THE NAVY & MARINE CORPS AVIATION SAFETY MAGAZINE

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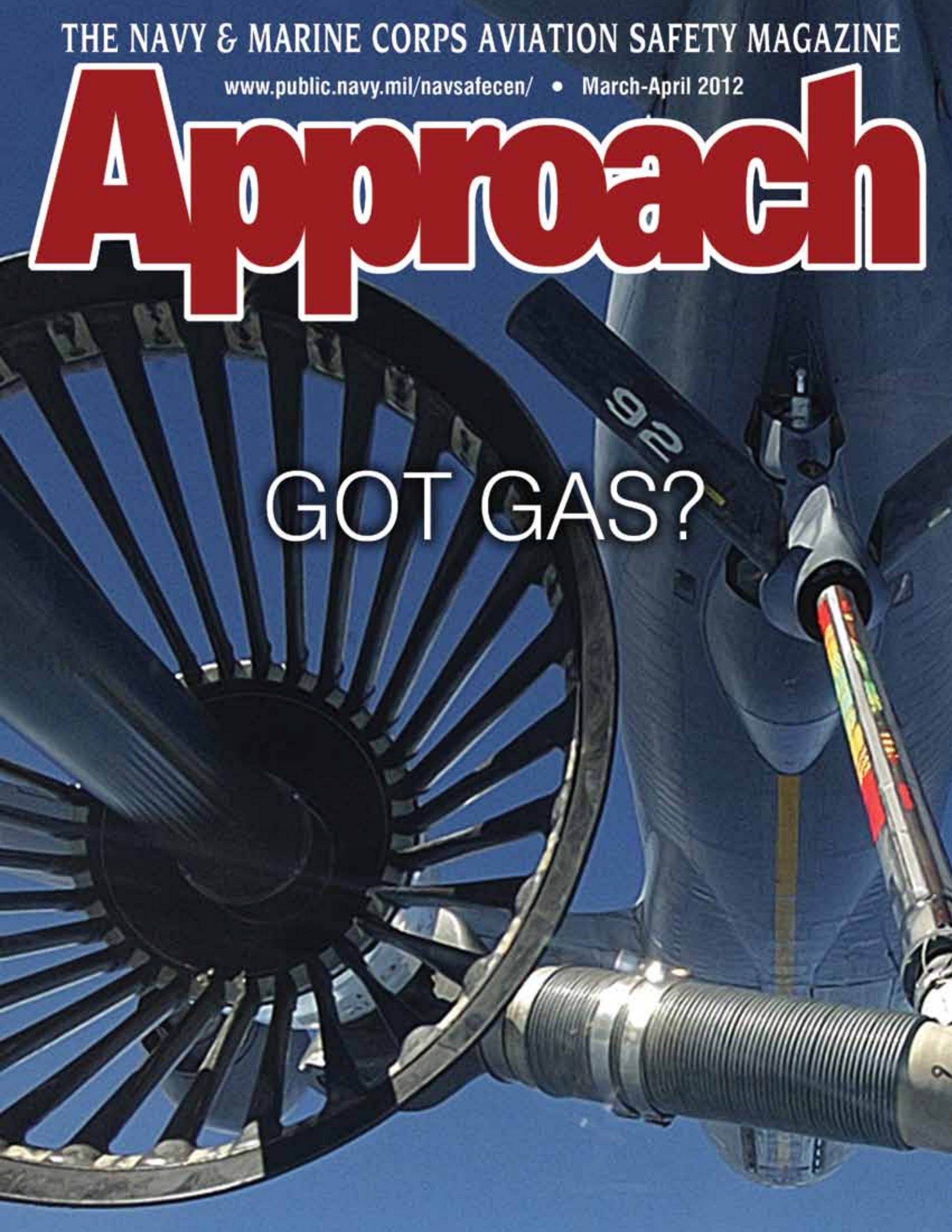
Approach



GOT GAS?

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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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Features

Focus On Fuel

This issue features several articles on the substance we need to keep the engines working: fuel. From the moment you start to preflight the attention consistently comes back to making sure you have enough gas. What about the diverts, inflight refueling, availability at stopover airfields, bingo state or crossfeed issues? Gas, or rather, enough gas, is a critical concern on every mission.

Front cover: KC-135 tanker conducts air refueling. Navy photo by Ltjg. Shawn Malone.
Back cover: An FA-18F Super Hornet from the Black Aces of VFA 41 lands on the flight deck of USS *John C. Stennis* (CVN 74). Photo by MC3 Benjamin Crossley.

NTENTS

March-April Thanks

Thanks for helping with this issue …
LCdr. Marvin Scott, VFA-31
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LCdr. Will Mathis, VFA-87
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Photo by MC2 Todd Frantom.

Departments

Visit Approach online

The Iron Strike

BY LT. SCOTT SULICH

Our squadron was embarked on USS *George H.W. Bush* (CVN-77) for a CompTUEx, as the carrier prepared for its maiden deployment. The air wing was qualifying each pilot for big-wing tanking, with an Air Force KC-135 as the aerial-refueling support. Our squadron training and preflight briefs focused on the Iron Maiden. My lead briefed the flight, emphasizing sight pictures and tanking procedures.

Maiden s Again

I walked to the jet ready for my day close-air-support (CAS) training mission to the Pinecastle Range in Florida. The mission was a joint exercise with Army Special Forces JTACs, and my jet was loaded with two live 500 pound BLU-111s and 150 rounds of 20 mm. The mission called for us to refuel with the KC-135 on the front side, and then I would rendezvous with my lead.

I joined the tanker at 20,000 feet and was third in line. My lead already was in the basket. The two jets ahead of me were another section of Hornets, also heading to Pinecastle for CAS. Their lead, our DCAG, saw the opportunity to allow our section to go to the range ahead of his and offered to let me cut in line. I crossed under the other section and joined port observation. I soon was cleared aft and into the basket. As the tanker started a left turn, I made the plug on the first try. "Not bad," I thought, because this was only my third time on the Iron Maiden. I was working hard to stay in the basket, and everything was going well enough. I was nearly done receiving when things became interesting.

As the tanker began to roll wings-level, I began a pilot-induced oscillation (PIO). The PIO put the jet in a position where I was too far forward and left. As I worked to get back into position, the drogue hose tore at the boom-attach point, starting a stream of fuel from the boom. I managed to steady the jet, move aft, and release the basket from the same point in space from where I had plugged it. This action was critical, because the drogue hose was hanging onto the boom by a thread. The metal coil grounding wire that wraps around the boom and hose was all that connected it to the aircraft.

I proceeded down and to the right after removing my probe from the basket. There was no basket or hose slap on the jet, and no damage done to the probe (which was confirmed by a postflight inspection of the in-flight refueling probe). After a discussion about the jet's status and what had happened, my lead and I continued our mission. The remainder of the flight was uneventful as we completed the mission and came back for the practice Case III day trap.

During postflight, my lead and I pondered the decision to continue the mission with only a visual inspection. We were working bingo/divert operations off the coast of Florida, so the option to land at an airport with arresting gear was always available if I couldn't refuel again. The situation may have been different if we had been working combat and/or blue-water operations, requiring the ability to refuel again and again.

Was a visual inspection from inside the cockpit enough to determine that the probe was not damaged? The probe appeared intact and reseated properly when stowed, so I had reasonable certainty that I could use it again. Also, all other systems were working as advertised (such as the AOA probes and pitot tubes), which reaffirmed my observation that the basket and hose never touched the fuselage. In a tank-state scenario, I would want to be certain my probe would function before going below a field-divert bingo fuel state. This scenario would require coordination with another tanker to verify that I could continue to receive fuel.

While the incident can be partly attributed to my lack of KC-135 tanking experience, the primary cause was my failure to fly a smooth jet while in the basket. Concentration and focus are paramount anytime you refuel with a KC-135. When things get hairy, it is important to keep calm and to exercise sound judgment and solid procedures. By doing just that, I managed to leave the basket where I found it and didn't bring home a souvenir for the ready room. After determining that my jet still was mission capable, it was critical to compartmentalize what had happened and to focus on the next task. Incidentally, all my ordnance was on target and on time.

Finally, think twice about letting anyone cut in front of you at the tanker, especially if it's an FNGs third time on the Maiden. ■

LT. SULICH FLIES WITH VFA-31.

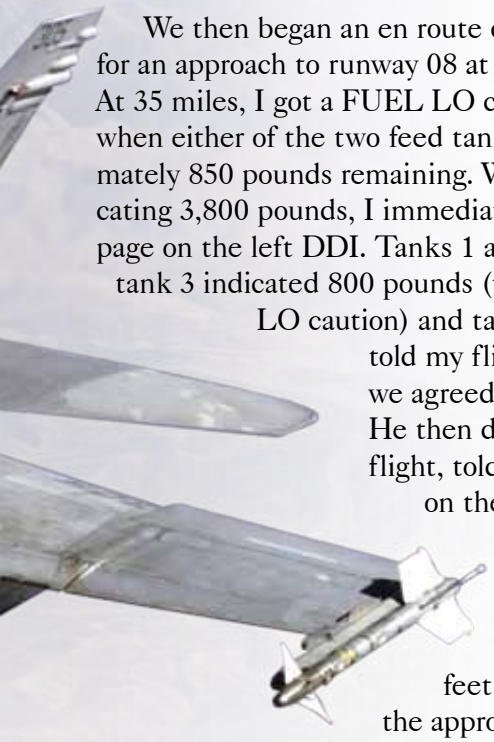
To Press Or Not To Press

BY LT. CHAD FORTIN

The day started like most others when you're on the road: woke up, got dressed, and headed to a restaurant for breakfast. After arriving at Austin-Bergstrom International Airport, we planned our route of flight and did a quick admin brief. I was Dash 3 in a flight of three. We got weather and filed our flight plan while our jets were fueled. After completing a standard cross-country preflight, we were on our way. The weather was beautiful and was expected to remain that way for our entire flight, with the exception of scattered cumulus clouds for our destination.

Once we leveled off at FL280, we looked at what our estimated fuel on deck would be. Because our leg to Albuquerque was short, we decided to speed up a little because the jets were due in NAS Fallon later that afternoon. The flight was uneventful until 40 miles east of our destination.

I was flying formation on the left side of my flight lead and had just skirted a cloud when lead came up on the AUX radio. He said I was "marking," meaning I was leaving a condensation trail. I looked at the other two jets and noticed they were not. I thought that it may have something to do with passing through that cloud. About a minute later, we did another ops check. I was now 1,000 pounds lower on fuel than the other two jets. My flight performance advisory system (FPAS) still showed me on deck with 2,800 pounds, so I wasn't super concerned. I attributed the higher fuel burn to the improved multiple-ejector racks (IMERs) that I had on each wing. We slowed to max-range airspeed to conserve fuel.



We then began an en route descent on radar vectors for an approach to runway 08 at Albuquerque (KABQ). At 35 miles, I got a FUEL LO caution, which happens when either of the two feed tanks reaches approximately 850 pounds remaining. With my total fuel indicating 3,800 pounds, I immediately checked my fuel page on the left DDI. Tanks 1 and 2 looked normal, but tank 3 indicated 800 pounds (the cause of the FUEL LO caution) and tank 4 was near zero. I told my flight lead what I saw, and we agreed that I was losing fuel. He then detached me from the flight, told me to put the airport on the nose and declare an emergency.

I was in trouble. We were descending from FL280 to 16,000 feet on radar vectors for the approach to runway 08. I did not believe I'd have the fuel to circle around from the west to make runway 08. The winds were light and the runway was almost 14,000 feet long, so stopping would not be an issue. I decided landing on runway 26 would be my best option.

As I declared an emergency, I was about 30 miles east of the airport. Approach was having a hard time understanding what was happening and kept answering me with my flight lead's call sign. Because I did not initially have my own Mode 3 squawk, it took a minute for approach to understand which aircraft had the emergency. They wanted me to stay in formation with my flight lead, but we wanted the flight to separate, so I could focus on my emergency.

I explained that I was an emergency aircraft and would be landing on runway 26. They could divert all necessary traffic, as this would result in a head-on pass with departing aircraft from KABQ. Eventually, approach switched me to a different approach frequency, and that controller seemed to have a much firmer grasp on what was happening. I was cleared for the visual straight-in for runway 26.

My flight lead flew high cover and periodically checked my status. Somewhere between 15 to 20 miles out, he asked me how I was doing. I had my fuel page out on the left DDI. Tank 1 showed 900 pounds, tank 2 had 1,200 pounds, tank 3 had 100 pounds and tank 4 had 60 pounds. I was losing fuel at a high rate. (We later calculated it was about 600 pounds per minute, which is nearly what you get with the fuel dumps on.)

I replied, "I'm not sure if I'm going to make it."

That is when things became surreal. In a calm voice, my flight lead said, "OK, the area isn't populated … just pick a place to point the jet and do what you have to do."

I couldn't believe that I was actually thinking about having to get out of the jet. We brief to it and talk about it, but I always imagined that if I ever had to eject, it would be a time-critical issue, and I wouldn't have time to think about it. But, there I was, checking and rechecking to make sure my seat was armed and the handle was easily accessible. I found a large, unpopulated area to point the jet if it came to that.

Based upon what I saw, I figured the leak was coming from the right engine. Tank 3 is the feed tank for the right motor, and that was apparently the source. The procedure for Fuselage Fuel Leak includes the following steps:

Afterburners – DESELECT

Analyze Indications:

- L/R BOOST LO caution
- L/R AMAD caution
- FEED tank fuel quantities
- Engine Instruments

FIRE light (suspect engine) – PUSH

A caution also states that pressing the good engine fire light may result in flameout of both engines.

The consensus was that the right engine was the culprit and that I probably could stop the leak by pressing the right fire light. However, I'd then have to emergency-extend the gear, and once they were down, I couldn't retract them. Without the right engine and the hyd 2A system, I also would not have normal braking or anti-skid. With more than two miles of runway, I shouldn't have an issue getting the jet to stop. If I could salvage enough gas, I could even take it around for the short-field arresting gear on runway 08. But, to be honest, my bucket was full with flying the jet, navigating to the field and monitoring my diminishing fuel quantities (not to mention a less-than-helpful controller). I felt that adding variables to an already tense equation wasn't the right answer. I decided to keep the right throttle at idle to minimize fuel flow to the motor.

I was now inside 10 miles and picking a new place to point the jet if I lost it on short final. I was feeling better about the situation. I continued an idle descent, passing over a small mountain range east of the airfield. The towering cumulus had parted just enough to give me a clear shot at the runway.

My plan was to keep up my gear as long as possible

to save gas. At five miles, this is where my big "other" occurred. Approach had switched me to tower, but between monitoring my fuel and keeping my flight lead updated to my status, I had missed that radio transmission. In my mind I had to land now; I didn't have the gas to go around.

At about 30 seconds to touchdown, I selected half flaps and dropped the gear as I passed through 250 knots. I knew I would make it, so my main focus was to make a normal landing. It would be a shame to make it all that way and then do something bone-headed with a normal hydraulic system. I extended my speed brake to get close to on-speed.

After the jet touched down and was coming to a stop, all I could think was, "I can't believe that happened." I felt an overwhelming sense of relief. That feeling, however, was very short-lived and was quickly replaced with the thought of, "Oh God, please don't let it be something I did."

Taxiing off the runway, I still had the fuel page on my left DDI. Tank 1 showed zero, tank 2 showed 960 pounds, tanks 3 and 4 also read zero. Minimum fuel on deck per SOP is 2,000 pounds, and anything below 1,500 pounds is an emergency.

The Air Force ramp was nearby, so I opted to go ahead and taxi to park. I also let the ground controller know that I might need a tow if I flamed out. While taxiing clear of the runway to parking, I got intermittent R BOOST LO cautions. Once parked, I hit the fire lights, shut down the motors and secured the jet. I still wasn't completely sure what had happened. After I got out of the jet, it all became very clear. I saw an impressive amount of fuel that had already puddled under the right motor, and a two-foot-wide trail of fuel that traced the path from the runway to my parking spot.

What had caused the leak? The problem was traced to the line that provides fuel pressure to move the inlet guide vanes on the right engine. It is a one-inch diameter, rubber and steel braided hose that had failed between the rubber hose and the metal connector. The high pressure combined with the break in a relatively small hose led to a fuel loss exceeding 1.5 gallons per second.

I got the jet on deck and was awarded two nights in the beautiful city of Albuquerque. I also was left with a lot of good learning points. I'd had the option to shut down the motor per the NATOPS procedure. If I had been a little farther away, that would have been the only way to get the jet on deck. I was in a part of the country where suitable airfields are few and far between. Shutting down a motor may be your only option if you find yourself a considerable distance from a good piece of concrete.

The Hornet flies just fine on one engine. Always know which airfields along your route have arresting gear. Squawking 7700 right away might also have alleviated some of the confusion with the first approach controller. My flight lead did a great job being calm, which helped to keep me calm. I was able to focus on flying my jet, navigate to the field and communicate. ■

LT. CHAD FORTIN FLIES WITH VFA-131.

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Bad Waves

BY LCDR. CHRISTOPHER HAYTER

"Hornet rep, 405, I broke off my refueling probe."

Although I had more than 1,900 hours as a Hornet pilot, I managed to turn a routine day close-air-support (CAS) hop with a pinky night trap into an unforgettable and costly nightmare. After getting the jet on deck, I asked myself, "What went wrong?"

Here's the story. It was the second week of deployment. We'd been on a lean flying schedule for the previous two months, and we didn't get to fly during the TransLant. On our first non-CQ fly day of cruise, I had a compound fuel-transfer malfunction. As a result, I had aerial refueled from air wing Super Hornets twice at night. Each time I'd tanked, it had been just like riding a bike, no problems.

Fast forward two days. The man-up was uneventful, but I got stuck behind cat 1 for a while, waiting anxiously to launch. This is significant because my scheduled tanker was a yo-yo Rhino, who would be landing just minutes after giving away his mission gas to the scheduled receivers. This meant that the tanker pilot had a very tight timeline until he had to be back on deck.

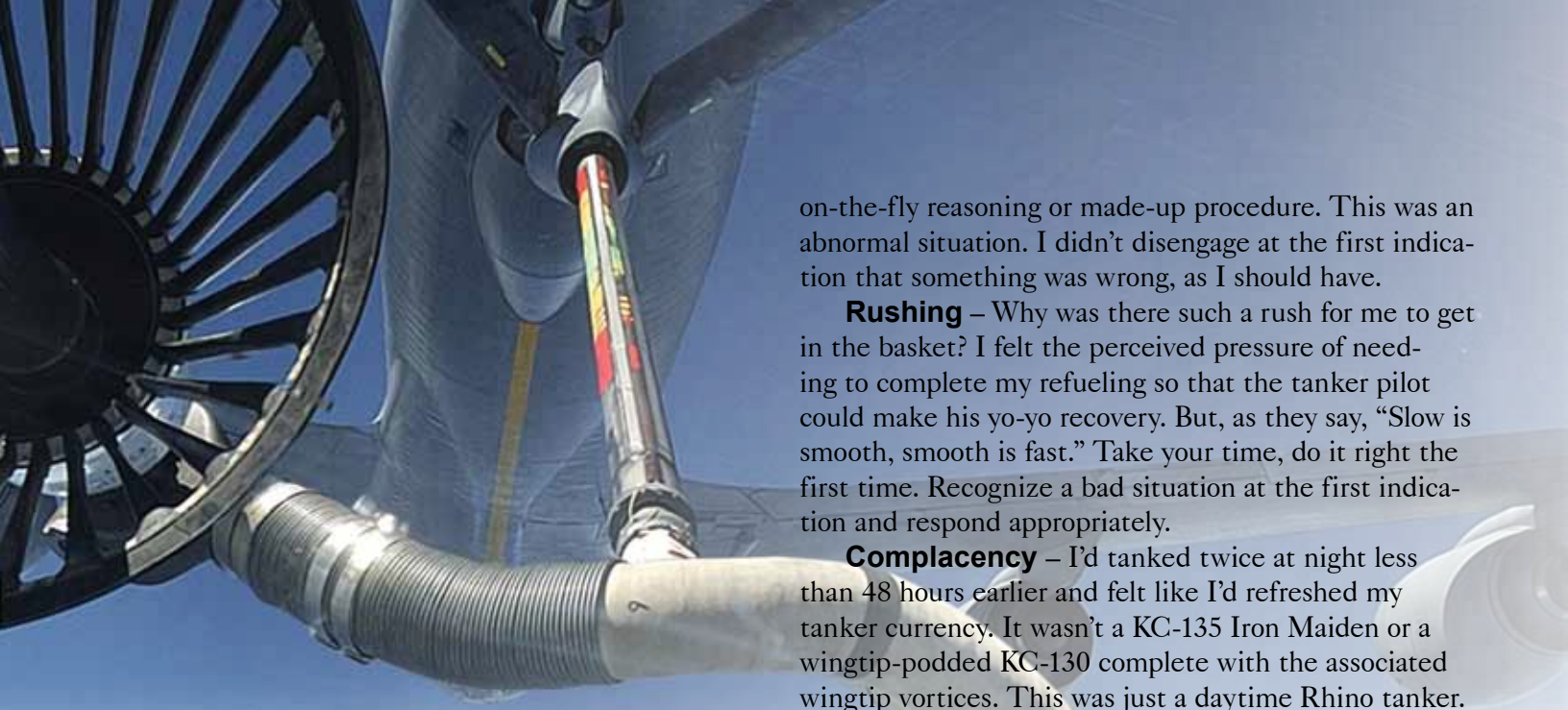
"405, status?" I heard while still waiting on deck.

My wingman and tanker already were overhead at Angels 7. Finally, after a Case 1 launch, I picked my way through a scattered layer and reached 7,000 feet to find my tanker. After the rendezvous, the tanker pilot said he was beginning a descent to the initial for recovery. The basket was extended, impeller turning, and he said I'd be cleared to contact upon arrival. From the cruise position on the tanker's port wing, I extended my refueling probe, and in one continuous move, slid straight through a sloppy precontact position and right into the basket.

I had only two to three knots of closure, but at contact the hose immediately formed a sine wave. I watched the wave go up to the tanker and back to the probe two times. Not liking the look of it, I cracked off a little power and tried to increase the nose-to-tail separation between my jet and the tanker. I wanted to reduce the magnitude of the wave, hoping this response would allow some slack in the hose to be retracted into the aerial-refueling-system (ARS) pod. After the second iteration of the sine wave traveling between the tanker and my refueling probe, the entire refueling probe snapped off.

My wingman said that he saw my probe travel up and over my starboard wing. Once clear of the tanker, we got the squadron CATCC rep and the ship involved. We did a visual inspection and an AOA-airspeed cross-check before recovering that cycle.

I reviewed both my decision-making and piloting



skills, along with information provided by the aviation mishap board (AMB). I distilled the following lessons learned:

Habit Pattern – Before this flight I had always gone to a solid precontact position before commencing my approach to the basket, but I didn't that day. I slid straight from the port observation right through precontact, up and into the basket, all in one fell swoop. What effect this had on the pod I don't know. However, when asked if I'd seen the ARS pod's amber light, I had to admit that I hadn't looked specifically for it. I was so focused on controlling the relative motion and making clean contact between the probe and the basket on the first try that I didn't see the amber light indicating the ARS pod was ready for me to engage.

Emergency Disengagement – NATOPS states, "Emergency disengagement may be required if difficulties occur in either the tanker or the receiver aircraft." The emergency disengagement procedure is: 1) THROTTLES – Idle. 2) SPEEDBRAKE switch – AFT. We've all heard about the fabled sine wave or an unresponsive take-up reel breaking off refueling probes.

I don't know why I failed to execute the emergency disengagement procedure after I saw the sine wave. I think that I was overly confident, thinking that by simply reducing power, I would straighten the hose and solve the problem. Instead of selecting idle power and extending the speed brake, I pulled off a little power, thinking, "I can hack it. If I just increase my nose-to-tail separation a bit, the pod and take-up reel should respond appropriately."

There was no basis anywhere in my training for this on-the-fly reasoning or made-up procedure. This was an abnormal situation. I didn't disengage at the first indication that something was wrong, as I should have.

Rushing – Why was there such a rush for me to get in the basket? I felt the perceived pressure of needing to complete my refueling so that the tanker pilot could make his yo-yo recovery. But, as they say, "Slow is smooth, smooth is fast." Take your time, do it right the first time. Recognize a bad situation at the first indication and respond appropriately.

Complacency – I'd tanked twice at night less than 48 hours earlier and felt like I'd refreshed my tanker currency. It wasn't a KC-135 Iron Maiden or a wingtip-podded KC-130 complete with the associated wingtip vortices. This was just a daytime Rhino tanker. I wasn't thinking through the possibility of an unresponsive take-up reel or how I would respond.

A few days later, an aviation-mishap-board (AMB) member spoke with me regarding additional contributing factors.

Tanker Pilot Considerations – The ARS pod has a limitation in NATOPS regarding the reference-pressure airspeed. When the hose is extended, the ARS pod sets a reference pressure based on the airspeed at which the hose was extended. The pressure should be reset if the airspeed changes more than 10 knots. When the tanker descended toward the initial while I got in the basket, the pilot inadvertently accelerated more than 10 knots. This magnitude of change in reference pressure caused the take-up reel to become unresponsive.

Regardless of the ARS hose-reel issue discussed above, an abnormal situation such as an unresponsive take-up reel doesn't have to be unsafe or dangerous. If I had disengaged at the first indication of an abnormal take-up-reel response, I probably would have averted the resulting damage. The tanker pilot would have reset the reference-pressure airspeed, and I could have refueled without further incident.

The in-flight refueling probe, a three-foot long, 15-pound chunk of metal was ripped from my jet. It didn't go down the engine intake. Although it grazed my vertical stab, it didn't smash a movable flight-control surface or crash through my windscreen.

We are paid for our judgment. When faced with the abnormal, we need to make sound decisions. We rely on training to bring back our aircraft with all its parts intact and ready to accomplish our nation's business. ■

LCDR. HAYTER FLIES WITH VFA-87.

WHEN BAD GAS LOOKS LIKE GOOD GAS

BY LCDR. HAMISH KIRKLAND

It was one of those awesome, but rare, good deals: I was tasked to fly a full crew on a P-3C Orion from our shore-based fleet-replacement squadron (FRS) in Jacksonville, Fla., to Royal Air Force Base Fairford in southwest England. It would be a welcome respite from the FRS daily grind and great training for our students.

The trip out was single-leg direct to RAF Fairford. We had a healthy tailwind, and the flight was relatively uneventful. After four fantastic days of interacting with military aircrews from a dozen nations, it was time to go home.

As expected, the predicted headwinds to Jacksonville made a direct flight ill-advised. We planned and filed our return trip through Canadian Forces Base Greenwood (CYZX) in Nova Scotia, Canada. We again had an uneventful trip across the Atlantic. Greenwood was a quick turnaround for us: fuel, food, and updated weather for our leg home. Plus, this was one of the home bases of the Canadian P-3 variant, the CP-140 Aurora, and so it was well-equipped to host us.

As the flight engineers waited on the fuel truck, I stopped by base ops to look at the weather. As I walked back to the aircraft, the fuel truck pulled up. The flight engineers exchanged words with the driver and hooked up the hoses. Onboard the aircraft, I noticed my copilot (another FRS instructor pilot) paging through the servicing chapter of NATOPS. She was curious whether the Canadians used standard US military fuels for their CP-140s, as she knew that some NATO countries used different versions of JP fuel.

Peering out of the galley window, I initially noted the large "JP-8" emblazoned across the side of the truck. Good stuff. I know about JP-8, and I know it's good for P-3s. About five seconds later, it struck me that the characters "F-37" appeared (in much smaller type) below the JP-8. I glanced down at the open NATOPS on the table before me and my heart sank. I read out loud, "JP-8, NATO Code F-37, Emergency Fuel — A fuel that may be used for a minimum time when a primary fuel is not available and an urgent need exists (such as hurricane evacuation or military necessity)."

I raced down the ladder and over to the flight engineers, telling them to immediately stop fueling. I then explained to the slightly bemused truck driver that, while our aircraft does accept JP-8, only the F-34 variant is an acceptable primary fuel. Twenty minutes later a new fuel truck arrived. We were back in business, filling our tanks with the right gas and diluting the negligible amount of F-37.

With full stomachs and a fresh bag of gas, we left Canada and headed for Jacksonville. Safely on deck, the flight engineers and I profusely thanked the 2P for her vigilance and strong headwork in preventing what could have been a serious error.

Here's what the P-3C NATOPS Manual says:

CAUTION: NAVAIR 00-80T-109 (Aircraft Refueling NATOPS Manual) contains special procedures that must be followed when it becomes necessary to defuel aircraft that have been fueled with the emergency fuel JP-8 +100 (F-37). Since there is no viable field test that can detect the presence of JP-8 +100 (F-37), pilots/aircrew and aircraft maintenance personnel shall ensure that fuels personnel are informed of aircraft that have been fueled with the emergency fuel JP-8 +100 (F-37).

COMMENTS: No USN/USMC aircraft engines require the use of JP-8 +100 (F-37). USN/USMC aircraft are not authorized to use JP-8 +100 (F-37) except in emergency situations.

When operating outside of the United States, even with nations that fly the same aircraft (or variants), make sure the fuel you pump into your tanks is what you think it is. JP-8 is JP-8, except when it isn't. ■

LCDR. KIRKLAND FLIES WITH VP-30.

The Scare Begins

BY LT. MARC PUTMAN AND LT. NOA FUNK

Our E-6B routine nine-hour flight was going smoothly until the last event of the night mission.

We were scheduled to refuel about five hours into our flight on track 636 off the coast of Norfolk. The rendezvous would be with a KC-10 at FL210. They told us of a cloud layer at FL210, and moved the rendezvous up 1,000 feet to FL220 to get above the layer. The join-up with the tanker went smoothly; it was a nice night for air refueling.

Fifteen minutes before completion, another tanker (a KC-135) checked in with Giant Killer (VACAPES). It would be next to refuel with our tanker. The KC-10 told the KC-135 they would coordinate a rendezvous after refueling with us. The KC-10 was scheduled as the receiver in the next refueling evolution.

With the refueling complete, we descended to the bottom of the air-refueling block, FL210, and stayed in contact with the tanker until MARSA (military assumes responsibility for separation of aircraft) was cancelled. After the post air-refueling checklist was concluded, the seatbelt sign was extinguished and our Mercury crew resumed their duties. With clearance established with Giant Killer and MARSA terminated, we proceeded on a westbound heading at FL210.

The KC-10 coordinated a rendezvous with the KC-135 and climbed to FL230. All three jets were approximately on a heading of 280 degrees toward Norfolk. We entered a thick cloud layer and entered IMC. We also encountered moderate icing, with about a quarter of our windscreen getting rapidly covered with ice. We told Giant Killer of the icing and requested a climb as soon as possible, including the need for a new heading to remain clear of track 636 and the two tankers. We increased speed to 280 knots to limit icing exposure and to prepare for our climb. Giant Killer responded with a new assigned heading of 230. Once heading 230, Giant Killer cleared us to FL260. We initiated an immediate climb at 2,300-feet per minute.

Unbeknown to us, shortly after we initiated our climb, the two tankers began a left hand turn within the air-refueling anchor to aid in their rendezvous. Fifty-five seconds after beginning our climb, while passing FL230, Giant Killer radioed us to stop our climb at FL220. I quickly reported that we already had passed FL220. Giant Killer requested a level-off at our current altitude, now FL232. At that moment, we received a resolution advisory (RA) from our terminal-collision-avoidance system (TCAS) to "climb." We quickly responded by pushing the throttles up and climbing in adherence to the RA. The climb call was followed shortly by a TCAS, "monitor vertical speed" call. We were still in IMC. I immediately told Giant Killer that we'd heard the RA and that we were climbing.

After receiving the TCAS "clear of contact" call, we asked for an assigned altitude and were given FL300. Still observing the tanker frequency, I told the tankers what had happened and requested feedback. They were monitoring Giant Killer and had heard all the radio transmissions. The tanker formation thanked us for adhering to the RA, because they were in the process of rendezvousing.

Poor timing nearly caused a mid-air collision on that night. The tanker's left hand turn and our clearance to climb, compounded with IMC, resulted in a situation in which two aircraft almost inhabited the same piece of sky at the same time.

Being monitored by ATC and separated by radar does have flaws. Being in close vicinity with multiple aircraft, regardless of atmospherics, demands attention to detail and clear communications. ■

LT. PUTMAN AND LT. FUNK FLY WITH VQ-4.

Down To the Wire

BY LT. JOHN C. HERNANDEZ

It was our first operational mission in PACOM and our crew, having never operated in this theater, was in high spirits. The weather on-station was not ideal but still workable for our visual flight rules (VFR), due-regard operations. We transited to the South China Sea and chopped VFR due regard. We quickly became occupied dodging clouds trying to find a workable area.

After orbiting for two hours during a tactically task-saturated portion of the mission, our starboard observer noticed that the high-frequency (HF-2) wire had detached and wrapped around the horizontal stabilizer. The aircraft commander (AC) was notified and started to assess the damage. Power was secured to HF-2, and the NATOPS manuals were consulted. The tactical aspect of the mission was put on hold, and all attention was focused toward the safety of the aircraft and aircrew.

After making sure we had no controllability concerns with the current clean configuration, the flight station decided to abort the mission in accordance with NATOPS. We would return to homeplate, Kadena Air Base, the nearest suitable field. Observers were posted, and we climbed to FL250 for our return transit.

The flight-station discussed when to configure for our controllability check and where this would take place. After checking NATOPS, it was decided to conduct this check 30 miles from the field and 6,000 feet over water to make sure any debris would not fall over land.

Once established in holding, we set approach flaps and lowered the landing gear. We tapered airspeed to the predetermined approach-flap landing speed of 138 knots. As we slowed through 140 knots, we felt a light buffet. The HF-2 wire had lodged itself between the starboard horizontal-stabilizer trim tab and force link tab, a control surface unique to the Orion airframe and located on the inboard trailing edge of each elevator. It's designed to increase the longitudinal stability of the aircraft. With 12,100 feet of runway available, a favorable headwind and no significant weather in the area, the AC decided to fly an approach-flap landing. The landing ground roll distance was calculated to be 4,700 feet.

The AC briefed that on landing rollout, the No. 2 and 3 power levers would not be retarded beyond the GROUND START position, and reversal would be accomplished using the No. 1 and 4 power levers. The copilot was briefed to call speed below 135 knots on the landing rollout. During approach the copilot told tower of the detached HF-2 wire and the possibility of leaving a debris trail on the runway.

After landing, we taxied clear of the active. Tower told us to hold position pending a runway and aircraft FOD inspection. No FOD was found, and we were cleared to taxi. Postflight inspection revealed no additional damage to our aircraft.

This experience reinforced the importance of always relying upon established NATOPS procedures. We worked together as a crew to make sure that what began as a relatively benign malfunction didn't materialize into something more significant. ■

LT. HERNANDEZ FLIES WITH VQ-1.

I Felt the Plane Shake

BY ENS. ANTHONY WICH

I had just finished my C4390 check ride and was excited about my first solo in the T-34C. After getting a bite to eat, I returned to the squadron for my brief with the ODO. I grabbed my gear and read the maintenance book. After the preflight, I strapped into the front seat and went through the checklists. I was nervous, frightened and excited; you name the emotion and I had it. I was ready for my first solo.

Things seemed to be going well. After completing four touch-and-goes, I departed course rules southbound to the beach line. Once at 500 feet off Navy Corpus, I contacted departure and requested course rules to a south high working area.

Soon after talking to departure, I was approaching the high bridge to my right. I noticed what appeared to be a flock of pelicans directly ahead and 150 feet above me. Knowing the hazards of a bird strike and the damage a flock of pelicans could inflict, I prepared to avoid them. A moment later I saw the pelicans diving toward the water. Without hesitation, and thanks to my briefs with my on-wing and the XO on my check ride, I quickly moved my power control lever (PCL) forward to the firewall, and began an aggressive climb away from the birds. I maneuvered up and to the right as the birds dove down and to the left. I heard a loud bang and felt the plane shake. At least one of the pelicans had struck the plane. I focused on maintaining control of the aircraft.

After stabilizing the aircraft, I assessed the situation and saw that the right engine cowling was significantly

damaged. One of the birds must have hit my prop, because blood covered my entire windshield. It was like driving on a bug-infested Florida road with no washer fluid.

Recalling my emergency procedures, I quickly considered the possibility that one or more of the pelicans may have been sucked into my intake. I scanned my engine instruments for any indications of impending engine failure; they all read within limits. I immediately did an abbreviated slow-flight check at 1,000 feet. I decided to forgo the climb to above 5,000 feet, because of my close proximity to Point Shamrock and Navy Corpus. Another consideration was that the bird may have hit the prop and caused engine damage. I saw no damage to the control surfaces and no indication the bird had done anything to the engine. However, that could change. I wanted to get on deck as quickly as possible.

After regaining my composure, I contacted Corpus approach. I told them I had experienced a severe bird strike and that my aircraft integrity had been compromised. I requested an immediate return to Navy Corpus. After obtaining clearance, I turned toward Point Shamrock and switched to Navy Corpus tower. I told them of the bird strike and requested a straight-in approach, as outlined in the emergency procedure for "In-flight Damaged Aircraft." Tower quickly responded and approved my straight-in. Inbound to Navy, I continued to closely monitor my engine instruments for engine failure indications in case I needed to conduct a precautionary-emergency landing.

I made an uneventful straight-in approach for a full-stop landing. After taxiing to my line and shutting down, I was amazed at the damage the bird(s) had inflicted. I am very thankful for all of the emergency-procedures training provided by all of my instructors. Their training left no room for question or doubt. ■

ENS. WICH FLIES WITH VT-27.

Welcome to the Varsity

I was the copilot, sitting rear seat in an AH-1W Super Cobra, when I nearly lost my life and destroyed an aircraft because I was complacent.

BY CAPT. ANTHONY CASEY, USMC

It was just another summer day out in the sunny southern California desert. We were at Marine Corps Air Ground Combat Center (MCAGCC) Twentynine Palms in support of Enhanced Mojave Viper (EMV) 7-11. I showed up to the ready room at 0645 to prepare for a close-air-support (CAS) time-on-station (TOS) and my annual NATOPS check. I was the Dash 2 copilot for our CAS TOS in the Quackenbush range, also known as "the Quack."

After our uneventful (other than my great rocket shots) TOS in the Quack, we landed at the arm/de-arm area. The section was dissolved so we could conduct our next sortie: my NATOPS check. The instructor and I departed the arm/de-arm area for the hot fuel pits. During the taxi, we discussed weight concerns and how much fuel we would take on board. We opted not to take a full bag of gas because of the aircraft weight, environmental conditions and anticipation of doing practice autorotations. I stopped the refueling at 1,500 pounds, which gave us a gross weight of 13,577 pounds (about 1,200 pounds under our NATOPS max of 14,750).

Departing the pits, I started my NATOPS check at the expeditionary airfield (EAF) with basic familiarization (FAM) maneuvers. I then did simulated emergencies at the local auxiliary landing field (ALF). After these maneuvers and while on deck, I transferred the controls to the instructor. At the time, I didn't know it would be the last time I would touch the controls. After a couple of quick stop maneuvers, the instructor offered to demonstrate the first autorotation (auto) during high and hot conditions.

We departed the ALF and headed back to the EAF with less than 1,000 pounds of fuel remaining. En route, we discussed the buildup approach for our autos. We planned to enter and recover at higher-than-normal altitudes to provide a buffer because of the high and hot environmental conditions. We entered a 90-degree auto from the left base of runway 28 at 900 feet, 80 knots, and with the VSI at 100 fpm rate of descent.

During the manuever, Nr (rotor speed) built rapidly. It initially required a significant collective input to keep Nr within limits. I had never seen Nr build that fast while making a left hand auto. We entered the flare at 120 feet (our radalt setting). Our Nr continued to rapidly build. To counter this rapid Nr buildup, the instructor had to pump the collective to prevent the rotor head from overspeeding.

Through the flare the instructor called, "Throttles, throttles, throttles, full open." He rocked the aircraft to skids-level and arrested our rate of descent. We recovered at about four to five feet.

The instructor said, "These are varsity autos and pulling collective in the flare is not ideal, but it was necessary to keep the head from overspeeding. It's also dangerous if you don't get the collective back down."

He decided to attempt a straight-in auto to evaluate aircraft performance during a more benign maneuver. We climbed to our entry parameters of 560 to 580 feet, 80 knots and with the VSI at zero. Almost immediately upon maneuver entry, the rotor-low light came on, along with the audio message and tone; Nr was 96 percent. Our instructor said we would get them back in the flare.

We entered the flare again at 120 feet, and this time there was a little collective input. I didn't think anything of it because the same technique was required in the previous flare to maintain Nr limits. However, on this auto the turns did not build as expected. The instructor did not call, "Throttles, throttles, throttles," but I felt him rolling up both engines. Because the instructor was making the appropriate control inputs, I did not feel the need to make any control inputs or voice concern.

The aircraft buffeted significantly. I looked down at Nr and it was in the low 80s, well below our power-on limitations. The instructor rocked the aircraft over to skids-level, and we hit the ground. We slid for about 15 yards before we got airborne. We hit the ground again,

and the aircraft yawed 50 degrees to the right, but it felt like 90 degrees. We began to skip sideways down the runway. I thought my face was going to hit the ground. The aircraft fishtailed back to the left as the collective was lowered to the full down position and finally came to a stop. The aircraft skids were now on the edge of the runway, and the tailboom was hanging over the dirt.

The instructor immediately got out to check for damage. While he was outside, I noticed a significant split in the engine torque needles. As the instructor inspected the aircraft, tower asked us if we could back taxi down the runway to facilitate landing a C-12 in 10 minutes.

I thought, "You have got to be kidding me," but simply replied, "Unable." I shut down the aircraft and got out. The instructor then called our commanding officer.

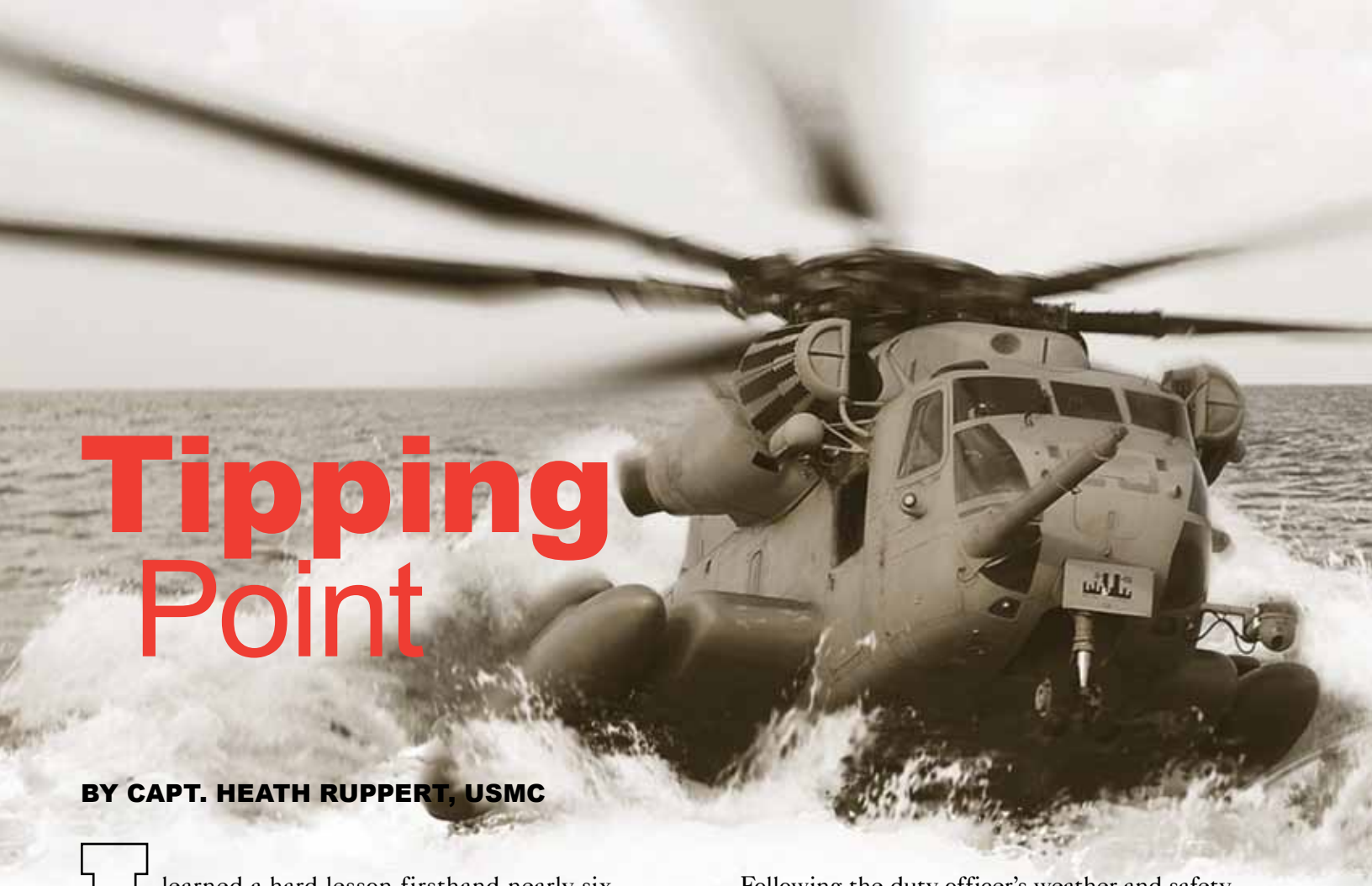
The instructor and I had briefed in-depth how we would execute our autos on the ground and in the cockpit. Despite discussing that we would enter and recover high on our autos, we did not fly these maneuvers as briefed. We recovered low on our first autorotation, and I didn't say anything. I was more focused on backing-up the instructor on procedures. Because of the conditions, the aircraft did not respond as I expected. I should have spoken up. I could have assisted rolling up the throttles. I could have said something about the collective being slightly up. I could have called, "Knock it off." If I had acted on any one of these thoughts, I could have prevented this hard landing, but instead, I was complacent. I just sat there watching the event take place right in front of my face. I almost got us killed.

Because of the hard landing, the aircraft required maintenance on the landing gear, the working rivets on the tailboom and vertical fin, and the hard points for the landing gear. Hard landings require the transmission, the combining gear box, and main rotor hub to be replaced.

The instructor's workload was high during the autos, but I did not recognize this even though he voiced his concern with the conditions by calling the autos "varsity." I was extremely confident in his abilities. He had been an instructor pilot in the fleet replacement squadron (FRS) and had executed thousands of autos. He had taught me how to fly the Super Cobra at the FRS and my current squadron. I knew he was working very hard to maintain Nr within limits, but I didn't take any action to physically back him up. Things may have turned out differently if I had picked up the crew communication when he was task-saturated by calling out altitudes and throttles. I also could have physically backed him up with throttle manipulation.

I hope that my story can help you prevent complacency in your cockpit. Anyone you fly with, despite experience and qualifications, can make a mistake that will place the crew in a precarious situation. Take it from me — the only routine flight that you will ever have is the one that you don't get to write about. ■

CAPT. CASEY FLIES WITH HMLA-469.



Tipping Point

BY CAPT. HEATH RUPPERT, USMC

I learned a hard lesson firsthand nearly six years ago, and the most defining moment of my life continues to run through my mind on a daily basis.

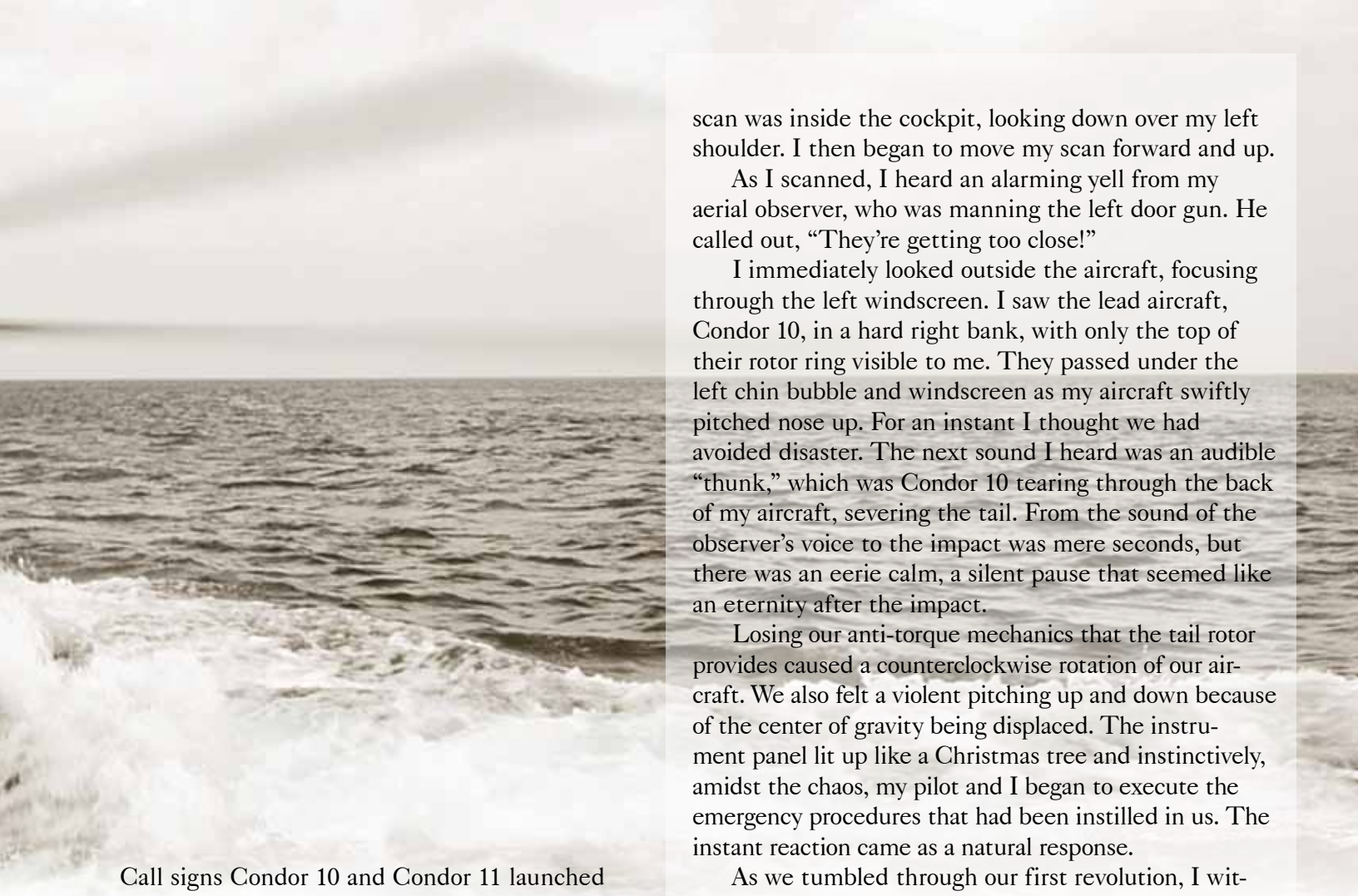
I was a new CH-53E pilot on my highly anticipated first deployment, and my detachment was four months into a six-month deployment. It was a beautiful day, 16 February 2006, in Djibouti, Africa. We enjoyed near-perfect flying conditions and a low enemy threat. My aircrew knew each other's tendencies and our AOR like clockwork. We'd been conducting similar missions throughout the deployment, our confidence kept building daily, and we were anxious for any mission thrown our way. Conditions were set for an uneventful section flight — and for complacency to set in.

The day began just as every other day. The aircrews woke up and ate breakfast. The pilots headed to the ready room for a section flight brief, while the crew chiefs and maintenance Marines prepared the Super Stallions. The ready-room brief was detailed, with contingencies and emergencies addressed. The two copilots (I was the Dash-2 copilot) diligently prepared the night before; we were ready to brief and fly. All coordination was complete. With the section leader's approval of our plan, we had passed our first test of the day.

Following the duty officer's weather and safety brief, the two pairs of pilots went separate ways for individual aircraft briefs. My aircraft commander and I went through the standard NATOPS brief, as we all had done every prior mission. We also discussed general aircraft and aviation topics, continuing my preparation for aircraft commander.

I made my way to the flight line and noticed that my counterpart already was preflighting his aircraft. I gave him a casual wave. I did my preflight, briefed my crew chief, aerial observers, and my Air Force SatCom operator on the mission. All seemed normal when compared to the previous four months. However, we had reached the tipping point when the breakdown of fundamentals, and of ORM and CRM principles, caught up with us.

As my aircraft commander entered our aircraft, she informed the crew that our mission had changed. We were to follow the lead aircraft on one of our established routes and practice dusty landings. We had a momentary concern about the mission change because of the lack of coordination, but nothing that would keep us from our launch time. It just seemed to be an easy day: no aerial refueling, no external lifts and no extra passengers.



Call signs Condor 10 and Condor 11 launched from Camp Lemonier, south of the Djibouti-Ambouli International Airport. When feet wet, we turned north across the Gulf of Tadjoura. We crossed the gulf, went feet dry and continued to follow the Djiboutian coastline north. The calm blue waters of the Gulf of Aden were to our right, and the mountainous desert landscape was to our left.

As the aircraft crossed the desert there was little conversation between Condors 10 and 11, eventually becoming nonexistent. To keep ourselves occupied, my crew entered a low-stress discussion about emergency procedures, aircraft systems and limitations. We then conducted section landings in the vicinity of Fagal, a small peninsula which juts into the Gulf of Aden across from southwestern Yemen.

About 45 minutes into the flight, Condor 10 made a right hand turn toward the beach and Dash 2. Condor 11, followed in combat cruise position to leads right hand side at 300 foot AGL and 150 knots. As we headed out to sea, we believed we were entering a standard pattern, left crosswind, working counter-clockwise toward a westerly downwind and back over land.

As the nonflying pilot in the right seat, I started to stow my maps and execute the landing checklist. My scan was inside the cockpit, looking down over my left shoulder. I then began to move my scan forward and up.

As I scanned, I heard an alarming yell from my aerial observer, who was manning the left door gun. He called out, "They're getting too close!"

I immediately looked outside the aircraft, focusing through the left windscreen. I saw the lead aircraft, Condor 10, in a hard right bank, with only the top of their rotor ring visible to me. They passed under the left chin bubble and windscreen as my aircraft swiftly pitched nose up. For an instant I thought we had avoided disaster. The next sound I heard was an audible "thunk," which was Condor 10 tearing through the back of my aircraft, severing the tail. From the sound of the observer's voice to the impact was mere seconds, but there was an eerie calm, a silent pause that seemed like an eternity after the impact.

Losing our anti-torque mechanics that the tail rotor provides caused a counterclockwise rotation of our aircraft. We also felt a violent pitching up and down because of the center of gravity being displaced. The instrument panel lit up like a Christmas tree and instinctively, amidst the chaos, my pilot and I began to execute the emergency procedures that had been instilled in us. The instant reaction came as a natural response.

As we tumbled through our first revolution, I witnessed what looked like a fireball falling from the sky — it was Condor 10. Autorotation and loss of tail-rotor procedures seemed useless as we had no aerodynamic control from the main rotor to assist. Presumably, we lost much of our main-rotor-blades mass during impact, and our rate of descent coupled with the lack of controllability was evident. We continued to rotate, pitch and fall as we became engulfed in flames. Visibility was gone. All I could see through my windscreen were flames and smoke.

Continuing to fall, I called out altitudes, "200, 100, 50 feet, here it comes."

I didn't know if my transmissions were being sent or if I was speaking to myself. Praying as we fell, a slideshow of images of my life flashed through my mind; I knew my time on earth was near.

We violently hit the water. The intense magnitude of the impact eliminated any chance of maintaining a reference point, as the Gulf of Aden swallowed us up. The ocean rushed in the cockpit, fully submerging me before I could take a deep breath. By design, the cockpit seat absorbed much of the impact to my

body. As we sank and rolled, our helo-dunker training instinctively kicked in. I reach for my HABD bottle, but it was secured beneath my harness. I couldn't get oxygen to my mouth.

I reach for my five-point harness release, freed myself from the seat, and tried to locate an egress route. All I could see were the millions of bubbles rushing in front of my face as the salt water, fuel and other aircraft chemicals burned my eyes. Leaning my head back I caught a glimpse of sunlight peaking though the bubbles. I pushed off the deck and away from my seat, with my helmet still connected to the aircraft holding me inside. Unable to locate the helmet quick release, I pulled off my helmet and struggled toward the light through a jagged hole in the aircraft. Our depth was between 20 and 30 feet. As I stretched to reach the surface, I pleaded for air with each stroke. But, I kept my mouth closed, depriving my lungs of oxygen and the impending rush of sea water.

My head broke through the surface, and I gasped for my first breath. Bobbing with the motion of the waves, I faced shore. I was dazed, disoriented, and believed I was in a dream. I had some tunnel vision, but I couldn't hear, smell or feel my surroundings. My senses had not registered what just happened. Where was I? Why was I in the water? I thought I was flying. Then, I heard my name being yelled, and like a light switch, my perception came back. The instinctive execution of emergency procedures and survival mechanisms had taken over my cognitive process during the mishap, but now reality had set in. The terror of what had occurred fully hit me. My anxiety levels skyrocketed.

I looked around but didn't see anyone. I was sure that I was the last one out of the helicopter; everyone else must be safe and waiting for me. The voice was my aircraft commander. Through the debris I swam toward her as she floated on a piece of our destroyed aircraft. The two of us, injured and bleeding, determined that we needed to get away from the crash site. After inflating our flotation devices, we dragged and pulled ourselves through the debris a few hundred yards to shore. The smell of burning metal and aircraft fluids permeated the air. We couldn't stay in the ocean soaking in fuel and hydraulic fluid as a burning sensation on my skin was noticeable.

No one else had survived the impact.

After pulling ourselves onto the jagged, rocky shore, our bodies felt the effects. My neck and back didn't want to bend, and I couldn't raise my arms above parallel to the ground. My left knee was torn open. I bled from my nose and mouth. I vomited blood, sea water and the chemicals that I ingested while making my way to shore. My aircraft commander was in a similar condition, plus she had a broken leg. We noticed the high-water line and somehow moved above it, hoping we didn't get stuck when the tide came in. We were immobile except for scraping and crawling attempts. We had to wait until rescued.

Hours passed with no communication. We didn't know if our radios worked or if anyone was listening. I crawled to higher ground for better reception with no success. We pulled our survival gear together, ready to remain in place for the night — physically exhausted, bodies stiff, and mentally drained as reality ran its course. We relied on each other to keep awake and alert, in hopes of preventing shock from setting in.

TO THE WEST, THE SUN WAS SETTING when I noticed what looked like men running over a ridge toward us with small arms, mostly AK-47 assault rifles. As we laid on the rocks, I used what seemed to be all of my remaining energy to pull my pistol and point it in the advancer's direction. Between the two of us we had only one weapon (hers was lost during the mishap). We maintained a calm and collected demeanor while anxiety and fear of what was to come ran through our minds. We were so close to Somalia and Yemen that images of "Black Hawk Down" ran through my thoughts. As the men came within an arms distance, I did not fire my weapon nor did they take an aggressive posture toward us. They knelt beside us trying to communicate, but the language barrier inhibited progress.

One man made radio calls to someone. This was disturbing because I didn't know his intent. They did not try to take my weapon, which led me to believe they meant us no harm. Two men picked my aircraft

Although it took almost six years to write about what happened that day, I truly believe that the need to share my experience with all aviators is my responsibility as a survivor. Those brave men and woman who were lost, as well as all of those who continue to serve in the air every day, deserve to have this story told.

commander up and begin to carry her, while another got me to my feet and dragged me along. Although I could not understand the language, the man spoke calmly and soothing. I kept my pistol close to my body. In agonizing pain we were moved between a quarter of a mile and half of a mile to a flat area that seemed suitable for a helicopter landing. The men laid us down and set a perimeter with their leader close by.

Now completely dark, I hear the low rumble of a CH-53E in the distance. My fingers were barely able to negotiate small tasks. I struggled to load and launch my first pencil flare since standing on a dock at NAS Pensacola during API. I continued to make calls on the radio, and then I finally received positive identification with one of our detachment aircraft. Despite my IR signal flashing, I continued to fire pencil flares until assured the aircraft had us in sight. As the CH-53E began to land I felt the rotor wash blowing as it kicked up the desert sand. They landed close. As we lay in the zone, familiar faces appeared by our side. We were loaded on stretchers and rushed to the waiting aircraft. Crew members searched the area for other survivors. They did not realize we had been on the ground for hours, and that we were alone with the Djiboutians. The aircraft lifted, taking us back to Camp Lemonier. Lying in the back of the CH-53E, I had my first sense of physical security of the day, but this would only be the first step in a long physical, mental and emotional recovery process.

I'd like you, the naval aviator, to identify the errors on that day in 2006. On the plus side, I hope the importance of all of the training we received before we ever launched an aircraft, our cockpit management and survival skills was apparent while reading this article. Each training set plays a critical role in the profession, and should never be overshadowed by complacency or preventable internal or external factors. ■

CAPT. RUPPERT IS WITH THE BASIC SCHOOL.

Mishap-Free Milestones

VMR Andrews	85,000 Hours	34 Years

Clara Ship

BY LT. GRANT JARVIS

My first, no kidding, "So, there I was" moment in the fleet was two nights ago, on my sixth night trap in my squadron, and only my second night trap underway during cyclic operations.

Take off at night, head out to a working area, complete some training, and return to the boat — all routine. We decided on the way back that we had enough time to stop overhead the carrier and practice night tanking off an FA-18.

In the EA-6B, you have to lower the pilot's seat all the way to the floor to look through the front canopy and see your refueling probe. I ran my seat all the way down and flipped the refueling switches required on my checklist. I saddled up behind the FA-18 and got a quick plug off his basket before our time ran out and we needed to return for recovery.

As I pulled away from the tanker, I pressed the seat-lift switch, but nothing happened. I tried again – nothing. My ECMO 1 tried pressing the switch, still nothing. We checked all our circuit breakers for anything that might keep the ejection seat from rising. We found nothing that would prohibit me from getting off the floor of the Prowler.

In any other aircraft, having your seat all the way on the floor may be an inconvenience for the pilot. In the

As I flew to the holding stack with my butt on the floor and my throttle and stick a few feet above me, it felt like I was riding a Harley Davidson with tricked out handlebars.

EA-6B, it's a big problem. To land the Prowler, the pilot has to run his seat all the way up and lean forward to look over the robust nose of the aircraft. In the landing configuration, we come in so cocked up that you'd think we sat in recliners.

We had a land divert that we could make on our current fuel state. We could even get more gas from the tanker to cushion our flight. As the new guy, I thought my crew and I would be spending a night off the boat in a luxurious suite on an Air Force base. I mean, come on, how can I land on an aircraft carrier if I couldn't see the aircraft carrier? We called our rep and updated him. He gave us some troubleshooting steps; none of them worked. Then we got instructions to enter marshal and recover the aircraft. The harsh reality set in that I would be recovering onboard USS George Washington (CVN 73), at night, without the luxury of seeing anything.

As I flew to the holding stack with my butt on the floor and my throttle and stick a few feet above me, it felt like I was riding a Harley Davidson with tricked out handlebars.

We flew our approach. Sweat and adrenaline pumping, the only thing for me to look at was the old-school EA-6B steam-gauge instruments in front of me. I watched our altitude tick down from 500 feet to 400 feet.

"You're at 3/4 of a mile, call the ball," we heard.

"Clara ship" [the pilot cannot see the ship]. We were at 200 feet, then 150 feet.

"Wave off, wave off, foul deck."

I went to full power and maintained my heading. I told ECMO 1 to make sure I didn't hit the tower as I put the landing gear up. We flew away. The aircraft in front of us had not cleared the landing area, and it was unsafe to land. We climbed to 1,200 feet, turned downwind and prepared to make a second pass. Going through my landing checklist, still shaking, we set up for another run.

"500, turn to final."

I put the landing gear back down, ran through my checks and lined up on our final approach bearing.

"500, turn to heading 300."

The controllers had messed up our timing yet again, and we were vectored for spacing.

"500, turn to 260 to intercept final bearing."

I did. We were now lined-up and making corrections to try a blind approach once again to the carrier.

"500, you are at 3/4 of a mile, call the ball."

My ECMO 1 replied, "Clara ship."

I kept frantically trying to look over the dash, but it was no use. There was no way for me to see anything in front of us while strapped into an ejection seat that was planted to the floor.

"Paddles contact, you're on glide slope."

The LSOs were now flying my aircraft. It is similar to driving 150 mph down the wrong side of the freeway, blindfolded, and having someone in a car ahead of you telling you when to turn to dodge oncoming traffic. I glanced at my altitude, 300 feet, 200 feet, 150 feet.

"You're on glide slope, little come left, little power, little right for line-up, little power."

A few last-minute shots of power for my comfort so as to not hit the back of the ship, and then, tick (there's the hook), pull (there's the arresting gear), crash, we trapped.

The crew erupted in cheers. I was shaking so hard I couldn't find my external switch to turn off my lights.

I got a call from Boss, "500, lights on deck."

I'm sure that was the Air Boss's way of saying great job and welcome back. As we taxied out of the landing area, my taxi directors positioned themselves so I could see them out of the side of the aircraft. I had just successfully landed the hardest jet to fly behind the boat in the fleet, all the way to touchdown, at night, without ever seeing the ship.

Here's my take-aways and lessons learned. Always expect to bring your aircraft back to the boat. If we had been diverted to a land base, I would have still had the same exact problem of not seeing the runway, only paddles would not have been there to help.

Even a small malfunction, such as a seat motor, can turn into a big complication. Our situation was not unlike a 0-0 weather approach. The difference being that in a 0-0 approach, you're looking outside, but there's nothing to see. In this instance, there was plenty to see outside, I just couldn't see it.

Trust paddles. Know that whether it be a single-engine approach, no flap/no slat, or a clara-ship pass, they will have a very conservative wave-off window. They will keep you off the back of the ship if you listen to them. ■

LT. JARVIS FLIES WITH VAQ-136.

HT-28

LIEUTENANT DEAN FARMER, a flight instructor with HT-28 at NAS Whiting Field, Fla., was flying a TH-57C day, instrument-navigation flight with student pilot Ltjg. Hesham Alageel, Royal Saudi Naval Forces (RSNF).

While at 5,000 feet above a cloud layer between Crestview and Mariana, Fla., the backseat observer notified Lt. Farmer of an unusual smell. About 15 seconds later, the crew heard a loud bang, and the cabin filled with white smoke. Lt. Farmer directed the crew to execute the NATOPS smoke-and-fume elimination emergency procedure. They contacted Cairns Approach to declare an emergency.

Lieutenant Farmer requested an immediate descent through the cloud layer and clearance to Tri-County Airport, eight miles away. They contacted approach control and reached visual meteorological conditions (VMC). They cleared the smoke from the cabin and landed.

A ruptured environmental-control system, high-pressure line had vented Freon and oil from the air-conditioner compressor into the cabin.

Left to right: Lt. Dean Farmer, Ltjg. Hesham Alageel, RSNF.

BRAVO Zulu

VT-2

LIEUTENANT JOHN LESTER is an instructor pilot with VT-2 at NAS Whiting Field, Fla. Just 10 seconds after takeoff for a T-34C reposition flight, Lt. Lester experienced degraded elevator control. The control stick only had about three inches of free movement before the elevator would move. He immediately notified air-traffic control and returned for a landing.

Maintenance personnel subsequently discovered the outboard gimbal-support assembly had begun to disconnect from the control stick, which required an inspection of the T-34C fleet.

THE MV-22B CREW OF GOPHER 26, deployed aboard the USS *Bataan* (LHD 5) with the 22d Marine Expeditionary Unit, consisted of Capt. Jonathan Brandt (TAC/PNF), Capt. Nathaniel Ross (CP/PF), Sgt. John Logan (CC), Sgt. Corey Lapotsky (CC) and Cpl. Donald Edmonston (AO). Flying in the Djibouti Range Complex, the crew had just completed a division, night systems, low-light-level confined-area landing; low-altitude tactics; and an air-to-air refueling training flight.

After the lead aircraft had detached for single-ship training, Gopher 26 took the remaining section back to the ship in the Gulf of Aden. The crew heard a loud bang from the left engine, felt a corresponding jolt and saw a flame engulf the forward portion of the left nacelle. The "Engine Failure" audio and visual warnings immediately followed

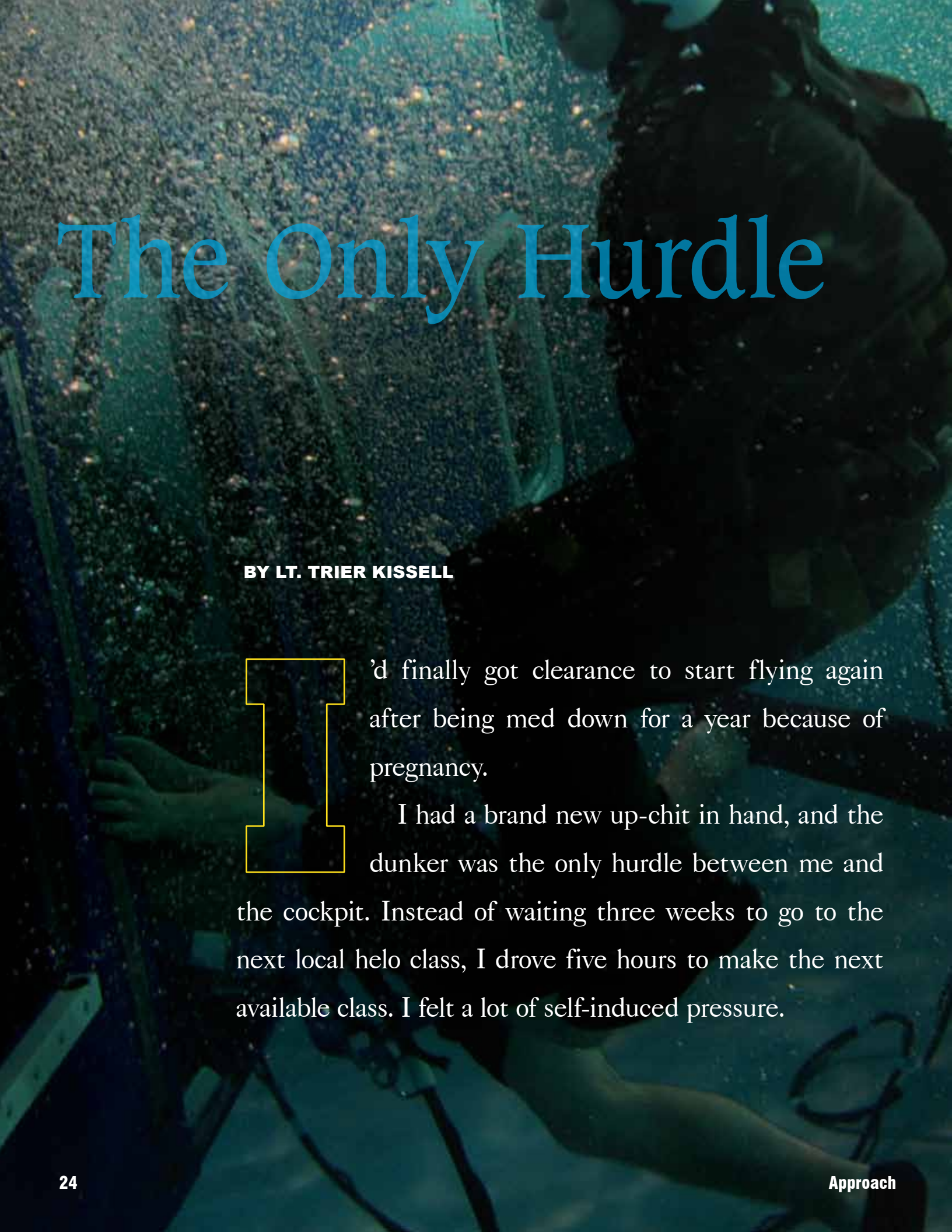
Along with Sgt. Logan and Sgt. Lapotsky in the back, Capt. Brandt quickly determined there was no sustained fire and the situation was a left engine failure.

Captain Ross established a single-engine profile. Captain Brandt, Sgt. Logan and Sgt. Lapotsky broke out the emergency-procedure (EP) checklist for "Single Engine Failure in Flight," and completed the steps. Noting an Ng reading of zero just a few seconds after the event, the crew assessed that the left engine had completely seized, and opted not to try an airborne restart. A suitable divert to the Djibouti-Ambouli Airfield was close by. After coordinating with their wingman (Gopher 27) and the ship, Capt. Brandt declared an emergency and landed with a single-engine, roll-on-landing to the active runway.

Both engine air-particle separator doors on the left nacelle had blown off. All engine-compressor blades in view were severely damaged, and several were missing. The engine was submitted for an engineering investigation (EI) to determine the cause of the failure.

Photo from L to R: Capt. Jonathan Brandt, Cpl. Donald Edmonston, Capt. Nathaniel Ross, Sgt. Corey Lapotsky and Sgt. John Logan.

FIRST LIEUTENANT JOSEPH SOLDIN, USMC, a flight student with VT-3, had completed primary flight training one week earlier. While standing his first wheels-watch duty at NAS Whiting Field, Fla., he spotted someone walking toward the approach end of the active runway at sunset. The individual was crossing the airfield from the golf course and was dangerously close to the approach end of the runway. Lieutenant Soldin alerted tower to the individual, and security forces took the individual away from the area.



The Only Hurdle

BY LT. TRIER KISSELL

I'd finally got clearance to start flying again after being med down for a year because of pregnancy.

I had a brand new up-chit in hand, and the dunker was the only hurdle between me and the cockpit. Instead of waiting three weeks to go to the next local helo class, I drove five hours to make the next available class. I felt a lot of self-induced pressure.

The dunker has always been a big fear for me. Like many pilots, I made it through previous water-survival training by gritting my teeth and knowing I wouldn't have to do it again for four years. This time I got as far as the MSWET (module shallow water egress trainer) chair. I got stuck twice and had to be yanked out by the instructors. Each time I took a break to recage before I tried again. After the last failed attempt, I got out of the water and sat down for a minute, but I felt myself growing more upset and nervous. I couldn't make myself get back in the pool. I drove five hours home wondering how the heck I could continue to fly without this qual.

Two days later, I went to see the local water-survival folks. I signed up for remediation and reported to the pool the following week. They had me dress out in all the gear and told me to hop in the pool. I hesitated at the side, trying not to barf. I tried to pump myself up thinking, "You have given birth twice; this is nothing. Get in the water."

My pep talk worked and in I went. It was just me, two staff members and the circus equipment. The first step was to get comfortable with the SEBD (survival emergency breathing device). The words "comfortable" and "SEBD" don't belong in the same sentence. Then off to the MSWET chairs. I took seven or eight rides the first day. By the last ride I was grinning from ear to ear. As advertised, it didn't kill me.

I CONTINUED TO GO TO REMEDIATION every day for a week. We eventually moved to the dunker. They put the dunker in the water upside down, and then pulled it up just far enough for me to stand with my head above water. They then had me grab the bottom of a seat with my legs and flip upside down underwater. From that position, I got through all the different egress scenarios. I couldn't get the normal dunker ride because that requires a full dive staff, so no sneak preview for me. The pool director approached me at the end of the week and asked if I was ready, and I replied, "Yes." They put me in a class the following week with a bunch of P-3 and C-130 pilots.

A couple of the cool things about being a helo pilot and going through water-survival training with fixed-wing pilots are that you have air and they don't, and you get to do two extra dunker rides. Helo pilots do five rides to get practice with and without the blindfold, with and without the SEBD, and then a combination of the two. The training went seamlessly that second time. After the first dunker ride, I actually started to have fun. Never in my wildest dreams would I expect anything in that building to be fun.

I want to get the word out that there is such a thing as preremediation. If this training is not your cup of tea, just give your local Water Survival Training Site a call when you have training coming up. The divers will get in the water with you and get you comfortable before going to the class. I am much more confident now about my ability to egress a helicopter underwater. No more rushing through the steps in a "Get me out of here!" panic. I now use the SEBD for its intended purpose and go through the steps in order. ■

LT. KISSELL IS A INSTRUCTOR WITH HT-18.

Water-survival training is conducted at the following Aviation Survival Training Centers (ASTCs):

Patuxent River	Norfolk	Cherry Point	Jacksonville
Pensacola	Miramar	Lemoore	Whidbey Island

Contact your command's Safety/NATOPS office to schedule training. For more information contact the Naval Survival Training Institute (NSTI) HQ at: (850) 452-2424, (DSN) 922-2424.

CONTACTS
Naval Aviation Schools Command
Crew Resource Management
181 Chambers Ave., Suite C
Pensacola FL 32508-5221
(850) 452-2088/5567 (DSN 922) • Fax (850)452-2639
https://www.netc.navy.mil/nascweb/crm/crm.htm

Lt. Tony Anglero, Naval Safety Center
(757) 444-3520, Ext.7231 (DSN 564)
antonio.anglero@navy.mil

OMG, RTB IMC NMAC Or Red, White, and Blue ... CESSNA

BY LCDR. MATTHEW PICINICH AND LCDR. ANDREW GASTRELL

Check. Another Fallon detachment was complete.

I was Dash 2 in a section of Hawkeyes flying a two-leg cross-country from NAS Fallon to NS Norfolk. We were going home after finishing an air-wing training det.

The prebriefed weather forecast and ATIS information "Romeo" at Lincoln, Neb., our first destination, announced a scattered layer at 4,000 feet and good visibility. On our descent, we had to pick our way around the clouds to remain VFR. However, as we leveled off at 4,000 feet approaching the terminal area, the weather was worse than what ATIS had stated. I was able to hang on to my lead but had to step down and take extra lateral separation to maintain visual. I felt flying standard parade would have been unsafe because of how often we had to go in and out of the clouds. In the midst of all this, the Lincoln approach controller advised us that information "Sierra" was now current.

To set the scene: my squadron was in the middle of a quick turnaround between deployments, having had returned only six weeks earlier. The majority of our flying in the last year was in the carrier environment, where there are few restrictions outside of 10 miles. We had only limited opportunity to fly formation on cruise,

and this lack of proficiency meant I was not as comfortable in parade position as I had been during my first tour.

To continue to add holes to the "Swiss cheese," I was a lieutenant with over 2,000 hours in the E-2, which is not the easiest plane to fly formation in. Placing two 80-foot wingspans and 32 total blades in close proximity to each other isn't exactly natural. Overconfidence in my abilities, being solely focused on my lead aircraft, and my inability to register what was being said over ICS by my crew led to what transpired next.

As we were in and out of the broken layer, which appeared to have a floor of 3,000 feet, I maintained sight of my lead just enough to hang on. I figured that because we were close to our destination field, approach soon would descend us below the layer, and I would snuggle back up for the break. I wasn't even looking at my instruments, but I remember my mission commander telling me that we had traffic off the nose and closing. My copilot also was looking at our lead and making sure that I still had him, but he also mentioned our altitude and the opposing traffic. On our tactical frequency, I was talking with the pilot in the lead plane about losing sight. I said maybe we should break off. At one point, I contacted approach and told them that we were the wing and wanted to detach for a separate approach. But, because we weren't the lead, we weren't squawking, and approach was unable to quickly separate us.

A couple benefits of the Hawkeye are that we have a five-person crew and a million radios. These features can also be a huge detriment at task-saturated moments.

Almost everyone in the plane was talking; ICS and radio comms became indistinguishable. I couldn't register the single piece of critical information out there: We had coaltitude, opposing traffic closing on our position.

Within seconds of all of this, I noticed we were about to enter another cloud. I realized I was 1,000 feet low, pulled up and climbed 500 feet. We entered the next cloud and popped out a second later. That's when I spotted the light civil aircraft passing down our right side, 500 feet below, and laterally offset another 500 feet. ATC then gave our section a descent and was about to give us a separate clearance, one that we didn't need at this point.

WE ALREADY WERE BELOW THE LAYER and continued as a section for an uneventful, but shaky, landing. We took on fuel and flew home as singles because it was getting dark, and the E-2 is not approved for night formation.

I have flown form through broken layers many times, but this flight was much worse than I had seen in a while.

A long debrief between the crews of both aircraft followed. We identified many factors that contributed to this near midair collision (NMAC). I was quick to take responsibility and identify the prime causal factors: my "I can hang on" attitude, failure to use lost-sight procedures, and inability to recognize what my crew was trying to tell me.

I have flown form through broken layers many times, but this flight was much worse than I had seen in a while. Outdated ATIS information, which didn't reflect the actual weather, delayed our decision-making process and caused us to not split the flight sooner. We also identified the overwhelming ICS and radio communications as a factor. With up to five people in an E-2, it's easy to miss critical information when more than one person is talking. The lead pilot stated in the debrief that he had given us a heading cut and direction to maintain altitude for lost-sight procedures, but it was drowned out by the commotion in my aircraft. The copilot was one of our junior pilots. The debrief highlighted a missed opportunity to take the controls, get us back to a safe altitude and execute lost-sight procedures.

An experience gap can be a barrier in the cockpit. I pride myself in what I do and the safety of my crew is always paramount. My crew and I walked away from this with more in our experience bucket and a significant withdrawal from the luck bucket. This situation taught me to get back to the basics. Procedures are in place for a reason — follow them. ■

LCDR. PICINICH AND LCDR. GASTRELL FLY WITH VAW-125.

Rescue Swimmers Are Paid to Swim
So Don't Kill Them Trying to Keep Them Dry

BY LT. MARIA RICHARDSON, USCG

I pounded on the copilot's bunkroom door, "We have a case, disabled vessel, possible medevac, come-on, it could be good."

It had been awhile since I had prosecuted a "good" SAR case. The initial mission information was scanty as usual. The 42-foot pleasure craft Carina was disabled just south of Pt Reyes, Calif., and had an unknown injury on board. Sector San Francisco had obtained a position before they lost comms with the vessel. Shortly after, the District 11 command center received an emergency position-indicating radio beacon (EPIRB) hit that correlated to that position. We were en route in our H-65 within the standard 30 minutes, along with Small Boat Station Golden Gate's 47-foot MLB (motor life boat).

"… Our electrical systems are going down, our engine is down, and we have an injured person onboard."

We decided to take the litter because we didn't know the extent of injuries. We departed in CG6502 with a little less than max gas.

We had about a 30-minute transit to the reported position, and within 20 minutes we received the EPIRB signal. I had used the new DF-430 on a few previous SAR cases with some success. Our difficulty on this case was a steady needle pointing to a vessel that was clearly not disabled, with lights on and underway.

The initial Mayday call was, "… Our electrical systems are going down, our engine is down, and we have an injured person onboard."

They had obviously recovered a few capabilities since their last transmission; however, we still had no radio communications. Ten minutes later, after making a couple laps, it was clear this was our subject vessel. Upon further scrutiny, we identified the flashing light of the EPIRB. We began a two-mile orbit, as the Station Golden Gate 47-foot MLB was only a few miles away.

We energized the electro-optical/infrared (EO/IR) sensor system (ESS), and observed as the MLB came alongside, keeping our distance to minimize noise. We saw no obvious signs of distress, although it was extremely dark and the ESS info was limited from a couple miles away at night.

The Carina had been slammed by a large wave, which broke the front starboard window to the pilothouse. The blow wreaked havoc on everything, rendering their electronics inop, and knocking over and injuring several crewmembers.

After several minutes of shouting between vessels, the MLB reported a 90-year-old male had a possible fractured hip. According to the coxswain, he showed signs of shock and was experiencing pain of eight on a scale to 10. With challenging communications, and limited additional information on the status of the vessel and her crew, we received a recommendation from the flight surgeon, via Sector San Francisco, to medevac the victim. We needed to develop a plan of action.

We considered our options, and I envisioned several possible outcomes as events would later unfold. With seas of six to eight, I had reservations about hoisting directly to Carina, and was not inclined to try a medevac. Based on our fuel, the remaining scenarios left little time to guarantee a recovery of the rescue swimmer (RS). We decided the best course of action was to lower the swimmer to the MLB, a platform we routinely hoist to for training, then have him transfer to the Carina to assess the survivor. If we left the swimmer on-scene to administer medical care, we could send someone to pick him up later when he arrived back in port. In the meantime, we could recall another RS to assume the duty. This

A Coast Guard 47-foot MLB.

The 42-foot pleasure craft Carina.

plan seemed much safer, and also provided greater medical care and comfort to a 90-year-old man in tremendous pain.

Swimmers Get Paid to Get Wet

Among our many considerations, foremost was the likelihood of the swimmer enduring a three-hour ride back into port while assisting the patient. For his comfort, I wanted to keep our RS dry, if we could. In the post-mishap discussions with the small-boat station, we learned that a personnel transfer from one vessel to another in those conditions was definitely not advisable. More likely, the RS would have had to jump into the water, which, if we had known, would have led us to put the RS to the water in the first place. We could have avoided all our trouble.

Engage All Available Resources in Decision-making/Operational Risk management (ORM)

Unfortunately, we did not solicit the MLB for advice or provide them a thorough brief of our thoughts. We only told them of our plan to deploy the swimmer to them, and we conducted our internal briefs in preparation for the hoist.

Trail Line. Trail Line. Trail Line

The one option that none of us considered or discussed was to use the harness deployment with trail line. This would have been our best option if we had wanted to deploy the RS to the boat, particularly since we were working with a Coast Guard small-boat crew trained to manage a trail line. We proceeded instead with a harness deployment without trail line.

The hoist started normally. Night-vision goggles were useless for looking offshore. However, I soon gained sight of the Point Reyes beacon and its reflection along the shoreline to the right, which gave a better horizontal reference for hoisting. Although winds were relatively high that night, they were steady at 25 to 30 knots. I felt comfortable in a hover with a decent power reserve, as we maintained position on the port quarter of the MLB. The flight mechanic (FM) asked the RS to give him continuous hand signals, and we commenced the hoist.

Communication Is Key

After about 60 seconds of conning me in, the FM got quiet. I prompted him with, "Talk to me."

I announced, "Lost target," as the MLB slipped behind and underneath us. This didn't overly concern me, but the lack of communication from the FM did. The next words out of his mouth were, "He's getting knocked around there … oh $#!&! Abort hoist. Abort hoist."

The aircraft jerked down to the right as the hoist cable became tangled in the mast of the MLB, as it continued to move up and down with the seas. The next five seconds were an eternity and an instant in time. The RS was knocked around several times on the upper buoyancy chamber of the MLB. An unfamiliar noise reverberated in the aircraft. A noise similar to a bang or pop made my heart sink; it was audible over the sound of the aircraft and it was terrifying. I didn't know where it came from, and I didn't

know where our RS was.

"Where is Jack?" I asked the FM.

The sound and tone of my voice belied the panic in my heart and the knot in my stomach; I feared the worst. This was a swimmer I had deployed with. He had made me laugh on my birthday, even as we conducted a search for our deceased brethren on the CG-1705 mishap. He was young and fiery as so many new rescue swimmers are.

"He is stuck on the landing gear," the FM responded.

The cable had snapped-off the top section of the MLB's mast, making the RS swing so far back and underneath the aircraft that the hoist cable was caught around the right main-landing gear.

I repeated the FM's response because I couldn't wrap my mind around it. I instantly thought of the recent mishap message in which the RS actually was wrapped around the nose-landing gear, an even harder thing to imagine. I took a second to process what he had just told me and what we would do next. But, before I could muster any thought beyond, "He's stuck on the landing gear," the FM piped up again with an equally discouraging and urgent tone in his voice. "The hoist is cut. The hoist is cut. I'm lowering to the water."

I instantly lowered the collective to reduce his fall, if he hadn't fallen already. I descended from 45 to 20 feet.

The copilot and the FM announced about the same time, "Shear. Shear. Shear."

"Swimmer is sheared … I don't have the swimmer in sight," the FM called.

During the next 60 to 120 seconds we waited for word on Jack. The copilot called the MLB and Sector San Francisco announcing our shear event, our current position, and that the swimmer was in the water. The MLB crew witnessed the accident, were quick to respond, and recovered the swimmer within a matter of minutes. They quickly reported that the swimmer was OK once they had him onboard. I wouldn't believe this until I spoke with him several hours later, at 4 a.m., when he returned to the air station from his boat ride, and subsequent visit to the SFSU Medical Center Emergency Room.

His injuries were not life threatening or permanently debilitating. Although he looked awful in a full-length knee brace and crutches, he was fit for full duty after a few weeks of physical therapy and taking it easy.

After the swimmer was onboard the MLB, we transitioned to forward flight. Then the copilot announced unusual vibrations. He asked if I felt the same, and after his second inquiry, I concurred. For the next 20 minutes our focus became extremely intense on the condition of our aircraft. We suddenly were no longer worried for our RS, but now for our own lives. We discussed where we would land and the FM said aloud what we all were thinking, "I don't want to do another 6505 here." He was referring to a mishap in 2008 when a Coast Guard helicopter, CG6505, crashed near Honolulu after their hoist cable snagged on a 47-foot MLB. All four aircrew members were killed.

But, our vibrations subsided, and I was convinced we were not experiencing the same situation that 6505 experienced. As it turns out, our unusual vibrations were only effective translational lift as we transitioned

An intact 47-foot MLB mast.

Broken MLB mast folded down; Carina in the background with a broken right front window.

forward. We were just hypersensitive after what had happened while hoisting.

Our reaction highlights the power of an idea, but it's also a testament to good crew-resource management (CRM). We had worked through the idea and did not ditch a perfectly good aircraft. After the longest 20 minutes of our lives, we arrived at the air station and tried to unwind. We awaited the return of our rescue swimmer.

Here's three points I'd like to emphasize from our eye-opening SAR case:

• Use every available resource for your risk assessment and decision-making. A quick consult with the MLB on how reasonable it was to do a personnel transfer between two vessels would have averted the entire event.

• Trail line. Trail line. Trail line. Change your way of thinking by always considering initially using the trail line, particularly when hoisting to a 47-foot MLB. Only opt out of using the trail line when it is not absolutely necessary. At a minimum on every hoist, the use of the trail line should be discussed.

• Communication is key in many ways. Communication between our aircraft and the MLB, between the hoisting pilot and the flight mechanic, and among the entire crew in overcoming a powerful idea was critical to success. Be accurate, bold and concise.

This mission was downright terrifying. Not only did we not make a rescue, we injured one of our own. His injuries could have been worse, but that is no consolation. I am thankful for the Coast Guard's ability to save lives, and I appreciate even more the inherent risk in executing that mission. My personal motto is, "There is no greater love than this, than him who gives his life for a friend." But, that motto does not allow me to sacrifice the lives of my crew for any reason, not even to save the life of another. To all lifesavers, realize and acknowledge the risks taken to save others and carefully weigh all your options. ■

LT. RICHARDSON IS A SECOND TOUR H-65 PILOT CURRENTLY SERVING AT USCG AIR STATION SAN FRANCISCO.

Icing *On the* Cake

BY LCDR. BRIAN MILLER

It was a typical cold, wet and blustery early spring morning at Whidbey Island. The clouds were down around 3,000 feet, and the icing level wasn't much higher.

I had just finished briefing my student ECMO on the day's flight when we got the call that the jet I would hot switch into was home early. No big deal. We walked immediately and met the Prowler as it was pulling into the line.

We waited for about 10 minutes while the jet was chained down, and the troubleshooters worked on the right engine bay door. Apparently, one of the generators kept kicking offline. A few minutes later the doors were closed and the pilot, a fellow FRS instructor, climbed down. He told me about the generator gripe, and then casually mentioned he had picked up a good amount of ice on the windscreen during his approach.

I got into the jet and within a few minutes we had restarted and were ready to taxi. About 200 yards out of the line, voila, another generator failed. We did a 180 while still on the ramp and went back to the line. The troubleshooters were out of ideas and the FRS was out of spares. The flight was cancelled,and we walked inside.

I got out of my gear and headed to the second deck. I was greeted at the top of the ladder by the skipper and XO. They had both sets of arms crossed. Uh-oh. I held my ground and assumed a nonthreatening posture, knowing that turning and running would only evoke a predatory response.

"What happened to that jet?" I was asked, in stereo.

"Sir, I don't think I understand," I replied.

"The jet you just got out of had both motors FODed," said the skipper.

"Sir, I taxied that thing about 200 yards on the ramp before I brought it back and downed it for the generator. Unless I managed to find a big pile of gravel on the taxiway, I have no idea how those motors got chewed up."

... every jet deserves the courtesy of a walk-around on postflight ...

At that point the light bulb came on, and I remembered the previous pilot and the icing. In all likelihood the ice that accreted on the windscreen also built up on that big, beautiful, bulbous nose and then sloughed off. It must have gone down the intakes when the jet descended into warmer air. I was fortunate that I didn't take this bird flying with two bad engines.

Certainly there are a couple of lessons learned here. First, every jet deserves the courtesy of a walk-around on postflight, even if it never left the chocks, and if only for the plausible deniability. Second, now that I have transitioned to Growlers and gained a much healthier respect for icing, I realize that we didn't have the same kind of standardization in place for what happens on deck with a jet that encounters ice. In the E/F/G world, if an inlet-ice caution is tripped, the jet must have the inlet ducts checked, period. With the Prowler, there is no such caution or light and therefore no such standard. After being told of a good buildup of ice on the windscreen, I should have demanded that the ducts be checked. I didn't and I almost paid for it — dearly. ■

LCDR. MILLER FLIES WITH VAQ-135.

When faced with the abnormal, we need to make sound decisions. We rely on training to bring back our aircraft with all its parts intact and ready to accomplish our nation's business.

—LCdr. Christopher Hayter, VFA-87