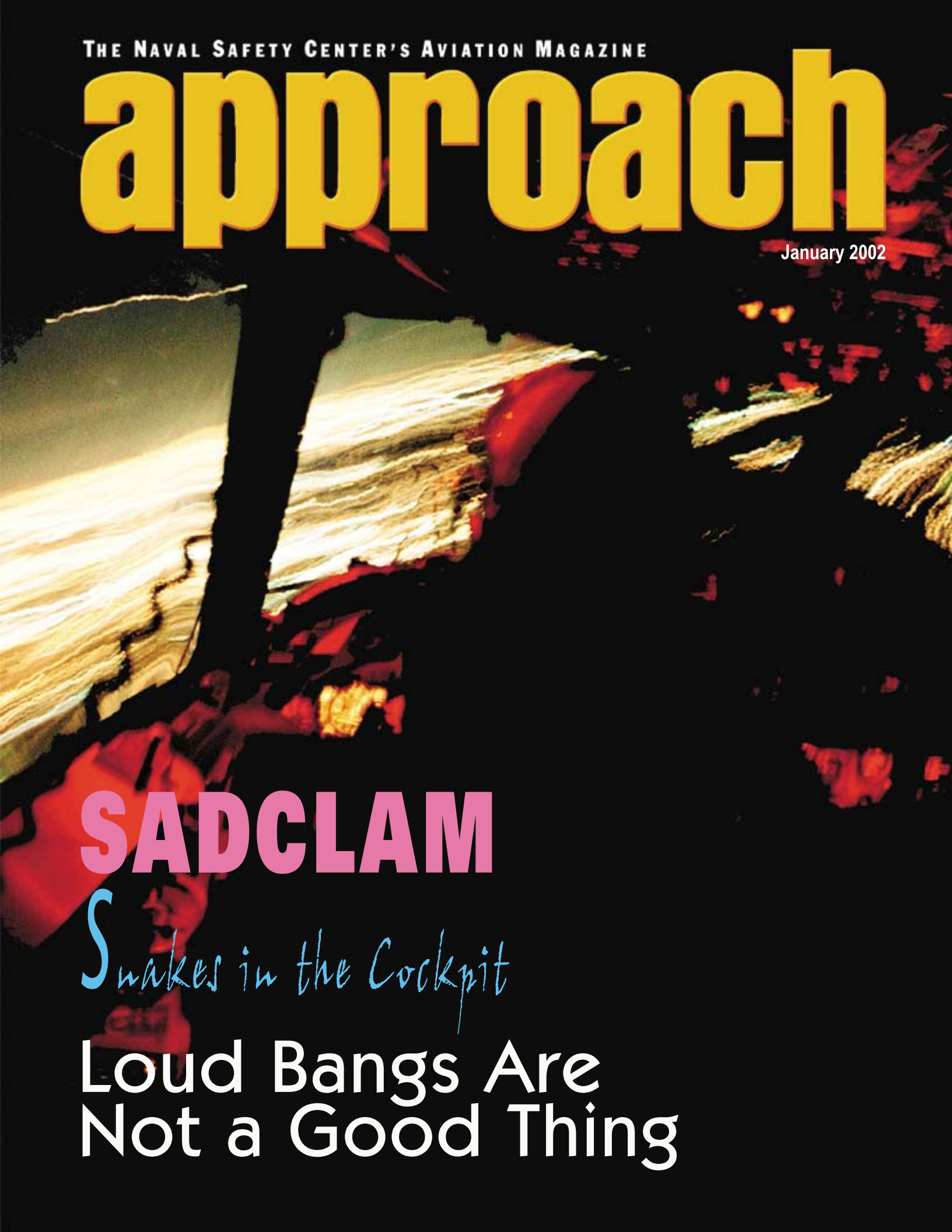
THE NAVAL SAFETY CENTER'S AVIATION MAGAZINE

approach

January 2002



SADCLAM

Snakes in the Cockpit

Loud Bangs Are Not a Good Thing

approach

The Naval Safety Center's Aviation Magazine

January 2002	**Volume 47 No. 1**
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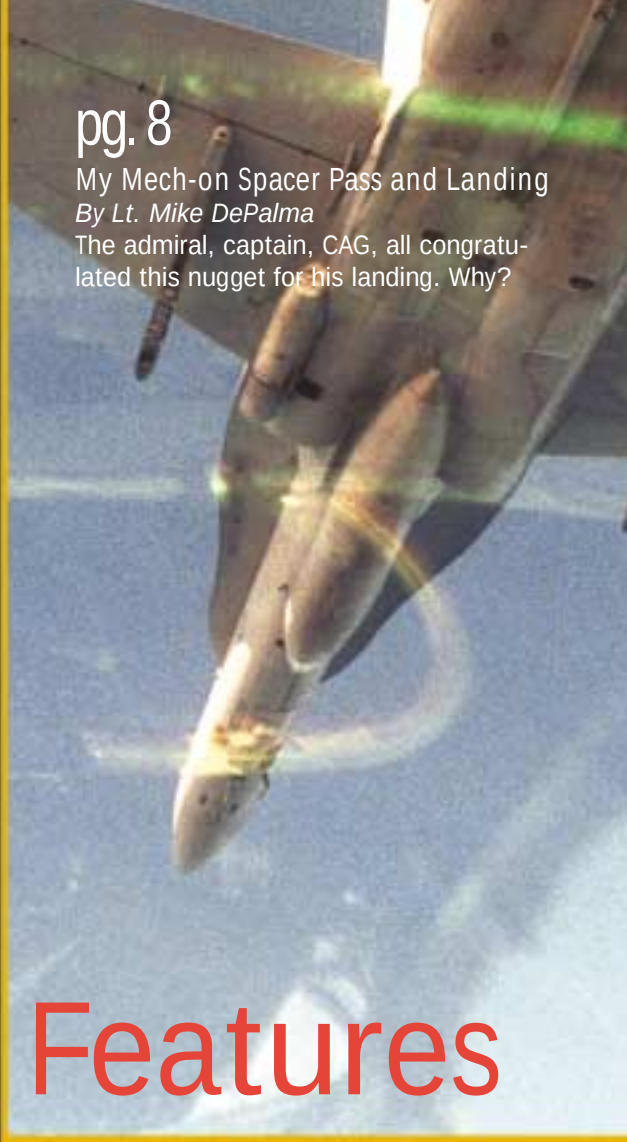
Mission Statement

Mishaps waste our 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, and that any losses are due to enemy action, not to our own errors, shortcuts or failure to manage risk.

We believe there is only one way to do any task: the way that follows the rules and takes precautions against hazards. Mishap rates rise during combat; the time to learn to do a job right is before combat starts.



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My Mech-on Spacer Pass and Landing
By Lt. Mike DePalma
The admiral, captain, CAG, all congratulated this nugget for his landing. Why?

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Thanks for helping with this issue…

LCdr. Billy Ray Ipock, VFA-137
LCdr. Larry McElvain, HC-11
LCdr. Vik Sardana, VAQ-131
LCdr. Glen Hansen, VFA-87
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Capt. Mutt Burton, VMFA-312

I noticed my heads up display (HUD) began to flicker before eventually kicking off-line.

No HUD and Counting on the Paddles Upgrade!

By Lt. Joe Alden

Four months into our cruise, the USS *Theodore Roosevelt* and Air Wing 8 team found itself in the steamy Persian Gulf. After three months of combat in Kosovo and Serbia, we were anxious for our crack at Saddam.

Cyclic ops in the Arabian Gulf always have their share of gotchas: slipper seals that fail, aircraft that slide toward the scupper while turning onto cat 4, diverts into Al Jabbar to hang with the Air Force for a day. Everyone had a story of adventure or misadventure.

Starting at VFA-106, fledgling Hornet drivers practice making circus landings. Unfortunately, FCLPs in the Hornet are not challenging unless done in conjunction with circus approaches. Getting off to a good start and putting your velocity vector next to the lens is a snap and usually will get you one OK-wire after another. Even the circus approaches at the beach don't take on the real-world feeling you get when they actually occur in the middle of some faraway ocean.

This flight wasn't supposed to be exciting, a 2 v 2 with the Toms next door, restricted to the E-2-defined bear cave. We flew the standard, cyclic-ops, max-endurance profiles during the runs, then knocked off to check in with marshal. After completing my fence checks, I noticed my heads up display (HUD) began to flicker before eventually kicking off-line. It had happened to me once before during RAG CQ on the JFK. Cycling the HUD on-off switch usually fixed the problem, but not this day.

Still a nugget, I did the smart thing and "fessed" up to my buddy on AUX. I jiggled the HUD, cycled it on and off, played with the intensity, tested it with BIT, but nothing worked. Now was the time to talk to the ultimate troubleshooter, the CATCC rep. He was our XO and could draw the schematics of the Hornet from memory.

Foreground photo by Matthew Thomas
Photo-composite by Allan Amen

Switching to button two to speak with a rep invites fellow aircrew to listen in. Being a new guy, that was in the back of my mind. With the ship between Farsi Island and Iran, there wasn't room for error. Being head down with my displays and going through an IBIT with a small AOB on the standby gyro halfway between mom and Farsi was inviting trouble. I couldn't bear it any more and stopped the BIT. I found myself two miles from the Farsi standoff range and headed directly for it. I went to mil power and pulled away just before nicking the airspace boundary. My equilibrium was whacked at this point. The next thing I thought of was the helicopter crew that flew over Farsi the week before. Upon their arrival, our battle group commander impounded their helicopter and grounded the crew. I had dodged that bullet.

Back to the rep: He asked if I felt comfortable bringing aboard an aircraft without a HUD. I replied, "Yes." Why? Because I knew from experience that a degraded pass in the Hornet often brought a bonus, usually the OK or the upgrade from paddles. I told the rep I would do it.

Checking into marshal and setting up holding was easy with the HUD on my left DDI. After completing the HAIL checklist, I pushed on time and made my descent. I had bull's-eye and needles frequencies dialed in and received them 4.0. I had all the tools to get me the good start we are accustomed to. Needles showed me with the nice up-and-on, and bull's-eye had me the same. Setting the glide slope with the auto throttles eased the workload tremendously. Still, something in the back of my mind was reminding me of flying the ball in the simulator.

After setting the standard 720 fpm rate of descent, with auto throttles engaged, I clicked them off and began manhandling the throttles. My heart began to race. I was telling myself

those Tomcat and Prowler guys do it without a Gucci HUD like ours. I wasn't comfortable looking down at the left DDI for everything I needed to fly the approach. I was used to looking through the HUD. When I called the ball, I only saw meatball, lineup and AOA; no VSI. That is where an NFO would come in handy.

I got off to a great start with needles centered on the velocity vector. I transitioned to head-out-of-the-cockpit and added power to get the ball to crest. That didn't happen. The ball began to rise until it screamed to get off the top of the lens. I knew that it was getting ugly, but I remembered that according to our RAG paddles, no-HUD in the Hornet was an emergency. I bought a bolter bigger than anything.

I had plenty of fuel for several more cracks at it. It never crossed my mind to ask for a mode-one approach. That probably would have been too easy. I wouldn't even have had to deal with the problem, but I wanted to prove to myself I could get the OK 3-wire.

"Four Zero Four, airborne," I sadly called, as I made my ascent to angels one point two.

There were no lights anywhere, except for CVN 71 and her aircraft flying around. I knew what I'd done wrong. Hooking in around six miles, I dirtied up and referenced my DDI. Once again, I made it to a great start with a centered ball and blew it off the top.

"Power back on, bolter, bolter, bolter," was the call as I bought my second one.

My heart was beating out of my chest. Now I was thinking to myself that CAG and the skipper were biting their nails as the only lieutenant junior grade in the two Hornet squadrons was flailing around the gulf. Our ready-room bolt was surely hanging over my lonely seat, suspended from the ceiling by a steel-fishing leader. I came around for the third time and did the same thing. It was getting ugly. I had one pass left before I would either hit the tanker or head to Kuwait. Mustering what little brainpower I had left, I visualized what the pass should look like and went over it again and again on downwind. Getting to a good start was easy; it was flying the ball that was slapping me around. This was it, I was coming aboard.

"Four Zero Four, on and on, three-quarters of a mile, call the ball," I said.

After the ball call, it was my turn to troll. I was coming aboard. So what did I do? I kept leading the low, breaking one of the five LSO rules-to-live-by. Well, I led the low all the way to the ace.

"Welcome aboard," was probably resounding around the ship. It was good to be home. Heading down to the ready room, I couldn't pick up my head. I had just flown four ugly passes in a row. I reassured myself that the Hornet-no-HUD emergency would get the bolters no-counted and the ace auto-no-grade brought up to at least a fair. When I saw the CAG paddles walk into our ready room, I could tell by his look that I was sadly mistaken. After all, he was a Prowler guy, and they do it all the time.

I took it in the face, but it was my own fault. By the way, that shiny bolt was hanging over my ready-room chair as expected. My Ops O showed me his own four-bolter entry in his log book from when he was a J.O. I learned even the best have had their night in the barrel. He had my three bolters and one no-grade beat but not by much.

Starting back in CQ, I should have done more no-HUD and other circus passes in the FCLP pattern. Thinking the no-HUD emergency would buy me the paddles upgrade was ludicrous. My concentration was about half of what it should have been. Thinking about the auto OK was the wrong thing to do. Almost flying over Farsi Island could have been avoided with better aviating and navigating. Trolling the low to get aboard could have been fatal.

What could I have done? Flying the ball to touchdown would have been nice for a start. Applying the LSO rules-to-live-by would have helped as well. Furthermore, this all could have been avoided with a mode-one approach. It was a learning experience and one that could be avoided in the future by preparing and focusing. There are those who have and those who will.

Lt. Alden flies with VFA-87.

Is This a Transmission Line or a Garden Hose?

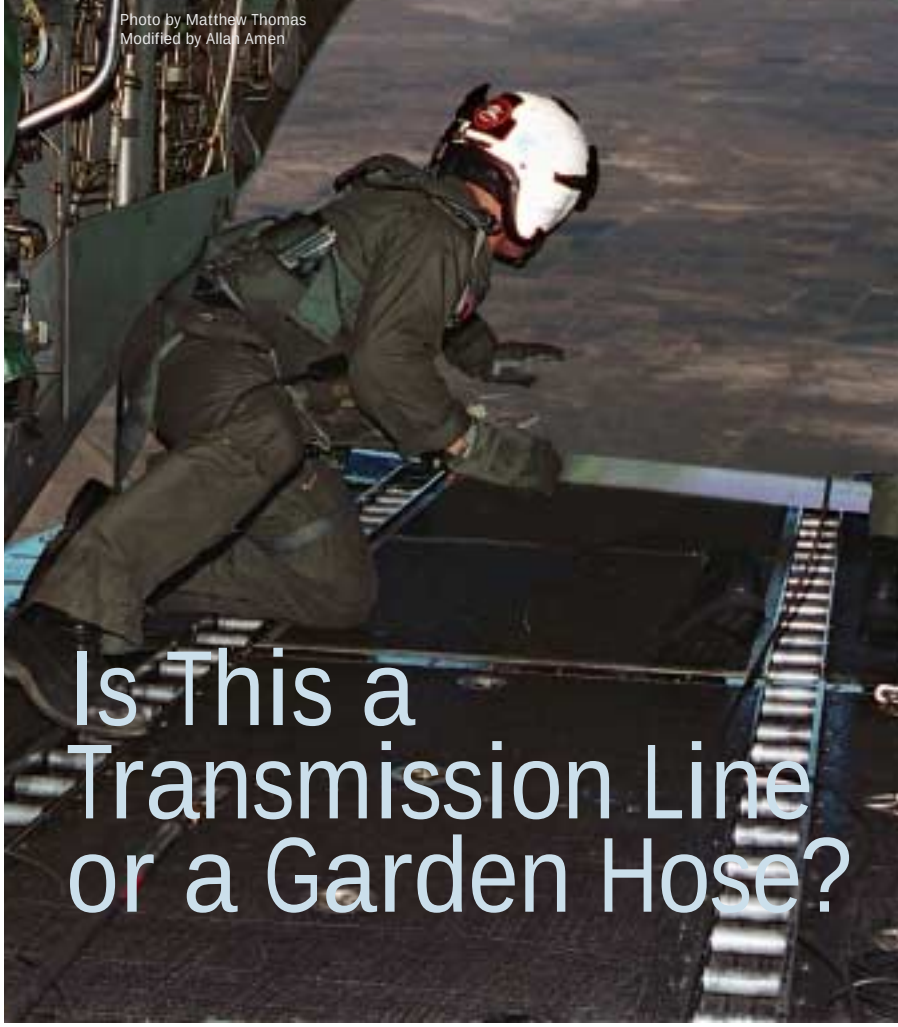
Photo by Matthew Thomas
Modified by Allan Amen

By Ltjg. Justin Hawkins

After wrapping up the NATOPS brief, we preflighted for my final fam flight in the H-46D FRS. It was uneventful, with the exception of a loose transmission-return line that runs down the right side of the aircraft into the mix-box assembly. After discussing it with the instructor, the crew chief noted this had been a recurring problem, and maintenance would only need to tighten a couple of bolts behind the line.

What the instructor didn't know was that, for the line to be correctly tightened, the aft transmission would need to be dropped. This would be a time-consuming, undesirable task for maintenance, so this information was not relayed to the HAC. It was only a matter of time before taking the easy way out almost proved costly to both aircraft and crew.

An hour-and-a-half later, we departed the channel. I prepared myself for the simulated-emergency procedure that would take me to an outlying field to practice for an upcoming NATOPS check flight. Like clockwork, my instructor gave me the expected simulated-compressor stall, and I promptly ran through the NATOPS procedures as we headed west.

Minutes later, we were on emergency throttle and turning toward Imperial Beach, when the crew chief saw something by the aft transmission that didn't look right. He put on the gunner's belt for an aft-station check. After lowering the hatch, the crew chief's voice became noticeably nervous as he told us we had a problem and to clean up the simulated-compressor stall. The rescue hatch was full of transmission fluid, which was pouring over the sides. The previously mentioned loose transmission line that leads into the mix box was spraying fluid everywhere like a stray garden hose. Upon realizing the severity of the leak, we instantly turned toward North Island and declared an emergency, proceeding inbound at 145 knots.

It didn't take long to realize this wasn't just another scenario thrown at me to make sure I was ready to move on from the fam stage. We were cleared directly to runway 36, and, after what seemed like an eternity, began our descent to the approach end of the runway. After landing, we taxied clear of the runway and immediately shut down the aircraft.

The crew chief inspected the aft transmission and noticed there was no fluid in the sight-gauge glass. There was only a gallon-and-a-half of transmission fluid remaining in the 5.8-gallon system. It took roughly five minutes from the time we noticed the problem to when we landed. The situation could have been catastrophic had we been farther offshore or flying at night. In the darkness, the crew chief probably wouldn't have seen the leak.

I learned a couple of valuable lessons. Don't take shortcuts to accomplish a mission. Take the conservative route, and make the proper fix the first time. Cutting corners eventually will sneak up and bite you. The flight also proved to be a wakeup call for how quickly a leaking system can turn into an emergency. In our case, it would have been only a couple more minutes before our aft transmission had emptied and a ditch would have been inevitable.

Ltjg. Hawkins flies with HC-11.

SADCLAM

By Lt. Thad Johnson

It was one of my first flights as helicopter aircraft commander (HAC). I had been training to do this since I started flight school. I was the mission commander with a nugget who had never been to the boat. We were flying in support of a COMPTUEX off the coast of Southern California. The night was overcast without a moon, and we were out there, "Doing the business," as my skipper likes to say. We had donned the goggles and were to check out a contact that might be orange. The ASTAC called and said there was a chance USS *Benfold* would need us for a medevac.

My air boss, on a previous flight, had to decide whether to degoggle—to allow his eyes to adjust, because there was a question about what ship he was going to recover on. With this fresh in mind and knowing USS *Benfold* did not have compatible lighting, we decided to degoggle. Next, while we waited for tasking, I started running through everything we might need to conduct a medevac. We broke out the blue brains and looked at the route to Balboa Naval Hospital. We talked about whom we would talk to on the radios while transiting from the ship to the hospital. We discussed the requirements for a night medevac and pax transfer. We pumped the ASTAC for as much information as we could. I kept asking the H2P and the aircrewman, "What else?" When the ASTAC told us to kick to USS *Benfold* control because they were ready to recover us, I thought we had all the bases covered.

About then, my copilot said, "Do you want to break out the HOSTAC 1?"

I shrugged and replied, "I think we can handle a DD." After all, our ship, USS *Kinkaid* was a DD. Here's the thing: The USS *Benfold* is a DDG with a flight deck that has a 30-degree offset. I've always been a little weak in specific knowledge of different ships, but I knew my copilot was strong. He always was quoting stuff out of Jane's. I'm not sure why I didn't heed him. I was about to learn the hard way.

We closed the ship by going straight up the BRC without being able to see the SGSI, the deck-status lights, or the lineup lights. I requested the tower check the intensity on these lights. In fact, all I could make out was a stern light and some dustpan lights as we got close. What would have been your typical dark-night scary approach had become really dark and scary.

We were at less than a quarter mile, at 100 feet, and at a creep of 10 knots, when it all hit me. We started to pick up the lights and the lineup lines, and our error was clear. The LSE was accommodating us by facing our way. We managed to get into position and put it on the deck.

What would have been your typical dark-night scary approach had become really dark and scary.

Photo by Matthew Thomas
Photo-composite by Allan Amen

The medevac was brought onto the helo, and we were off to Balboa, but the fun wasn't over.

We talked to all the key players and passed information ahead of us as requested. We split the duties; the aircrewman fed information to the controllers, and the copilot switched radios. Earlier than anticipated, the San Diego Airport Tower (Lindbergh International) cleared us direct. I had flown the hospital route a couple of times—you just follow the freeway north, pick up the exit, and look for the pad. This works unless you end up coming from the north, which we were, because of the way we had been cleared. This was my copilot's suspicion, which he voiced and I ignored, because he didn't sound sure of himself. The Lindbergh controller quickly straightened us out, and we found the pad without further incident.

The lessons learned here are all CRM. *Situational awareness* could have been improved and would have led to better *decision-making* if I had listened (the second part of *communication*). My copilot could have been more *assertive* with his opinions. We also needed to *adapt* more readily to two unexpected situations. We managed to accomplish the *mission*, but it would have run more smoothly had my *leadership* brought it all together. I use the acronym "SADCLAM" to remember the CRM skills. Did I leave anything out?

Lt. Johnson flies with HSL-43.

Photo by Matthew Thomas

My Mech-on Spacer Pass and Landing

By Lt. Mike DePalma

Back in intermediates in Meridian during my student days, I was one of a group of T-2 and A-4 students known as the "hybrid" class. I flew half the T-2 syllabus, up to my first cruise-form flight, before I was sent down the hall to VT-7. I had the fortune, or misfortune—depending on how you look at it—to miss the gun pattern, CQ and the rest of the T-2 program because of maintenance downings and delays in the pipeline.

One month into my first WestPac, as a nugget on USS *Constellation*, I started to feel comfortable flying under blue-water conditions. After two nice port calls in Australia, the ship pressed to the Gulf on a course that called for 15 days of blue-water ops. I was scheduled for an air-to-air gunnery hop with eight planes from several squadrons. The Tomcats would tow the banner.

I felt apprehensive as I walked into my first

guns brief, especially with live bullets in the nose. The brief was thorough, as the Tomcat RIO explained the inner workings of a dynamic pattern that I would be seeing for the first time. My XO assured me he would be sticking to the numbers, since he hadn't flown a gun pattern in a long time. We walked to the flight deck with two priorities: not to shoot down anyone and to keep the banner intact for the third and fourth section of aircraft.

As I read the maintenance book, I noted I would be flying 403 that day. It didn't seem like it could get any better. Big blue sky, bullets in the nose, and my name on the aircraft to top it all off. However, the book had two up-gripes for flight-control computer problems (the flight computer was hot on deck). The jet had gone down on deck twice for these problems. The computers had been swapped out, and on my start, there were no abnormal indications. I rogered a 43k board and took the shot off cat 4 with the usual grin on my face. As I cleared the shuttle, I heard the "deedle deedle" aural-caution tone familiar to all Hornet pilots. I had an X'd out left stab in channels two and three, with a bit-logic (BLIN) code of 333.

I climbed to altitude and told the XO about my problem. We agreed I would go for the reset at 10,000 feet, and, if it cleared, we would press on with the mission. The caution and BLIN code cleared, and we proceeded to hold over the tractor and wait our turn to enter the pattern. We had picked up a super spare at that point, Dash 3 (my former instructor from the RAG in San Diego) who was now CVW paddles.

As the Marines finished on the tractor, my XO led us down to set up 90 degrees off the spacer-pass heading. I followed his break into the pattern with a seven-second interval and picked up the tractor at my right one o'clock. I felt left-stick pressure as the jet ramped up to 440 knots at 10,000 feet. I found this to be curious because the jet was goofy gas on stations five and seven. I watched my XO pull up into the pattern, and, as I approached the banner, I called, "Falcon Four Zero Three. In spacer pass left, perch right."

Just as my XO was about to reverse high, I heard, "Deedle, deedle," and "Flight computer hot." Right at the "Deedle, deedle," the jet twice rolled violently to the right, with a corresponding 25-degree, nose-down pitch and a negative 1.6G spike. I was heading toward the tractor and my XO was coming to bear with live bullets in the nose.

I tried to right the aircraft with full-left stick and left rudder as it plunged through an undercast at 9,300 feet. After a couple of choice words to myself over the ICS, I called, "Falcon Four Zero Three is out of control passing nine-thousand feet." The Tomcat crew called a red range as the XO brought his nose up and leveled off above the tractor. Dash 3 saw my departure from a mile-and-a-half and followed me through the undercast. He gave me a great altitude call as I descended toward 8,000 feet. I saw this altitude staring at me while I started to regain control of the jet. I now focused on my left DDI and confirmed my worst fears: mechanical reversion ("mech on"), with a total failure of the stabilators. Every channel was X'd out, and the BLIN display listed too many codes to remember. I called, "Mech on," as I turned east to clear the tractor, which I no longer could see. While the jet started climbing, the flight controls became very sensitive. Control authority was sluggish at best. The stick was way back in my lap, as advertised in NATOPS. I was happy just to be in control and flying. I elected not to reset the trim button to recenter the stick.

My XO took over reading the NATOPS pocket checklist to me, and we arrived at the moment of truth. As I tried to reset the failure, I remember thinking there was not much chance of this working because of all the events that had led up to this point. I was right. As I hit the reset button, the stick kicked sharply to the right, and the jet pitched nose down and to the right. I leveled the jet and told my XO we would not be trying that again.

We were about 70 miles from the ship at 25,000 feet. We contacted strike and told them we had a major flight-control failure and departure. We needed a rep and most likely a pull forward. I had 7,500 pounds of JP in the jet, and we were operating 650 miles from any available piece of concrete. Strike seemed to have difficulty understanding our predicament, so we told them we were switching marshal. My XO handled the radios as my best efforts were spent flying the airplane. We basically got the

same treatment from marshal as they struggled to understand the significance of my emergency. Finally our Dash 3 came up and told marshal we had a time-critical emergency in progress, and they should alert a senior squadron rep. We switched tower and talked to the boss and our rep; they had 35 years combined flying experience.

My rep advised me to check controllability to see if I could handle the aircraft in the landing configuration. If I hadn't already known the severity of the situation, I would have figured it out from the level of attention it was getting—I heard CAG, DCAG and my skipper's voices in the background. My first order of business was to reduce the asymmetric stores, which consisted of my right drop tank. I set up the select jettison and punched the tank: $31,000 in the hole already. The jet flew fine dirty. The stick would not recenter with the trim button, and it was very close to the ejection handle as I trimmed the jet on speed. My rep asked me if I felt comfortable trying to bring it aboard. I felt like one try was worth the effort, especially since a 600-mile transit to some little-known Indian Ocean island was not high on my list of ways to spend my afternoon.

The next thing I heard was the boss calling the plane-guard helo pilot and asking him to remain as close to the ramp as possible.

I dumped down to 4,500 pounds and started the approach. The jet's pitch response was slow, but my real concern was lineup corrections. These corrections were more difficult to make in my present situation because of the large adverse yaw when flying the Hornet in mech. CVW paddles (another former RAG instructor of mine) came up on the pickle at 10 miles and told me to hawk my lineup early. If they decided to get rid of me, they would do it early.

The last radio transmission I made was at three miles as I told the boss I was established. The next thing I heard was the boss calling the plane-guard helo pilot and asking him to remain as close to the ramp as possible. The pilot responded with a somber, "We are ready and close aboard on the starboard side, sir."

I do not remember the pass exactly, but I remember trying to call the ball with a chipper voice. I picked up little right-to-left drift and tried to make the correction in close. I added power as the jet labored to the right—too much power, it turned out, as I watched the ball start to rise. Realizing that I did not want to try this again, I quickly pulled off the power as I gave the wings a little waggle in true Hornet DLC fashion. With the power back at military, I came off lineup and back to the ball to see it south of the datums and going down in a hurry. At that moment, the hook picked up the ace on the fly, and I was aboard. Never pass up a good wire, right? I breathed a sigh of relief as the admiral, captain, and CAG all congratulated me for completing one of only a handful of fleet, shipboard mech-on landings.

I learned several things that day. First, always know the maintenance history of the jet you're manning up. The ADB can tell you a lot of things, but it will tell you nothing if you just skim the up-gripes.

Second, listen to what the jet is telling you. After my first caution off the cat, the jet was difficult to trim and something definitely did not feel right. The mechanical reversion takes approximately three-point-four seconds to clear out the stab position in order for the stabs to fair and be controllable. My insistence to complete the mission and finally get the gun pattern under my belt could have been disastrous had mechanical reversion occurred after my pull to the high-reversal position.

Third, always know your current divert. Even though we were blue water, I could have ended up at a remote landing strip about which I knew nothing. A quick glance at a chart before the brief can add provide situational awareness to your flight and provide options when the NATOPS says there are none.

Lt. DePalma is an LSO and flies with VFA-137.

C-2 + CRM = BOQRO3N

Photo by Matthew Thomas
Photo-composite by Allan Amen

By LCdr. Doug Crawford and LCdr. Scott McQuillen

Although this article is co-written by LCdrs. Crawford and McQuillen, it is written from the viewpoint of the pilot flying, LCdr. Mc Quillen.—Ed.

We were halfway through our WestPac cruise aboard USS *Kitty Hawk*. Well, we hadn't actually been aboard for the whole time. We COD guys prefer the comforts of the Atsugi BOQ. Doug and I were paired to fly to Atsugi with mail, cargo, and maintainers to do scheduled maintenance on the beach. We had gone through AOCS, flight school, the RAG, and now were on cruise together. We had confidence in each other's abilities as pilots. The weather brief showed only a few isolated thunderstorms near Atsugi. After a good cat shot into a pink sky, we headed north and checked in with Yokota Approach after getting ATIS. The weather was 2,000 OVC, five miles visibility. Several thunderstorms were around the field; they had popped up just minutes earlier. We turned on the WX radar and painted the cells. A little red, some yellow, and a lot of green. Yokota told us to expect the ILS to runway 01. Our weather radar indicated one of the cells, small but red, was right in the middle of our final approach course. We declined

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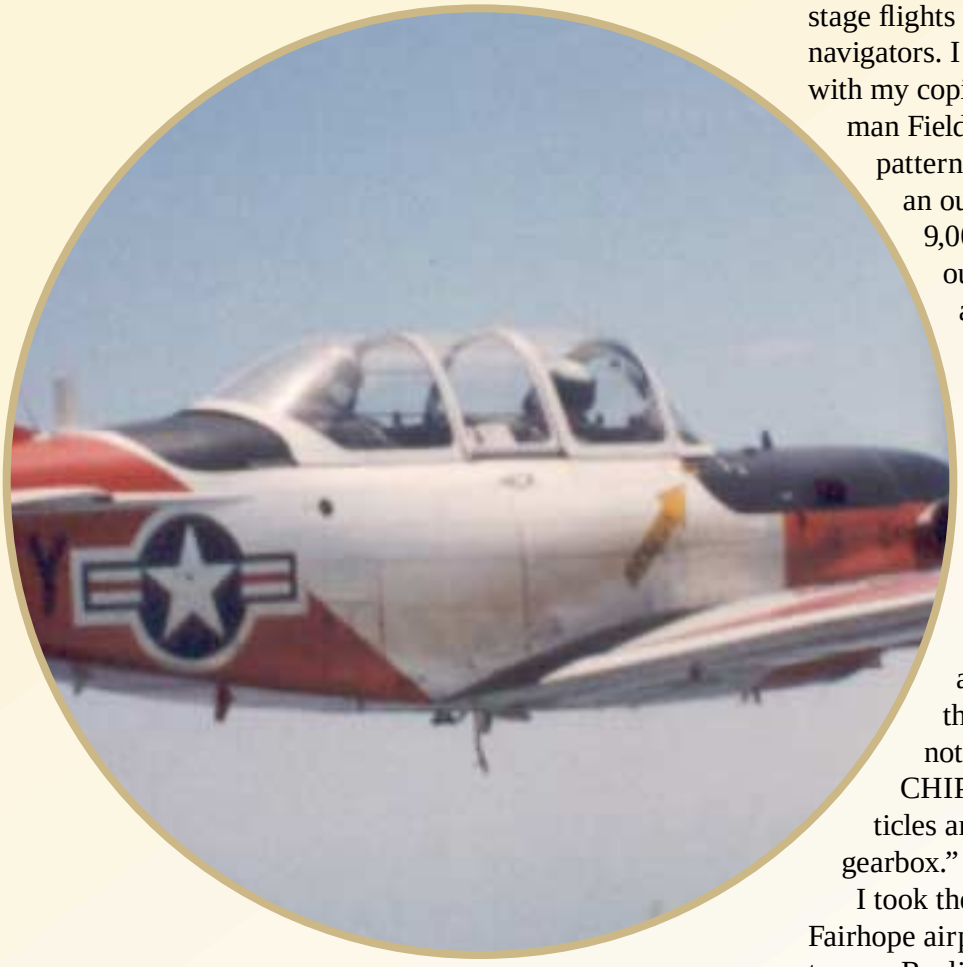
Aircraft to Pilot—How Do You Read?

By Lt. Jim Pratt



I was scheduled to fly with another instructor and give him a fam check ride. This qualification would allow him to instruct the fam stage flights for student naval flight officers and navigators. I was in the front seat of the T-34C, with my copilot in the back. We departed Sherman Field and completed all the landings and pattern work early in the flight at Silverhill, an outlying field. We then climbed to 9,000 feet and completed stalls, spins, out-of-control flight recoveries, and aerobatics.

Descending through 6,000 feet, my copilot gave himself a simulated HAPL (high-altitude power loss), and I commented we should stay clear of Fairhope's airspace. He was running the HAPL procedures when I felt a slight vibration, like a mild hum, in the airframe,. I asked him if he felt the vibration, and, before he could answer, "No," the CHIP light illuminated. NATOPS notes, "Illumination of the magnetic CHIP detector light indicates metal particles are present in the propeller-reduction gearbox."

I took the controls and turned toward the Fairhope airport, setting 850 foot-pounds of torque. Realizing we were only a couple of miles south of the airport and at 5,000 feet, I reduced power to 200 foot-pounds, lowered the gear, and slowed to 100 knots. My copilot declared an

emergency over the working-area common frequency and called out the VHF frequency for the airport. I glanced down at the VHF control head and noticed the frequency was already in standby, so I toggled it to active. My copilot then made two calls to Fairhope Unicom, announcing our intentions. Having recently completed my NATOPS-instructor check, I was aware of the need to get on the ground as soon as possible. I chose not to fly the standard, circular, emergency-landing pattern but instead dropped the flaps, S-turned and slipped to a straight-in landing to runway 1. Somewhere on final, I realized I would be landing with a light-quartering tailwind, but I knew that would be better than trying to reposition for the other runway. We completed the checklists and set the emergency code in the transponder.

While descending toward the runway, my backseater noticed a burnt-electrical odor in the rear cockpit. At the time, I was too absorbed flying the plane and didn't notice any unusual smells. In the flare, I tried to reduce power to idle, but the throttle was already all the way back against the stop, and the torque still was indicating 200 foot-pounds. NATOPS warns, "Torque indications may be erroneous because of reduction-gearbox failure." I used beta upon landing, easily made the first taxiway, and shut down the engine. I finally noticed the electrical odor my copilot had identified during the approach. Our best estimates indicated we were on the ground within five minutes from the time the CHIP light first illuminated.

While we waited for maintainers to drive to the airport, we discussed what went right for us. First, crew coordination could not have been better. With my copilot handling the radio and calling out the procedure, I was free to concentrate on flying the airplane. Declaring the emergency and making the Unicom calls helped greatly. At least one other T-34 heard our call and flew over the airport to make sure we were OK on the ground. A Cessna, inbound to runway 19, stayed clear until we had taxied off the runway. I would have hated to end up beak-to-beak with another airplane when my engine probably would not have allowed a go-around. The landing was smooth and easy in the first 1,000 feet, leaving plenty of room for rollout.

Replaying the flight over in our minds, we realized we had a few signs that could have warned us of the impending failure. None of these by themselves were out of limits, but, when combined, they indicated something bad could happen. During engine start, ITT peaked at 725 degrees Celsius. This is well within limits but a little hotter than normal. While in the landing pattern and simulating low-altitude-power losses, we consistently needed slightly more than 200 foot-pounds to maintain our flight path. We discussed this while in the pattern, but neither of us thought it was a problem—probably a misaligned torque indication. After we climbed to altitude, with maximum torque of 1,015-foot pounds set, every over-the-top-aerobatic maneuver (loop, one-half Cuban eight, and Immelmann) would get slow at the top with rudder shakers. We decided we should have entered the maneuver with more airspeed. Once I felt the vibration, it was obvious something wasn't right. The plane had been trying to warn us in its own subtle way, but we were focused on completing the event and ignored the warnings.

When the mechs arrived about two hours later, we could not freely turn the prop or the air-conditioning belt. Both sections of the engine had seized. Mechs pulled the oil filter and took oil samples for analysis. Instead of being clear oil, it was thick and black, with glittering metal particles throughout. Maintenance changed the engine before that plane flew again.

Lt. Pratt flies with VT-4.

The plane had been trying to warn us in its own subtle way, but we were focused on completing the event and ignored the warnings.

Scotland's Beautiful, But I Don't Want to Be a Permanent Part of It

By Lt. Ingrid Müller

We were in the North Atlantic, flying off the coast of Scotland, in the annual British-run exercise called the Joint Maritime Course (JMC). Our two-plane, three-crew detachment was working around-the-clock ops on USW, ASUW, NGFS, you name it. Our ship successfully had prosecuted submarines, fired missiles, and coordinated air defense. The air department tracked four submarines; spotted and eliminated numerous patrol boats, and conducted a maritime interdiction operation. Our NATO counterparts were impressed with everything, except one helicopter crew.

That crew, when they got in the air, accomplished nothing. They got airborne, they dropped buoys, they streamed the MAD, they got the FLIR, ESM, and radar systems all up and purring like a kitten, and they produced nothing. Nothing! This is the crew who, one night, while working with the Brits more than 100 miles

Photo by Matthew Thomas
Modified by Allan Amen

from the ship, refused to come home until they got some kind of contact. They couldn't go home without at least a sniff of the adversary. Of course, they eventually did go home empty-handed, again. In a word, humiliating.

This was my crew, and our weak performance continued for two weeks. Everyone can understand how frustrated our crew was. We were not bad at our jobs. Heck, we actually got the highest grade for our submarine prosecution at AUTEC during pre-deployment workups. JMC wasn't our time to shine. We had one last flight to show off our stuff before the exercise ended. It was designed to be simple: Go out, find any of the five enemy fast patrol boats (FPBs), and fire on them with our simulated Hellfires and Penguins, our box lunches, or anything else we had.

The northern coast of Scotland is a far cry from the Gulf Stream waters off the coast of Florida where we trained. We were flying in an environment of dense fog, chilly rain, 20 hours of daylight, and temperatures that rarely got above 50 degrees. But we figured, "To hell with the weather, we're going to find us a FPB even if it kills us." Remember that.

We got airborne, and the weather was surprisingly beautiful. We had a full bag and were going 150 knots (anyone who flies 60Bs knows this is quite a feat, so obviously we meant business). We headed toward contacts our ASTAC and sensor operator recommended and flew in low (50 feet off the deck) and fast, using all the tricks they taught us in the FRS. On the way to one of these contacts, we hit a wall of weather, a cloud layer from the water to 600 feet. We had to skip that contact. The next contact also was in the cloud layer and so were the next two contacts after that. We finally found one highly suspicious contact on radar, surrounded by weather,

Photo-composite by Allan Amen

except that, this time, the weather was clear from the water to 100 feet. We bought ourselves a whopping 10 feet of clearance from the goo and flew in at 90 feet. I was at the controls in the right seat, and I felt comfortable, as did the HAC and the aircrewman. We just wanted to kill an FPB.

We headed in at 150 knots, with visibility three-quarters of a mile—sweet weather for Scotland. As we got closer to the contact, the sensor operator gave me updated vectors, and the weather started to deteriorate. We agreed to slow down, to do the night and IMC checklist, and to approach the contact from our left side, so we wouldn't run into any tall masts this contact might have. As the weather got thicker, we had to descend a little more. We were so close, and we weren't going to back off this time. We inched down a few feet at a time, ever closer to our all-but-confirmed kill. Finally, we were upon the contact, and the AW and HAC positively identified it. Of course, it wasn't a ship. My copilot calmly stated, "This is lame; it's just an island. Pretty though, has huge hills."

I responded with, "Oh yeah, I see a rock over there in front of me. Cool. Wait, what did you just say? Something about huge hills?"

Simultaneously, we grabbed the controls, placed the collective firmly in our armpits, and banked hard right. My HAC had a bit of vertigo since she was just looking at the beautiful hills and had to suddenly swap her scan from the side to the instruments, because we were, what else? In the goo.

We stayed IMC until we broke out at 1,800 feet. I was glued to the instruments. To make matters worse, we had to break comms with our controller to descend below the clouds. We were flying around uncontrolled in IMC, but at least there was nobody else in the area. Could that have been because nobody else was dumb, er, brave enough to pull a stunt like that?

We finally broke out and reestablished comms with mother. As we turned inbound toward the ship, our junior crewman declared how much "fun" that was. My copilot and I looked at each other, deciding simultaneously our crewman should be counseled as soon as possible. Then we told him that almost flying into mountains is hell on the nervous system, not fun.

We didn't mind being the crew that got nothing, just as long as we never, never did that again. As a crew, we had decided to go in and identify this guy, but we all knew why we wanted to do it. One of us should have mentally stepped outside and realized we were trying to identify the target for the wrong reasons. Next time, even if we are not together as a team, any one of us will be the voice of reason. That will be all it takes to make sure the next crew doesn't go down in flames because of a little pride.

Lt. Muller flies with HSL-48.

This Isn't Like the Sim at All!

By Lt. Matt Bogue

Many hours of a student's life with the EA-6B FRS are spent in the simulator. After spending much time there and experiencing many situations, I felt comfortable I could handle an emergency when airborne; but I found out on my graduation hop that reality is sometimes different from practice.

After several cancelled attempts at my grad hop, the day finally came. The weather was beautiful, and the low-level route was clear. Plenty of jets were available as spares in the event of a system failure on deck. I was scheduled to fly with the operations officer, who was as eager as I to get the flight done so I could head to the fleet.

We departed Whidbey on runway 25 and began our standard climb-out. As we achieved the minimum airspeed, the pilot began raising the flaps and slats. I noticed the slats moved as usual and appeared to be up, but the IPI indicated a barberpole (unknown or intermediate position). The pilot immediately checked the flaps-slats circuit breaker and confirmed it was popped. We would not be able to lower the flaps normally.

I suggested we try to reset the breaker, and he did. Since multiple resets of a circuit breaker in the EA-6B are not recommended, I was disappointed to learn the breaker had popped again after the reset. I transmitted to ATC our intentions to troubleshoot over Smith Island and opened my pocket checklist. Although this specific emergency involves a rather cumbersome checklist, I felt comfortable I knew what to do, since only a week before I had been exposed to this exact scenario in the simulator. I began to navigate through the checklist, and we discussed our course of action.

In the simulator, the instructor usually will force the student to step 10 of the checklist. This calls for the pilot to begin lowering the flaps electrically. When the flaps reach the 20-degree position, ECMO 1 must reach between his legs and manually pop the emergency-flaps-motor circuit breaker to stop the flaps in a known configuration. In the simulator, it is easy to identify which breaker should be popped. The purpose of this exercise is to verify that the student is capable of executing a complex checklist.

As the Ops O and I continued through the checklist, it became evident to me he was not as comfortable with the emergency procedure as I was. After all, I was the one who had just practiced this scenario. We took our time, and I refreshed his memory on exactly what needed to be done. This requires a very cooperative effort between the crew to appropriately time the pulling of the circuit breaker. Before he actuated the emergency flaps, I reached down to place my fingers on the breaker and to get ready to pull. I soon realized how the sim is different from reality. In the sim, I wore only a flight suit. Now I had all my survival gear on. I lowered my seat as far as it would go and still had difficulty reaching it. After loosening my lap belt and removing my gloves, I could reach the breaker. I told the pilot I was ready, and he actuated the flaps. As the flaps reached the 20-degree position, I pulled on the breaker but to no avail. It took several attempts before the breaker finally popped, but it was too late. I had missed the window of opportunity to get the jet in the best landing configuration. We returned and struggled through the landing.

In the simulator, this breaker is popped several times a day as students practice the emergency. It gets loosened by repeated actuation. It is easy to reach because we don't practice with our flight gear and SV-2.

My lesson learned that day was this: A simulator can only approximate reality. There are factors that we often don't consider when practicing. Remember the adage: Train like you fight, fight like you train. I don't advocate suiting up in full gear for every simulator event, but be aware of the differences it will make.

Lt. Bogue flies with VAQ-131.

Loud Bangs Are Not a Good Thing

By Capt. Todd Kalish, USAF

It was a hot June day as I donned my pressure suit for a local, high-altitude sortie above California. As the life-support crew strapped me in the cockpit, I checked to see where all the switches were in this airplane. No two U-2s on the ramp are identical. They were built one at a time, and they all have their own personalities and quirks. Perhaps more importantly, they tend to make odd noises at inconvenient times. Even with almost 500 hours in the jet, I am still surprised by the noises.

Pressure suits are a unique environment. Wearing it is demanding, both physically and mentally, so many of the normal tasks a pilot does are delegated to others. When you're going on a high flight, another U-2 pilot will preflight the airplane and do the pre-start checklist. All the pilot has to do is turn on the boost pumps and start the engines. There is no hydraulic assist on any of the flight controls, so everything the pilot does is by muscle power. Add warm temperatures and a pressure suit to the equation, and you have a sweat-soaked, dehydrated pilot sitting in the cockpit at the hold short.

As the ground crew buttoned up the airplane, they took the cooling air off of the inertial navigation unit and closed all the hatches. Since every ounce of weight on the U-2 matters, there is no additional cooling unit on the airplane. The INU is very susceptible to overheating. Once the engine is started, the pilot has to help by selecting full-manual cold with the cockpit temperature and by keeping the power up for cooling. Even so, it is still a race against time before the unit overheats and shuts down. Since the day was quite hot, I did just as I was supposed to do and selected full-manual cold.

The U-2 takes a lot of manual effort just to move it on the ground. The tail wheel turns only six degrees, which equates to a 189-foot-turn radius with no wind. You have to take winds

and flight-control positions into account to successfully turn. I quickly taxied to the runway and ran my pre-takeoff checklist, while the ground crew did their last checks. Two important items in the checklist came into play. First, the checklist says to make sure your suit controller, which allows cooling air into the suit, is open only one notch. This does not allow for much air into the suit, but at full power, any more than that will inflate you like the Michelin Man, making control of the aircraft a problem. I checked the controller. The other important item is to make sure the temperature control is in auto to prevent the cockpit from filling with fog. Since I had selected full-manual cold for the taxi out, I reached over and gave the knob two clicks to auto. With everything set and a thumbs up from my mobile safety of flight, I ran her up and headed down the runway. I parked about 32 degrees nose high for the climb out.

Passing 1,000 feet, I heard the cockpit air surging. But hey, there were a lot of strange noises in this airplane. This one just groaned a bit. But as I continued to climb, I noticed it was getting intolerably hot. Having direct sunlight on you while in the pressure suit is like wearing two or three sets of MOPP gear and laying out in the sun. Even so, it shouldn't have been that hot. I glanced down at my cockpit temperature and saw it was pegged at 120 degrees, as high as the gauge would go. It turns out the two clicks I had turned the temperature knob had sent it from full cold, right past auto, to full hot. "Good job, knucklehead," I thought, as I reset it. Passing 10,000 feet, I finally adjusted my suit-cooling knob for more air into the suit. The cabin temperature still was pegged at 120 degrees. Sweat soaked the inside of my suit.

Photo-composite by Allan Amen

I set the autopilot, passing 40,000 feet. I took my hands off and made sure everything was OK before I reached down for my mission board. As I reached down, I heard a loud bang and saw the yoke jump forward and then back. The airplane now had my undivided attention again as I pickled off the autopilot and began to hand-fly the airplane once again.

Something had hit me, I thought, as I grabbed the controls. A bird? No, I was too high for that. Another airplane? No, I probably was too high for that as well. I decided to turn around and head for home. But before I started descending, I tried to figure out what the bang could have been. Maybe a hydraulic line had broken loose and had hit the side of the airplane. I glanced down at the hydraulic gauge, and it was pegged at 3,000 psi, right where it should have been. A minute or so had passed since I first heard the bang, and my pulse rate started to slow once again. My departure took me several miles south before turning me back to the north on my route, so I still was only 50 miles away from Beale AFB. Now that I had climbed through 48,000 feet, I had plenty of altitude to glide back if I needed to.

The damaged horizontal stabilizer.

I decided to see if the autopilot would reengage. This would free my hands to run checklists and to find the problem. The autopilot is temperamental—it uses a loud horn to signal its refusal of your offer to fly the airplane if anything is wrong with the system. I reached down and flipped the switch, and, to my amazement, the autopilot engaged without a peep. I thought that was odd. I was sure whatever had caused that bang would have made the autopilot quit working.

Maybe I had a loose panel under the airplane, and it was hung open. The U-2 has viewsight, which is like a reverse periscope, to see directly under the aircraft. You can move it up to see the bottom of the aircraft and the wings. Looking through the viewsight, I looked over every bit of the airplane but saw nothing unusual. I used the mirrors in and around the cockpit but saw nothing unusual there, either.

Several minutes had passed, and I had found nothing wrong with the airplane. I pickled off the autopilot again, made a couple of turns, and the airplane performed perfectly. “If I go back now,” I thought, “the ground crew will find nothing and write it off to another pilot who heard gremlins.”

This is the point where a hot, dehydrated pilot in a pressure suit starts making bad decisions. Even though I knew better, I started second-guessing myself. I thought, maybe I didn’t hear that loud of a bang. Maybe it was just one of those U-2 noises that caught me by surprise. The airplane is fine, it’s probably nothing. Besides, I’m going to turn south in a few minutes and be close to the base before I head away, so I’ll just wait and see what happens.

Fortunately for me, nothing did happen. The flight controls felt significantly lighter in pitch than I was used to as I hand-flew the airplane down from altitude. I once again dismissed this because I knew the airplane had just been modified with some light servos. I didn’t realize the pitch was supposed to be that light.

When I unstrapped and climbed down the ladder on to the ramp, the crew chief asked me if I’d had a bird strike. I told him no but suggested he show me why he was asking. When we went to the back of the airplane, I could see the left horizontal stab had delaminated over about two-thirds of the surface on the trailing edge. What was once a strong composite material now had the consistency of cardboard. It was a very impressive sight to see, especially considering I had flown several hours with it.

The two sections of the composite material

separated with enough force to tear rivets apart and rip the composite material itself. Only four bolts hold together the aft section of the U-2. Had that stab departed the airplane or started some violent flutter at altitude, I would have gotten to test the ejection seat for my ride home. I wouldn't have particularly cared for a 13-mile free fall.

There were many lessons learned on this flight. First, I thought myself almost impervious to hot-weather ops. I've generally never been bothered by hot-weather ops before. But spending an hour in a pressure suit in late June with temps in the 90s before takeoff will wear on anyone. Also, I have enough experience in this airplane to know a U-2 noise from something that isn't. I talked myself out of doing what I knew was right, which was to come home. From now on, I will pay more attention to keeping myself hydrated and cool before a flight and doing what I know is right.

Capt. Kalish is a former Marine Hornet pilot and now is in the Air Force flying the U-2 with the 99th Reconnaissance Squadron.

ORM Corner

Snakes in the Cockpit

By Lt. Dave Bartell

It was the first night of cruise, and the air wing was getting its carrier qualifications. We launched into a low-overcast-dark sky, with scattered showers. As we pushed from marshal, we descended into the rain and low clouds.

At six miles, an unsolicited master-caution-light illuminated. Multiple sweeps of the cockpit indicated the light had no related emergencies, and since I couldn't reset it, I dismissed it as a bad annunciator panel. We quickly rifled through our gear to find something to dim the master-caution light so I could see the ball. We contined our approach.

We finally taped over the master-caution light and were ready to catch up with the approach inside of tip-over. Then we discovered a bigger problem when I asked my ECMO 1 for windshield air. After 30 seconds, we realized we weren't getting any flow. A quick check of the cockpit circuit breakers did not fix our problem, and I still was closing fast on the ship. The rain really started to pick up, so I began to think that flying the ball (or even seeing the ship for that matter) might be challenging.

We still were in the overcast, and I was hoping that in the next few seconds we'd get the windshield air back or we'd break out and see well enough to land. It was about that time we hit 400 feet and finally came out of the overcast to see every light on the carrier contrasting brightly against the night sky. The windshield was so wet with the rain that all the lights formed an unusable blob. The only thing I could think to tell paddles was clara, and I started to hear the standard glideslope talkdown.

Of course, the light blob continued to get bigger, but I couldn't make out a centerline to line up on. There was a lot of controlled panic and trust in paddles going on in my cockpit as I hung on his every word coming through my headset. Paddles understood I couldn't see anything when I picked up a huge drift left in close. I was relieved to see the light blob turn red on the waveoff.

On the downwind, paddles and I had a few seconds to talk through my emergency, and he did a great job of trying to shore my waning confidence so we could all give it another shot. CATCC then started having its own problems, and the best they could give me was a descent to surveillance minimums. CAG finally weighed in and gave us a well-deserved trip to the beach.

On preflight the next morning, we noticed the bleed-air-isolation-valve switch in the nosewheel-well was turned off. Once it was turned back on, we regained windshield air and had an uneventful shipboard recovery.

A few lessons learned: First, you must know your NATOPS cold. I know that sounds trite, but in the heat of the battle that was our approach, we thought about circuit breakers and other system failures, but no one (including the CATCC rep) thought about the one switch that

Photo-composite by Allan Amen

actually enables the system. It's the kind of mistake you make only once.

Second, we didn't do a good job of conveying the nature of our problem to the LSOs. Everything happened so quickly we didn't have time (or take time) to tell paddles of the snakes in our cockpit. When I finally did get a clara call out, I'm not sure it was enough. We ended with an all-LSO meeting aboard the ship afterward to establish standards in this area. A call of "Clara ship" or "Clara everything" would have made the point. As an LSO, I now hawk line-up much more when I'm on the platform and guys call clara.

Third, I had every opportunity to break off the approach. That would have given me time to get my head in the game and to fix the problems. All of the problems taken individually didn't seem that bad. Together, of course, they almost killed me and a few others. It all comes back to the idea that if you're not happy with how things are going, try to keep the big picture and find yourself a path out.

Aviators live or die by NATOPS. If a procedure is not obvious as you sit in the ready room, it's going to be hard to bring that knowledge out in the heat of battle. Know the tools for survival that you started learning in the training command. The LSOs were there for *me* that night, and I didn't help them out.

Finally, keep your eye on the big picture. In the Prowler, it's simple to take one of the guys out of the details portion of the problem and have him QA your overall plan for the emergency. I had to learn these lessons—all of which have been written in blood. I'm just happy they didn't have to be rewritten in mine.

Lt. Bartell flies with VAQ-129.

WATER-SKIING at 100,000 Pounds

By Lt. Drew Mitchell

Cockpit photo by Matthew J. Thomas
Photo-composite by Allan Amen

I was halfway through my two-and-a-half-year exchange tour with the Dutch Navy, flying P-3s. While their training is based directly on our NATOPS and training procedures, there are some differences. But I had gotten up to speed with the Dutch way of doing things in the aircraft, and life was good.

We were on our way to Curacao, in the Caribbean, from Holland, with an overnight stop in Lajes, Azores. Trading the European winter for New Year's in the Caribbean sounded great to me. The first leg would last about five hours. The weather brief mentioned the possibility of strong crosswinds at Lajes, but how bad could it be?

About two-thirds into the flight, I noticed the No. 4 engine was down to four gallons of oil. The flight engineer said that it had seven gallons at the beginning of the flight. There were no visible leaks and no history of No. 4 consuming oil. We discussed our options: continue to Lajes or turn back to Valkenburg (home plate). According to the weather briefs, Lajes had the better weather. With snow and high winds, Valkenburg had low visibility forecast all day, while Lajes had the possibility of strong crosswinds. At the current rate of oil loss, there would be two gallons of oil left on arrival at Lajes but none left if we turned back to Valkenburg, which would require a three-engine landing if we kept it running. This is something I wanted to avoid doing at night, in bad weather, if there was another option available. The temperature at altitude was well below freezing, so any prolonged shutdown with intent to restart was not a good idea. One of our propeller seals could freeze, causing leakage during a restart and causing more serious problems. We discussed the situation, and I decided to continue to Lajes.

On our initial descent into Lajes, winds at 2,000 feet were from 240 degrees, gusting 50-to 70-knots. At the approach end of the runway, winds were from 230 degrees at 18 knots, with a wet runway. With runway 15 in use, the crosswind was 80 degrees offset. The maximum-crosswind component for the P-3 is 35 knots, and with a wet runway, it goes down to 22.5, and with standing water, it is less than 20 knots. The winds at the middle of the field and departure end were not given. The forecast weather for our alternate, Montijo, Portugal, about two hours away, was gusty winds and thunderstorms for our arrival time. I really wanted to see what the actual conditions were before proceeding to our alternate. We briefed the approach and landing. We discussed crew responsibilities, windshear, crosswind limits, crosswind effect on the aircraft, and go-around options.

At 2,000 feet and 7 miles in light rain, we saw the runway just before intercepting the ILS glide slope. Except for the wind, the weather was better than I expected. We asked approach if there had been any landing traffic so we could get an actual weather report, but with no scheduled flights, the answer was no. There was, however, a civilian 737 taxiing for takeoff, which we took as a sign the wind was as reported on the runway. We continued on a long straight-in. At short final, roughly over the cliff that makes up the approach end of runway 15, we were at 100 feet and, as reported, the wind died down to a manageable crosswind. A five-to seven-degree right wing down and left-rudder input held us nicely on centerline for about four to five seconds. With approach speeds of 138, we were at 145 to 150 knots (extra airspeed for the gusty approach), stabilized at 100 feet (our pre-briefed visual-decision altitude). The moment of truth what should I do? Divert? Go around for a second pass? Land the airplane? I chose the latter option.

Several factors influenced this decision: an unfavorable weather forecast, high winds with rain and thunderstorms forecast at our alternate, and the probability of having to make a three-engine night landing at an unfamiliar and busy

terminal area. Also, my copilot had many flight hours in helicopters but only recently had qualified in the P-3 (the Dutch fly with only two pilots on all crew days less than 12 hours). Everything considered, divert was an unattractive option.

Out the corner of my eye, I could see the 737 was holding short to takeoff. If he thought it's good enough to take off, it's OK to land, right? Being stabilized above the runway at 100 feet and in position to land, the decision to land was easy to make.

I pulled power and entered the flair. We touched down with less than 7,000 feet of runway remaining. I felt relieved; for a few moments. I was pushing forward with right yoke and began to reverse the props, making sure I was below 135 knots to prevent inadvertent pitchlock while moving the power lever from the flight range to the ground range. I looked for four beta lights before using full reverse when, suddenly, a gust of wind hit us from the right. The nose of the plane skewed to the right, getting my full attention. I estimate the nosewheel had been on the ground for three seconds with the full aircraft weight on the wheels. Apparently there was standing water on this part of the runway, along with a lot more crosswind. I began water skiing, courtesy of dynamic hydroplaning, in a 100,000-pound aircraft at about 125 knots. The amount of turn caused by the gust of wind was 40 to 45 degrees: We were heading 190 to 195 degrees on runway 15.

I remember feeling my arm tense as the option to firewall it, get off the ground, and take my chances airborne went through my mind. But, almost as fast, I decided that getting airborne would be asking for even more trouble and opted to stay on the ground.

I said, "Down, right," on the ICS. My copilot, on the yoke, tried to push the nosewheel down to regain some control and to keep the upwind wing forced down. I moved No. 1 and No. 2 power levers to full reverse and No. 3 and No. 4 forward. With the power levers positioned, the four big windmills on the wings immediately took over. Constant-speed propellers were a great thing to have, straightening us out before we hit a dry spot.

Time compression (as well as seeing my life flash before my eyes) makes it hard to guess accurately, but I would say we hydroplaned for six to eight seconds, traveling the better part of 1,000 feet. You haven't lived until you look down the runway centerline out your port window in a 45-degree skid. I had visions of all the cartwheeling airplanes I had seen in movies, which was something I could soon experience.

We came to a stop with the left mainmount on centerline, a little over 1,000 feet of runway remaining and the rest of the flight station (especially me) not believing what had just happened. I set the parking brake on the runway to check for crew injuries or damage to the aircraft, and also to take a deep breath. We looked at each other in silence, which was broken by the control tower giving us permission to taxi and asking us for the braking action. Apparently they hadn't been paying attention to what we had just done. I replied, weakly, "Poor and roger." After a few more seconds, we slowly taxied to the line.

I had visions of all the cartwheeling airplanes I had seen in movies, which was something I could soon experience.

Weather is never something to be taken for granted, especially in a place like Lajes that is known for high winds. Standing water and mid-to-end-runway, wind-condition reports were not given, but then again, I never asked for them. This led to a practical display of dynamic hydroplaning. Even when making the best decisions with the best information available, flight crews still can find themselves pushed into a box. Sometimes this box is not evident until after the fact, and I think that is what happened to me. I could have destroyed one of the Queen's aircraft, instead of having a good story and a couple of new gray hairs.

Lt. Mitchell is an exchange pilot with the Dutch Navy at Det Valkenburg.

Get-to-the-Ship-It is?

Photo by Matthew Thomas
Photo-composite by Allan Amen

LCdr. Scott Mulvania

One month into deployment, my S-3 crew was assigned our first good deal. We were operating in the Adriatic Sea, and I was to fly a passenger to a Greek Air Force Base.

The flight across Greece into Larissa went as planned. We kicked out the passenger and got our 15 minutes of feet-dry. We were on the runway for takeoff, and everything was going too smoothly. The return clearance, filed from the ship, was ready to go, our takeoff clearance was given, and the language barrier with the local controllers was bridged.

The fun began on the departure roll when the No. 1 engine chose to overtemp at 50 knots. The moderate-speed takeoff was aborted, using the full 13,000 feet of runway. This was to prevent overheating the brakes on a 95-degree day. On the taxi back, the crew discussed our options. None of us wanted to blow the first good deal of cruise, so we felt pressure to get back to the ship. The overtemp was still within NATOPS limits. If the motor overtemped again, we could pull back the throttle slightly, as long as we still could achieve minimum fan speed for takeoff. However, we failed to consider two things. First, even though we used the entire runway on our moderate-speed abort, the 95-degree, no-wind day elevated the temperature of our brakes and tires more than we expected. Second, our aborted takeoff awakened nearly 100 birds on this quiet Greek air base.

The Greeks were accommodating for our second takeoff attempt. The throttles were advanced smoothly, and the aircraft was accelerating nicely. Unfortunately, we were not getting the minimum fan speed from the No. 1 motor, but the aircraft was accelerating, and we had a 13,000-foot runway that gave us plenty of fudge factor. While I was in this "Should I stay or should I go" thought process, our airspeed was passing through 100 knots. Those pesky birds were not happy to hear the screaming Hoover disturbing them from their siesta again. One brave soul tried to put an end to the noise and valiantly flew down the intake of my No. 1 engine. Upon seeing the kamikaze, I aborted again, using the entire remaining 9,500 feet of runway. This time we planned on going back to the line, shutting down, inspecting the motor, and talking about our options.

As we passed the fire truck, which was manned and parked at the end of the field, we thought the Greeks sure were nice to follow us back to the line. What we did not know was the tower controller was probably thumbing through his English dictionary trying to find the word for smoke. As we approached the ramp, the aircraft started to pull to the left. We also required more than the normal amount of power to taxi. We knew we would be spending the night for a flat tire. As we exited the aircraft, the starboard tire went flat, too.

The S-3 wheels have an overheat valve, which releases the pressure in the tire at high temperatures. This prevents the tire from exploding. Two aborts, even a slow-speed abort, on a hot day can make these valves release tire pressure.

Make sure you allow time for cooling. Use the ground crew to check brake temperatures after any abort. We were fortunate that the tire failed on the taxiway, instead of the runway. We were able to experience a little Greek culture that evening, instead of giving blood samples and interviews.

LCdr. Mulvania flies with VS-30.

BRAVO Zulu

VT-3

Capt. Robert Noonan

Air Force Capt. Robert Noonan, attached to Training Air Wing Five at NAS Whiting Field, was flying solo in a T-34C as pilot-in-command of Maintenance 511. The flight was a post-maintenance, functional-check flight after an engine change. The profile called for several checks to be performed within dead-engine glide distance of a suitable landing site, followed by point runs at 10,000, 15,000, and 20,000 feet. Capt. Noonan set up for his checks three miles east of the Brewton, Ala., Municipal Airport, for which the Navy has a joint-use agreement.

Upon arriving in the working area, Capt. Noonan noticed the engine was not responding to power-control-lever movement. The engine was at 850 foot-pounds of torque, too high to land. Capt. Noonan completed the uncontrollable, high-power checklist, which called for maneuvering the aircraft to a suitable field and then rapidly securing the engine.

Capt. Noonan then executed a flawless dead-engine glide to a landing at Brewton. The engine was replaced. A subsequent engineering investigation found that the uncontrollable high power was caused by an assembly problem with the engine at the factory. The engine was returned to Pratt and Whitney for warranty replacement.

VAW-117

To prepare for a WestPac 2001 deployment, the crew of Banger 600 was conducting FCLPs at NAS Point Mugu, Calif. Cdr. Rick Pawlowski, the skipper of the Wallbangers, was the aircraft commander and the copilot. Lt. Mike France was the pilot at the controls. Lt. Mark Kempf and Ltjg. Paul Flores were in the CIC compartment waiting for their turns in the pattern. On Lt. France's third pass, at the 45, the aircraft had a sudden, continuous, forceful, nose-down pressure because of a failed elevator bungee. Lt. France added power, pulled back the yoke, regained control of the aircraft and executed a waveoff. Cdr. Pawlowski recognized the severity of the nose-down pressure and assisted Lt. France with the controls. He pushed the autopilot and trim buttons on the yoke to deactivate those features.

Relying on the crew-coordination brief, Lt. France and Cdr. Pawlowski maintained the aircraft direction along the runway to have an option for a long field arrestment. They notified the crew in the CIC compartment and coordinated with the tower and the LSOs. With both pilots exerting backpressure on the controls, they completed all emergency and normal checklists, entered a right downwind, and made an arrested landing on the centerline. The crew later estimated it had required greater than 65 pounds of backpressure on the yoke to compensate for the nose-down pressure.

The material failure of the rudder bungee resulted in full nose-down deflection of the elevator-trim actuator. The crew landed without the primary or the standby trim system. This aircraft malfunction, close to the ground at the end of a flight, required coordination among the crew, ground controllers and paddles to land the aircraft.

Ltjg. Paul Flores, Lt. Mike France, Cdr. Rick Pawlowski, Lt. Mark Kempf

HMH-462

During a functional-check flight out of MCAS Miramar, four miles from the Pacific coast, the aerial observer of Thunder 13, LCpl. Tim Hale, noticed a man in the water waving his arms. LCpl. Hale alerted the crew. The HAC, Capt. Brian Fanning, directed the crew chief, LCpl. Wesley Franklin, and LCpl. Hale to watch the victim as he assumed on-scene-commander duties. The crew saw the victim had on a wetsuit and appeared healthy. The pilot at the controls, 1stLt. Randy Roden, circled the victim at 500 feet and 70 knots. Capt. Fanning radioed Southern California approach, who in turn relayed the information to the Coast Guard. Thunder 13 remained on scene until a Coast Guard SAR aircraft arrived to make the rescue. The victim had been jet skiing when the ski had mechanical trouble and sank. The man had not been reported missing and had been in the water more than 24 hours.

LCpl. Wesley Franklin, LCpl. Tim Hale,
1stLt. Randy Roden, Capt. Brian Fanning

Below Mini

By LtCol. Martin Rollinger, USMC

Here we were, two seasoned naval aviators departing an East Coast Marine Corps Air Station on a Sunday morning for a squadron deployment out west. We filed a stopover flight plan with a fuel stop in Tulsa. I was the flight lead. The departure weather at homeplate was fine. The weather on the first leg was forecast to be nasty, with low ceilings at our emergency divert fields along the way, then clearing as we got to the backside of the storm to the west. The weather in Tulsa was IFR but forecast to be better than 3,000 and three when we arrived.

Technically, we didn't need an alternate, but we planned to use Fort Smith just in case. It was 80 miles short of our destination. The weather there was at minimums but forecast to be VFR by our arrival time. Our fuel planning showed that, even with the slight forecast headwind, we would arrive at Tulsa with enough gas to divert back to Fort Smith.

Ground operations did not go smoothly for my wingman. He was troubleshooting major problems as I sat in marshal for an hour waiting for him. By the time he was ready to go, our fuel states differed by almost 1,000 pounds. You guessed right: I chose to press on, instead of asking for gas because that would have delayed us further. I would not have enough gas at the destination to fly back to the divert base. But, the divert field was this side of the destination. Besides, we legally didn't even need a divert.

Takeoff, climb out, and level off were normal. Wow, the weather looked nasty below us. We checked the winds. OK, just a few more knots than forecast. What speed should I have flown? A quick look at FPAS (the Hornet's flight-performance advisory system) and I started flying the mach number given for maximum range.

The plot then thickened. I recalled that I was carrying MERs (multiple ejector racks, which produce lots of drag) and not the Mk-82 bombs the stores-management system (SMS) thought I had on board. The ordnance personnel had entered the incorrect ordnance code into the SMS, and I hadn't entered the proper code during preflight. So, FPAS was lying to me—garbage in, garbage out. It wasn't going to help me get the maximum fuel performance

FA-18 photo by PH2 Shane McCoy
Photo-composite by Patricia Eaton

out of my jet, nor was it going to give me an accurate reading of how much fuel I would have at my destination. It would be overestimating fuel remaining at destination. I would have to figure all the fuel numbers manually, which is not common in a Hornet.

The flight-level winds started picking up. I was unable to make it to Tulsa with minimum-on-deck fuel and started looking at other alternatives. We called Columbus, Mississippi Metro. "Update me on Fort Smith," I asked.

"Fort Smith is currently five hundred and two," they replied.

Now below minimums. Fort Smith was getting worse, instead of better. Would it clear in time? We kept looking.

"Columbus, how's your weather?" I asked.

"Weather is bad here, and we don't open for another fifty minutes," they replied.

That didn't help. What about Millington? Disregard. I only had high approach plates, and Millington wasn't listed in them. How about Little Rock? Weather there was below minimums, and they don't have a high approach, either.

Talk about a rock and a hard place! I didn't have the gas to turn around. The emergency diverts were unavailable along the route because of weather and operating hours. I couldn't safely make my destination into this headwind, and my alternate hadn't cleared as forecast. I remained calm and stayed focused. The answer was coming. How were the winds? Still bad.

"Center, we need to re-file and change our destination to Fort Smith Municipal," I called.

"Weather is bad here, and we don't open for another fifty minutes," they replied.

My wingman had enough gas to shoot the approach at Fort Smith and go on to Tulsa if needed. I didn't have the gas, and I was committed now.

One last weather update. "Fort Smith, six hundred and two." One hundred feet below TACAN minimums. I wished I had a civilian ILS in this plane. I couldn't legally do this, but I had no choice. What about the ASR? ASR minimums were the same, so that didn't help. What if I shot the approach from the other direction? Minimums were still the same.

We briefed that I would shoot my first ASR approach to minimums, and, if I could see the earth under me, I would cheat down until I could see the field. If I didn't see the earth, I would try another approach and cheat even without seeing the earth. I backed up the ASR approach with the TACAN and Hornet air-to-ground radar (a radar map of the approach end of the airfield that aids in finding the landing environment, commonly referred to as a Hornet approach). As I leveled at 1,000 feet MSL (500 feet AGL) I could see the ground. As I let myself down to 900 feet, I was able to see the runway and land.

Lessons re-learned: (1) Take the extra gas, you might just need it; (2) Turn around while you still can; 3) Carry the low approach plates for the area you are flying over; (4) Hornet guys—make sure that all stores are properly identified in the SMS to get accurate information from FPAS airborne; (5) The FA-18 needs a precision-approach capability, other than PAR, that is compatible with civilian facilities.

LtCol. Rollinger is currently the XO of VMFA-312.

the ILS, and Yokota offered us the visual. They told us to turn back over the water, descend to 1,500 feet, and come in under the ceiling. We thought that was a decent plan, since it looked fairly clear below the clouds.

The ceiling was dropping, and the cells were increasing in size and intensity. At seven to eight miles inbound, we got as low as 1,000 feet. Losing sight of the ground, we cried uncle. Doug told Yokota we were unable to maintain VMC and requested another approach and an initial steer. Yokota picked us up again and gave us a heading while we were figuring out what plan C was going to be.

Our radar now was filling up with red. Doug recommended we shoot the TACAN to runway 01, because the final approach course was offset from runway centerline by 13 degrees and might keep us clear of the weather cell blocking the ILS course. And if that didn't work, we would divert to Yokota or hold over the water until the weather got better. Yokota cleared us direct to the IAF for the TACAN approach, and then the fun really began.

Doug gave me an initial steer, saying, "Come right" for my so-called point-to-point. We were getting bounced around hard. I was working to stay plus or minus 300 feet from the assigned altitude because of the up-and-down drafts. The detachment guys in the back were throwing up and asking when we were going to land.

Doug again told me to come right. I started to turn and then went back to my original heading. Doug took off the gloves and said, "Hooter, where the hell are you going? You need to come right to this heading now! What are you looking at?"

I told him I was looking at the No. 1 needle which was selected to the…duh…I still was set up for the ILS! I hadn't switched my needles over to TACAN. What a bonehead, T-34-student mistake. After switching needles, things made much more sense. Doug started to sound friendlier.

As we turned onto final-approach course, my CDI said I was slightly right of course while my No. 2 needle said I was slightly left of course. I chose the needle and continued down to minimums, skirting the bottom of the ceiling. At the missed-approach point, we still couldn't see the field. As Doug was about to tell me to go missed approach, I saw lights out of the corner of my eye. After we agreed that was the runway, I made an aggressive left turn to get on centerline, back to the right, and landed about 1,000 feet down the runway, which had standing water. After a little hydroplaning, a little braking, and a lot of reverse thrust, we landed. After having worked my tailhook off for 30 minutes, we were home.

I wonder what would have happened had Doug not been there. What if my copilot had been a nugget? Would he have helped me that much? Would he have been assertive enough to yell at me or even question me? Would we have had the confidence in each other as Doug and I had?

At the time of this incident, LCdrs. Crawford and McQuillen were assigned to VRC-30, Det 1. LCdr. Crawford is now a SELRES with VR-57, and LCdr. McQuillen flies with VR-59.

Analyst comment: Certainly, the aircrew's confidence in each other (stemming from their long association) contributed to their decisions in the cockpit and their actions with regard to each other. In answering the questions posed in the last paragraph, it is important to take away from this that "trans-gradient cockpit authority" (a barrier to communication existing in a junior-senior or aggressive-passive crew relationship) can exist in multi-crew aircraft, but it need not. For the nuggets out there: if you are uncomfortable with a situation, speak up.—Cdr. Deke Forbes, carrier-aircraft-branch head and E-2/C-2 analyst, Naval Safety Center.

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By Lt. Ward Carroll

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Truly superior pilots are those who use their superior judgment to avoid those situations where they might have to use their superior skills.

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Photo by Matthew Thomas