honest, would you immediately have told the controller about it? If you're like me, or the dozen or so other highly experienced naval aviators I've asked, your answer would be "no." Oh, I might have said something after landing rollout, assuming it was a ground electronics-maintenance issue, but that obviously wasn't the case here. If we'd hit that barricade, that notification would have been a little late. From now on, I will assume nothing and ask the controller about it while on the approach. Because that localizer probably lined up perfectly with the unlit main runway, that call might have prompted the controller to check his light switches.

- We had crossed the threshold when there were visual hints it didn't look right. In our defense, none of us were familiar with the field. Add to that the white lights, VASI, HIRL, REIL and the inability to see anything left or right of the "runway" because of the black-hole effect of an island approach at night. The parallel taxiway at Diego Garcia is an alternate runway for use when the main runway is closed. We were cleared to land on a runway, and that "alternate runway" was all that we could see. Fatigue was certainly a contributor to our decision-making process and kept us from instantly analyzing all of the available information. Armed with experience, the next time I see anything like that I will go-around, ask the controller about it, or both.

This whole ordeal reminds me of the old joke about the difference between a pilot and an air-traffic controller. If the pilot messes up, the pilot could die. If the air-traffic controller messes up, the pilot could die.

We were fortunate that night. Two of us in that cockpit were former C-9 pilots. If we had been flying a C-9 that night, we would have hit that barricade with catastrophic results.

LCDR. BRANDT FLIES WITH COMMANDER FLEET LOGISTICS SUPPORT WING.

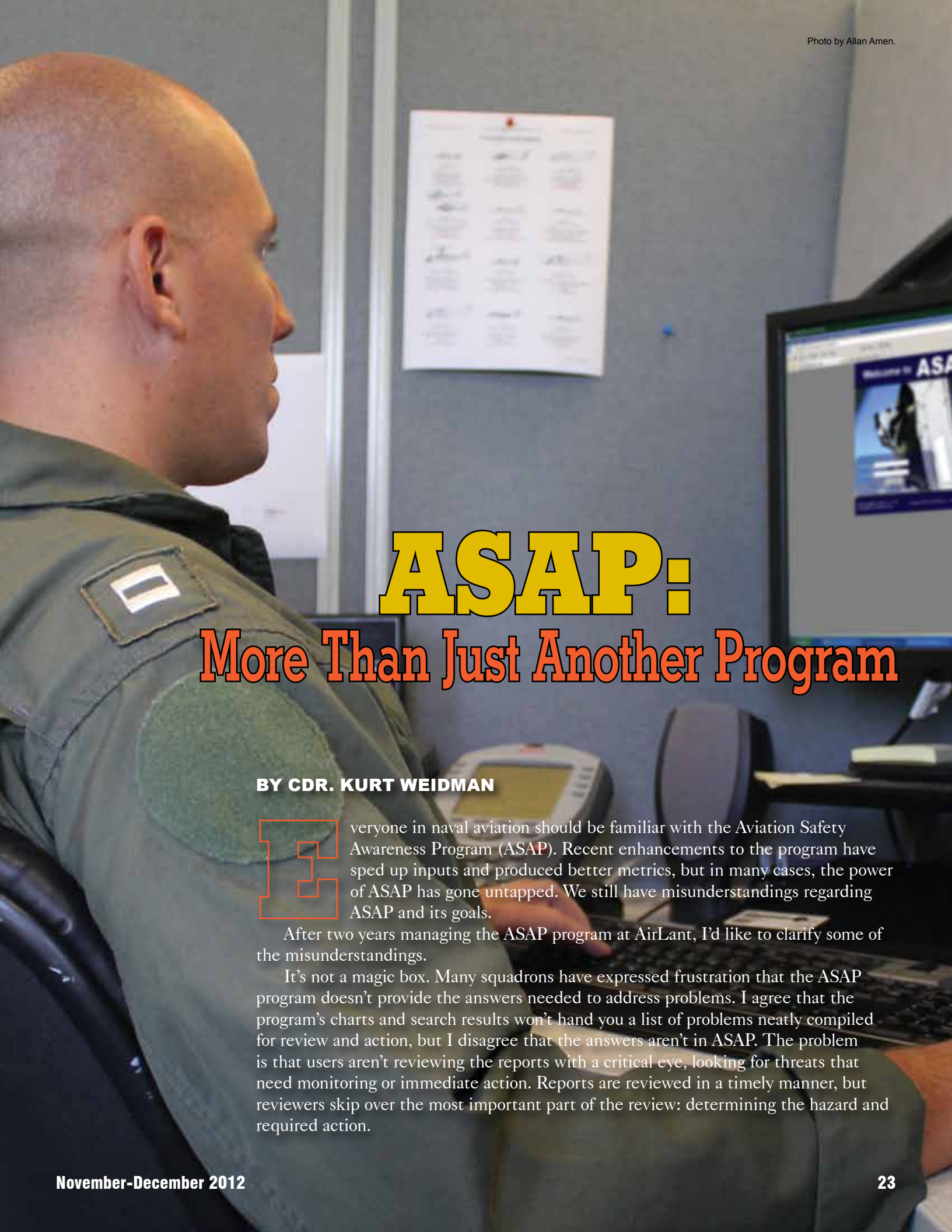


Photo by Allan Amen.

ASAP: More Than Just Another Program

BY CDR. KURT WEIDMAN

Everyone in naval aviation should be familiar with the Aviation Safety Awareness Program (ASAP). Recent enhancements to the program have sped up inputs and produced better metrics, but in many cases, the power of ASAP has gone untapped. We still have misunderstandings regarding ASAP and its goals.

After two years managing the ASAP program at AirLant, I'd like to clarify some of the misunderstandings.

It's not a magic box. Many squadrons have expressed frustration that the ASAP program doesn't provide the answers needed to address problems. I agree that the program's charts and search results won't hand you a list of problems neatly compiled for review and action, but I disagree that the answers aren't in ASAP. The problem is that users aren't reviewing the reports with a critical eye, looking for threats that need monitoring or immediate action. Reports are reviewed in a timely manner, but reviewers skip over the most important part of the review: determining the hazard and required action.

ASAP

Squadrons and wings are quickly realizing that a review conducted across the entire wing shows surprising trends and similarities in report topics.

The FAA equivalent of our ASAP program directs a committee at each airline to review all ASAP reports and determine action. At AirLant, we hold a comparable monthly roundtable for each of our type wings. The goal is to help develop the skills and structure needed in each community to fully exploit the power of ASAP. The response to the roundtables has been overwhelmingly positive. We've seen an increase in identifying and eliminating hazards documented by ASAP. Squadrons and wings are quickly realizing that a review conducted across the entire wing shows surprising trends and similarities in report topics. Hazard identification is more effective when viewed in aggregate.

Take-away No. 1.

The ASAP report review and subsequent actions are essential to removing hazards and reducing mishaps. Aggregate wing-wide reviews are more effective for signaling negative trends.

There's no need to swing for the fences. For some reason, naval aviation has adopted a mindset that unless ASAP can provide spectacular saves, then it's not working as intended. That's wrong. ASAP's successes are rooted in small, incremental advances in safety. Many times the masses are unaware of the hazard or the fix.

I've seen this across all communities. Regardless if it's an unmarked tower removed from a low-level route, improved course rules, or just an advance heads-up of unique airfield issues, few realize that ASAP was instrumental to the action. The process is slow and requires hard work behind the scenes, but it has an undeniable cumulative effect. The organizations within our enterprise that have embraced ASAP have clearly demonstrated that a well-run ASAP program will eliminate hazards one small step at a time, and that can (should) lead to reduced mishaps.

Take-away No. 2.

Although you shouldn't expect the sensational from ASAP, a well-run program will show surprising, workmanlike results.

The trend is your friend. One of the most common pushbacks I receive regarding ASAP is, "We already know about the hazards in ASAP." I agree that sometimes ASAP contains well-known hazards, but many are not documented or tracked. You can't manage what you don't measure. A simple way to find a trend in ASAP is to look for "blooming," or a spike in reporting. Generally, aviators do not gratuitously report, and when there is unusual reporting activity it's a good indication a problem is at hand. The same goes for hazards that are well-known, already have been addressed and the trends noted in ASAP.

ASAP is an excellent way to monitor the mitigation effort. If there is a decline in ASAP reporting on a particular subject, then most likely the fix worked. If the same number or more reports show up, then it's a clear signal to "fix the fix." In every case where ASAP has been challenged because the threat is well-known, no one has been able to deliver precise metrics as to how the mitigation efforts have improved the situation. To discount this aspect of ASAP is ignoring one of the largest benefits of the program.

The Aviation Safety Awareness Program (ASAP) is an online, hazard self-reporting process used at the squadron, wing, and type-wing level. ASAP helps identify hazards, unsafe trends and leading indicators to increase safety and improve operational efficiency. A description of the program and reporting requirements can be found in OPNAVINST 3710.7U section 3.15.

Because ASAP is a 3710 requirement, completing a postflight ASAP report is not an option.

Take-away No. 3.

ASAP, especially when aggregated at the wing or regional level, is our best resource for quickly identifying hazards and precisely monitoring mitigation efforts.

One of the largest complaints I've heard is that ASAP is unnecessary because we already have many ways to report hazards. That's true, but few have the power of ASAP. Hazreps can be time-consuming and not appropriate for smaller items. Those smaller items reported in ASAP can eventually reach critical mass due to volume, and some commands have used trends established by ASAP as the basis for hazreps. Frequently with ASAP, a fix is in place before a hazrep needs to be released. Naval aviation commonly uses the hazrep system for high-threat hazards, but not for systemic threats. ASAP has allowed the conversion of recorded systemic threats into tangible trends on which to act. In other words, the small stuff (think "leading indicators") that wouldn't make the hazrep cut is now recorded and trended. Those small problems can establish big trends, and it's obvious there is significant benefit in fixing small problems before they spiral out of control. Using leading indicators and taking swift action is why ASAP has succeeded at commercial airlines, and it holds the same potential for us.

Anymouse reports are also referenced as a reason why ASAP is redundant. Unfortunately, anymouse reports are not recorded in a larger database where they can be trended within a T/M/S, geographic area, demographic or other population which may make the data reveal conclusive trends. An anymouse generally stays within a squadron, and the lesson learned from it rarely goes beyond that command. In contrast, the central database and easy access to data searches and charts make ASAP well-suited to widely disseminate trends and information.

The lower volume of hazreps and the limited scope of anymouse programs do not outweigh ASAP's benefits.

Take-away No. 4.

ASAP is uniquely positioned to quickly identify and monitor hazards with better fidelity than any other safety tool available.

As an enterprise, we are just beginning to recognize the potential of ASAP. Some communities have embraced and profited from ASAP. With continued education, improved software and emphasis by our leaders, I'm confident that naval aviation will be well served by ASAP. I'll close with a few bullet points to add to the take-aways:

- A review of reports to determine action is as important as the report itself.
- An aggregate review, such as type-wing review, is even better at spotting negative trends.
- Any review should be periodic and provide a means to communicate findings and actions. (Current CNAL/CNAP policy allows a maximum of seven days between reviews).

An ASAP program without action is like a plane without wings; it won't fly.

CDR. WEIDMAN DIRECTS THE ASAP AND MFOQA PROGRAMS AT NAVAL AIR FORCE ATLANTIC.

Do What's Necessary

BY CAPT. JEREMY GREENFIELD, USMC

We were enjoying one of the first good-weather days in several weeks at North Whiting field — perfect for a contact flight. I had recently received my first two on-wings in VT-6. This flight would be my Marine student's fifth flight in the T-6B.

We went through the standard brief and planned to fly to the Pensacola North military-operating area (North MOA) to complete high work, which includes a spin, stalls and numerous other maneuvers.

We took off from runway 05 and headed to the North MOA. Initially, we did a power-on stall (POS) to gain altitude in the block. The entry into the spin was normal, with my student doing a good job of reading off-spin indications. I had him recover using the standard NATOPS "idle/neutral" recovery during the incipient spin. My student pushed the stick slightly forward of neutral, which caused us to recover quickly, with less than 1 G flight. After checking oil pressure, we advanced the power-control lever (PCL) to max and initiated a climb for the next maneuver.

At level off, my student said the PCL was stuck. I immediately took the controls and tried to retard the PCL. We were at 16,000 feet and torque would not go below 76 percent. I could advance the PCL, but something was not allowing me to physically retard it below about three-quarters PCL forward and 76-percent torque. I told my student to adjust the PCL friction — no luck.

I tried a few positive and negative G, up-and-down movements. I also wiggled the PCL back and forth, and I tried pulling it back hard while being careful not to pull it off. Nothing seemed to work. I extended the speedbrake to control our airspeed at about 200 knots. I made a comm call to our nearest divert field, Evergreen OLF, to confirm the duty runway and that we were troubleshooting. My next call was to our squadron flight-duty officer (FDO), a senior instructor pilot (IP), who runs the flight schedule and monitors our base frequency. He suggested similar maneuvers — again, no luck.

We decided to return to home field while the FDO sought further assistance. I declared an emergency with Jacksonville Center, who requested we descend to 10,000 feet.

We were about 30 miles away from Whiting Field, making our dead-engine-glide altitude (DEGA) close to 18,000 feet. I opted to stay at 17,000 feet until closer to the field. We had 850 pounds of fuel and were burning 400 pounds per hour, which gave us plenty of time.

We arrived overhead at Whiting, switched to Pensacola Approach, and descended to 10,000 feet MSL. We orbited just west of the field. I had to keep extending the speedbrake, because it retracted each time I touched the PCL. Even with the speedbrake extended, we stayed at 200 knots.

Throughout the emergency, I worked with my student to assure him everything was fine and to stay calm. We had plenty of time to formulate a good plan. I was new to the T-6, with less than 20 instructional flights, and it was my first emergency in the plane. My instructor training and several actual emergencies in the FA-18 and T-45 helped me stay calm, which helped my student remain calm.

The FDO contacted local contract-maintenance personnel and other senior pilots for more troubleshooting ideas. The NATOPS and pocket checklist did not have a procedure for a stuck PCL. The FDO suggested lifting the idle cut-off handle to retard the PCL. I tried this while being careful to not pull back too far and shut down the engine — no success. I tried several more times to wiggle the PCL, do positive and negative G maneuvers and even going inverted.

The conversation in the plane began to focus on what we would do if we couldn't retard the PCL. My student read aloud the failed-engine checklist, the forced-landing checklist, the PEL checklist, the emergency gear-extension checklist, and all the associated notes, warnings and cautions. I let my student know that since we had over an hour of fuel left, we had a lot of time to work on a gameplan and talk about contingencies. I also mentioned that we were burning down fuel so the plane would be lighter in case we had to land with the engine shut down. I asked the FDO if there was any talk of diverting to NAS Pensacola, because the runways were much longer. Apparently that option already was being discussed.

As more time went by, I was resolved that we'd have to shut down the engine by pulling the emergency firewall-shutoff handle or by waiting until we flamed out. With such a high power setting, I did not want to come down low and shut down just before the runway. It would be better to shut down up high and execute a standard forced-landing profile.

My student read through the controlled-ejection procedures to prep us in case we couldn't make a forced landing. We stowed the loose gear.

My student remained calm. We even joked a little about sounding cool over the radios in any situation.

The FDO initiated procedures to seek assistance from Hawker-Beechcraft (HB). They recommended I advance the PCL toward max, roll inverted, push to negative two G's, and advance the PCL beyond the point at which it could not be retarded. I already had tried pushing negative G's while inverted, so I knew I would have to push hard. I told my student to hold on as I advanced the PCL, rolled inverted and pushed the stick forward. As I pushed the stick forward, I pulled the PCL back, and to my amazement it came to idle. I rolled back upright and let the FDO know the procedure had worked. I moved the PCL slightly, even briefly advancing it to around 60 percent, but no higher.

We decided to fly a precautionary-emergency landing (PEL) to the duty runway at North Whiting. I coordinated the PEL with tower, set the PCL to six-percent torque to simulate a feathered-prop condition and landed. I told tower that I didn't need any assistance and taxied to park. I also let the FDO know we were on deck.

When maintenance advanced the PCL on the ground, it once again got stuck. They found an adjustment knob for a helmet visor, reported as FOD six months earlier, had become lodged in the PCL.

If that piece of FOD hadn't been in the aircraft, this event would not have occurred. Another takeaway was to remain calm, especially with a new flight student. If the NATOPS does not prescribe a certain procedure, do what's necessary to fly and land. Not all decisions need to be made immediately in an emergency situation. The nature of some emergencies affords you time to think through courses of action, get assistance, and come to a best solution for the problem at hand.

After debriefing with the CO and safety, I felt the weather was too nice to cancel my second flight, so I went up for a flight with my other on-wing.

CAPT. GREENFIELD FLIES WITH VT-6.

Please send your questions, comments or recommendations to:
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Not Quite a Rock Star

BY LT. DAVID WILLIAMS

"Williams, you're Pri-A."

I can't remember who said it, and it doesn't matter. It was something I had never expected to hear come my way. I had heard the horror stories of guys being tapped as a Pri-A and going straight to a squadron already on deployment. They always were the rock stars who excelled well above and beyond your average primary, advanced and FRS student — not average guys like me.

Turns out you don't have to be as much of a rock star as I thought, you just have to be one of two guys next in line to finish the FA-18 FRS when the Navy needs two Pri-A pilots. Like any other person would do, I immediately started looking at the squadrons that were already deployed or deploying within the next couple of months. I came to a real and sobering conclusion: While I would complete the FRS on the East Coast, I would be going to a West Coast squadron already at sea.

Carrier qualifications (CQ) continued with a few hiccups before I headed to the boat from NAS Oceana. I was no less nervous than my previous CQ det in the T-45.

The weather over USS *Enterprise* (CVN-65) delayed the first wave from launching on time, so the second wave of Cat 1 pilots took off just after the first wave was airborne. The plan was for the two other pilots and me to come into the break off of the wing of a Cat other. That way, we could tackle the day pattern under some sort of normalcy. That plan was blown up by the marshal controller's call telling us that the weather was Case III, which meant we would all be coming down as singles for a straight-in (it upgraded to Case II before we broke up the flight.) As Dash 4, I would go down first and enter the break. Dash 3 would come down at some point behind me, and then the other two.

By the time I got down to 1,200 feet and eight miles, I still couldn't see the ship. I continued to 800 feet, but it wasn't until three to four miles out before I could make a "see you" call. My first attempt at the break resulted in a "spin it" call from the boss. My second attempt was a depart and re-enter. The third try was another spin call, followed by a second depart and reenter. By the time I established myself in the pattern, I only had gas for one touch-and-go and then a trap.

The winds behind the boat were different from what we had experienced during field carrier landing practice (FCLPs) back at the field. Winds were gusting, and the burble behind *Enterprise* is a little more exaggerated than *Nimitz* class ships. The rest of CQ was tough because of the weather, but manageable. I returned to base after completing CQs having been introduced to unexpected procedures, bad weather, gusty winds and an overall challenging situation.

Fast forward exactly one week. I had qualified on a Sunday evening about 100 miles east of Oceana. By the next Sunday, I was on the other side of the world in Guam, waiting to hop on a COD to fly out to USS *Carl Vinson* (CVN-70). When I arrived on board, I was greeted by my new squadronmates. They began to introduce me to fleet-squadron life.

"Power. Power. Power. Wave off! Wave off!"

There are rules about how long a pilot must wait to fly after traveling over multiple time zones. We also had no-fly days as the ship steamed West, so it was a while before I got back into the cockpit for fleet CQ.

I was pumped to buckle up in the mighty Hornet and pick up where I had left off in FRS CQ. I briefed with one of the more senior guys in the squadron about the admin portion of flying around the boat, and then with our senior landing-signals officer (LSO) about CQ procedures.

I looked at the platform camera, seeing a little overcast, but nothing significant.

The early portion of the flight went well. I was surprised with my ability to fly decent form and hit the tanker on the first try. But, as naval aviators know, the most important part of any flight at sea was still to come, and maybe I was a little too confident.

We checked in with marshal, who relayed that we would be Case III, half flaps, and 33,000 pounds max-trap. I was OK with doing a CV-1 approach down to the straight-in, because you are almost guaranteed to show up to an on-and-on start. However, this half-flaps configuration behind the boat was foreign to me. I don't remember having ever flown the Hornet in the half-flaps configuration aside from fam-2, which was simulating a single-engine approach onto a 10,000-foot runway. I certainly hadn't done it because the winds were too high.

At my push time, I hit my DME on course and on time. But I was too fast, which led to the controller having to remind me to slow down. He eventually gave me vectors to fix the timing problem I had created. I then hit the point that makes the approach become real: the final-approach point at three miles.

I tried to tell myself it was just like CQ at night, but it wasn't. I was still in the clouds and probably a little behind the jet at pushover. I can't remember exactly where I broke out and saw the ship, but it was somewhere around a mile and a half. This view startled me — I had quickly forgotten what the sight picture was supposed to look like. I called the ball just like I had in the FRS (minus adding my last name), and that was about the last thing that went well.

"Roger ball, 43 knots."

I hadn't seen more than 30 knots, but I didn't really have time to think about how that was going to affect my approach. Tracking down glide slope wasn't hard from the start to the middle, but lineup started to fall out of my scan as I tried to focus on the ball.

"Right for line up."

My ears heard the call and my eyes made the mistake that every pilot knows better than to make. I stared at the landing area to correct my line up and stopped scanning the ball or referencing my VSI and velocity vector. (Looking back at my tape, I saw that as soon as I put in the lineup correction, my velocity vector fell from the crotch of the ship, back aft to the round down.)

"Power. Power. Power. Wave off! Wave off!"

Max blower was all I could do. I was along for the ride, not a feeling any carrier pilot enjoys. As I refocused on the ball, I watched it fall through all six cells below the datums and turn bright red.

I just had accomplished two firsts: my first flight in the fleet and my first "cut pass."

The lead LSO told me afterwards that I had actually touched down about 30 feet forward of the round down and hit so early that my tailhook had time to bounce up, skip the 1-, 2- and 3-wires, and then come back down to grab the 4. To say that my feet were shaking as I tried to taxi the jet to park on the flight deck is an understatement. The aftermath of the pass was a mix of embarrassment, frustration, anxiety and just being thankful to have survived.

I learned that while LSOs will generally give new guys a hard time and make fun of nuggets on a regular basis for their inability to fly the ball well, they are on that platform on every approach as your last line of defense when it comes to avoiding crashing into the back of the ship. I also learned that I was not as mentally prepared to fly in challenging conditions as I thought I was.

Landing a jet on a moving runway is difficult enough. Doing it with low visibility, high winds and in a configuration that you had maybe only flown once before requires focus and discipline that I had yet to develop. That mental preparedness starts before the morning of your flight, the beginning of CQ or even the first time you strap into the Hornet. It should have started for me the first time I stepped foot in the spaces of the fleet replacement squadron. That's when I heard that I could be flying my first approach in the fleet, off the coast of Hong Kong, and in conditions that would have canceled FRS CQ in a heartbeat.

Approach the FRS syllabus with a mindset to be fully prepared to deploy anywhere in the world within a week of your FRS CQ. Take full advantage of every opportunity to be ready for your first pass at the ship in less than ideal conditions.

LT. WILLIAMS FLIES WITH VFA-113.

BLAMMO !

BY LCDR. ZACHARY KIRBY

During predeployment work-ups, our EA-6B crew was scheduled for night, carrier-controlled approaches (CCAs) in the Whidbey Island radar pattern. Weather was forecast to be FEW030 SCT080 BKN100 with 7SM of visibility — a standard night for the Pacific Northwest in early March. At launch the weather was holding as forecast.

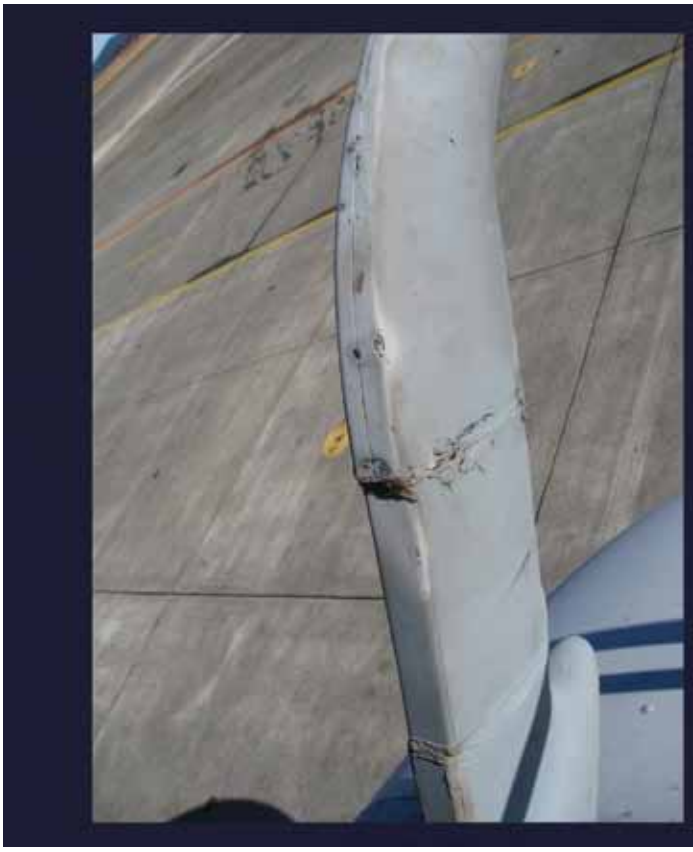
After a few laps in the pattern, we encountered precipitation and solid, instrument-meteorological conditions (IMC) during the last half of the downwind leg at 3,000 feet MSL. As I flew that leg, I noticed the clouds in front of our aircraft were glowing purple, which struck me as odd. A few seconds later the purple glow intensified, I leaned forward in the straps to peer around the Grumman iron. The tip of the refueling probe was engulfed in St. Elmo's fire, something I was used to seeing on the windscreen, but not on this part of the aircraft. A few minutes later, we were vectored onto a base leg and subsequently final. We broke out of the weather and flew the needles and ball to a touch-and-go.

On the next lap, we encountered the same weather, only much sooner than before. We noted that we had entered the precipitation and IMC conditions on climb-out before the downwind leg.

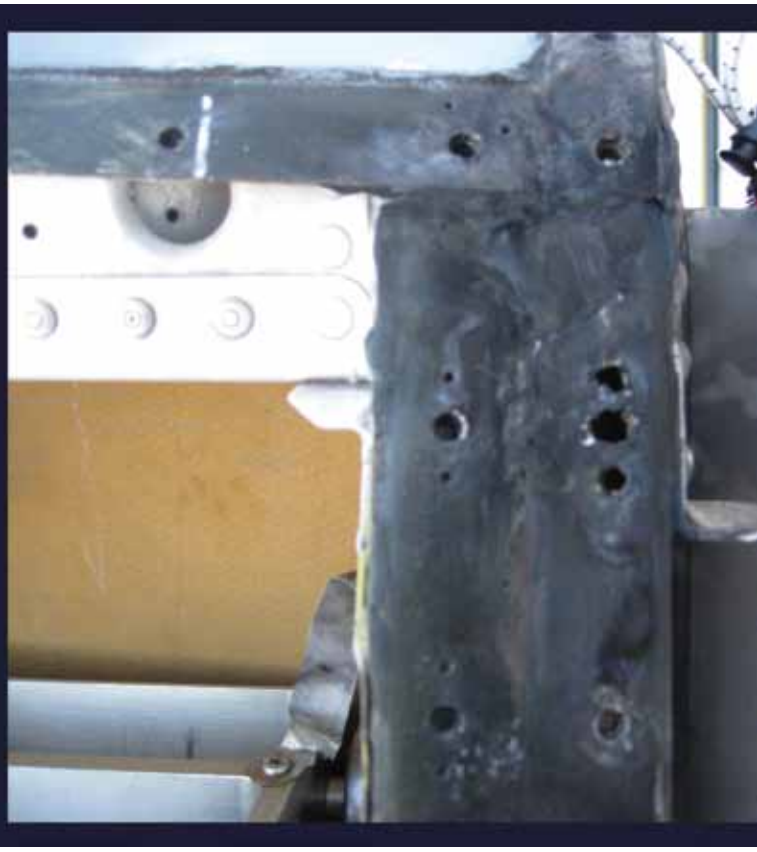
I saw the purple glow, but this time it was much more intense. I leaned forward to see the tiny "lightning bolts" that had been crawling around the tip of our refueling probe. To my amazement the mini-bolts were now much bigger. In a split-second, I watched as they extended to what appeared to be 20 to 30 feet in front of the aircraft. I remember cursing, and then, "blammo!"

We saw a bright flash of white, heard a loud explosion, and the aircraft shook violently. It felt as if I'd been hit in the face with a Nerf baseball bat by an angry frat brother. I immediately transitioned from leaning forward to sitting back in my ejection seat; I applied a little bit of power.

The first thing I realized was that I couldn't see. I remember telling the crew I was blinded, and that the jet was still flying and not to eject. My XO, who was sitting shotgun that night, said he also was blinded. I told the crew the plane was still flying and to stay with me. At the same time, I tried to figure out just how long



Refueling probe



Inside the football

until I hit the ground at 250 knots at about 10 to 20 degrees nose down.

I then realized I'm not all that good at math and decided to give it another 5 to 10 seconds before I had my crew eject because of my blindness. To my disappointment (I've always wanted a Martin-Baker patch and tie), I started to regain some vision. I leaned forward in the straps, as far as possible, to get as close to our attitude reference as possible. I fumbled for the display brightness knobs.

With the brightness all the way up, I slowly made out some symbology, but it wasn't enough to say with any confidence that we were upright and climbing. My ECMO 3 in the backseat was also blinded, and he felt like the wind was knocked out of him. He described the sensation as being inside a vacuumed cockpit.

He called, "Masks up!" repeatedly over the ICS, and we quickly responded.

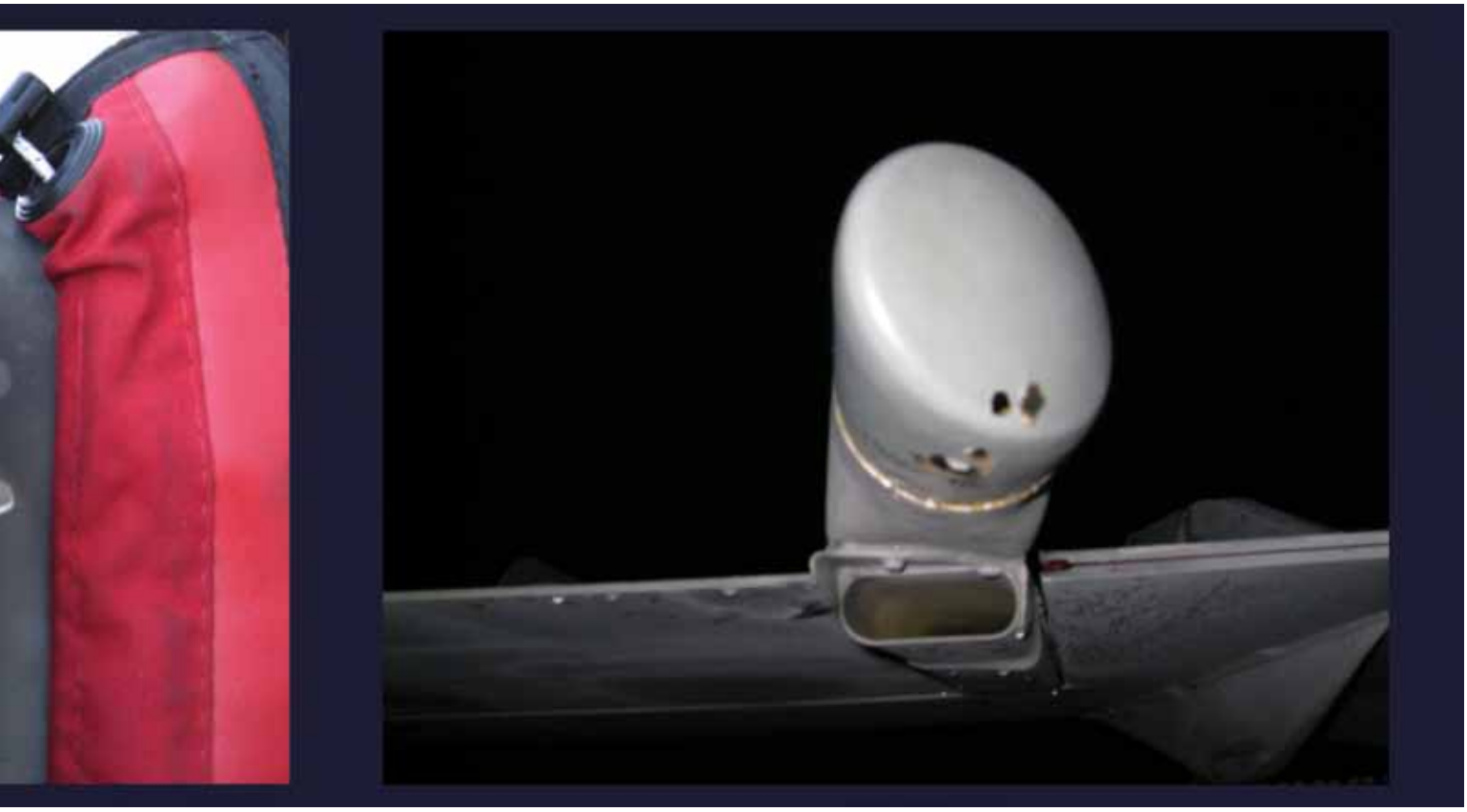
I continued to tell the crew not to eject — I had the jet based on my seat-of-the-pants sensations. We are taught to disregard those sensations and trust your instruments, but at this moment, I couldn't see our trusted instruments. I could tell from the familiar sound of the airflow that we hadn't picked up any speed, which should have meant we most likely were climbing because of my power addition.

I remember my XO reaching up between us for the thunderstorm lights that had been removed in an airframe change some years ago. He then reached down and turned the transponder to emergency. I made a radio transmission to approach control telling them we had just been struck by lightning, that we were experiencing temporary blindness, and that we required immediate vectors to a field arrestment as soon as we could see again. As we climbed through 6,000 to 7,000 feet MSL, I regained enough vision to feel comfortable leveling off and making the approach.

After a quick assessment and chat with our squadron LSO, who was on station, we determined I had less than 50 percent of my vision. Most of my peripheral was gone, and I had several spots of blindness in my main vision.

The LSO said the runway was covered with about an inch of snow. This surprised us considering snow was nowhere in the weather forecast, and we hadn't seen any that night.

As we turned to final and started to fly the needles, I realized just how messed-up I felt. My flight information



Starboard fuel vent

glass displays, were completely monochrome; I saw only different shades of silver. My face was numb. I still had no peripheral vision, and had to continuously scan to use my main vision because of the blind spots. I couldn't focus on anything. I had to look slightly away from whatever I wanted to see and place it in a useable area of my vision.

Our head LSO did a great job calling paddles contact as we approached two to three miles, and he talked us into the short-field gear. The crash crew got us untangled from the gear, and we cautiously taxied to our line.

I had no recollection of configuring for the landing or slowing to on-speed. I thank standard procedures, checklist adherence, and the great backup I received from my XO for the landing. A flight doc was waiting for us and gave us each a thorough check before sending us home that night.

The next day we contacted our regional weather forecaster in San Diego to discuss the previous night's events. We were told a weather warning had been published by San Diego around the time of the lightning strike, but it had not been broadcast to our region. My skipper researched the weather and found the conditions developed rapidly and without warning because of the Puget Sound Convergence Zone. This allows a warm southerly flow of air to collide with a cold northwesterly flow, causing rapid convective activity in the vicinity of the field. This condition formed heavy snow showers. This explains our IMC conditions on downwind while final and the field were CAVU. The weather finally closed onto the field as we made our short-field arrestment.

Lightning can seriously damage an aircraft, especially sensitive electronic systems on Prowlers. We are continually at risk; even the most mundane flights can become exciting or even catastrophic. I wasn't prepared to be hit by lightning, and although I now know what it entails, I'm not sure I could ever be prepared.

What I do know is there is a place for seat-of-the-pants flying, coupled with sticking to standard-operating procedures and adhering to our checklists. On the preflight-planning side of things, we either need weather forecasters who are closer than 1,000 miles away or a better way for those forecasters to warn us of possible dangers headed our way. Of course if you see something that looks like purple lightning extending from the front of your aircraft, sit back, close your eyes and hold on.

LCDR. KIRBY FLIES WITH VAQ-140.

If the NATOPS does not prescribe a certain procedure, do what's necessary to fly and land. Not all decisions need to be made immediately in an emergency situation. The nature of some emergencies affords you time to think through courses of action, get assistance, and come to a best solution for the problem at hand.

—Capt. Jeremy Greenfield, USMC, VT-6