THE NAVY & MARINE CORPS AVIATION SAFETY MAGAZINE

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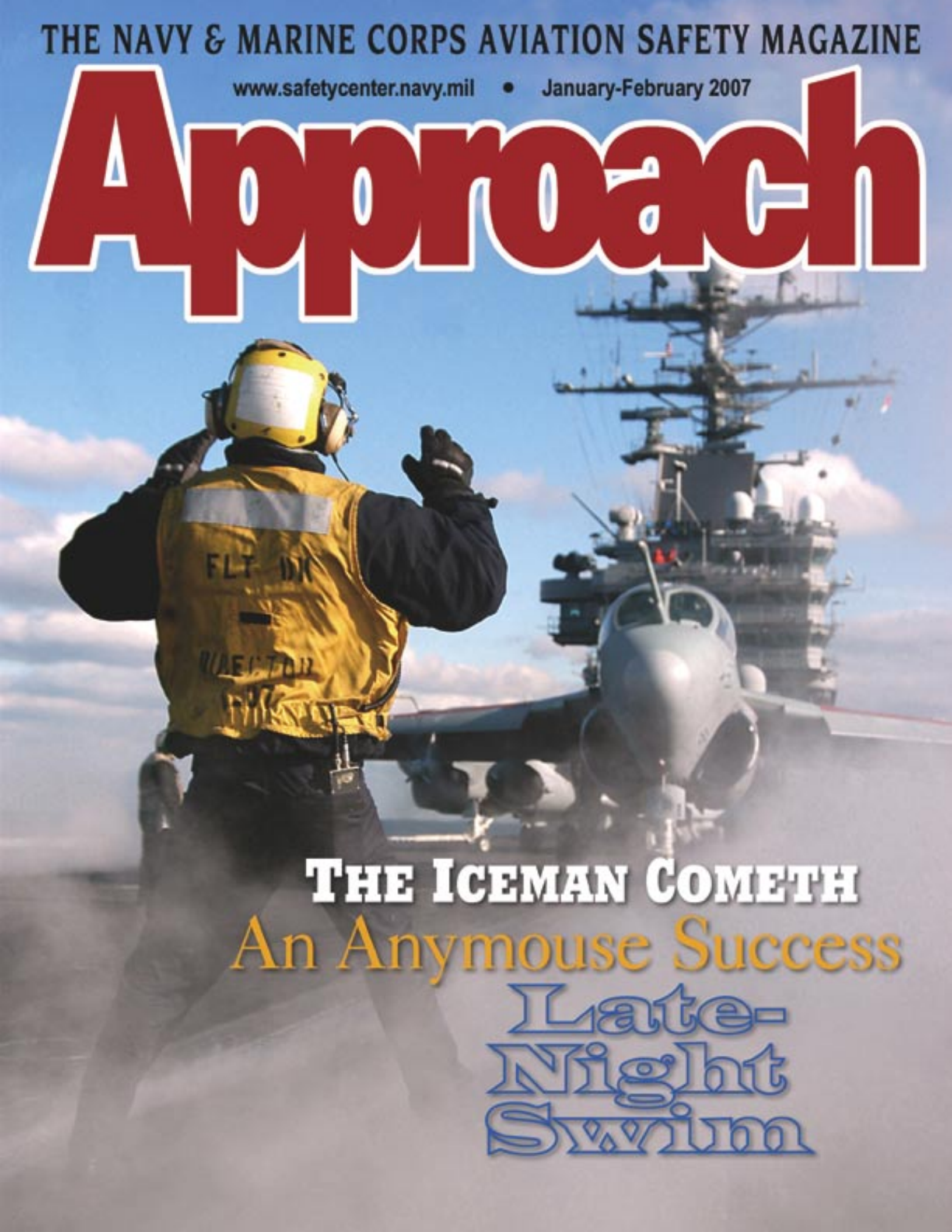
Approach



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An Anymouse Success

Late-Night Swim

The Navy & Marine Corps Aviation Safety Magazine
January-February 2007, Volume 52 No. 1

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. Combat is hazardous enough; the time to learn to do a job right is before combat starts.

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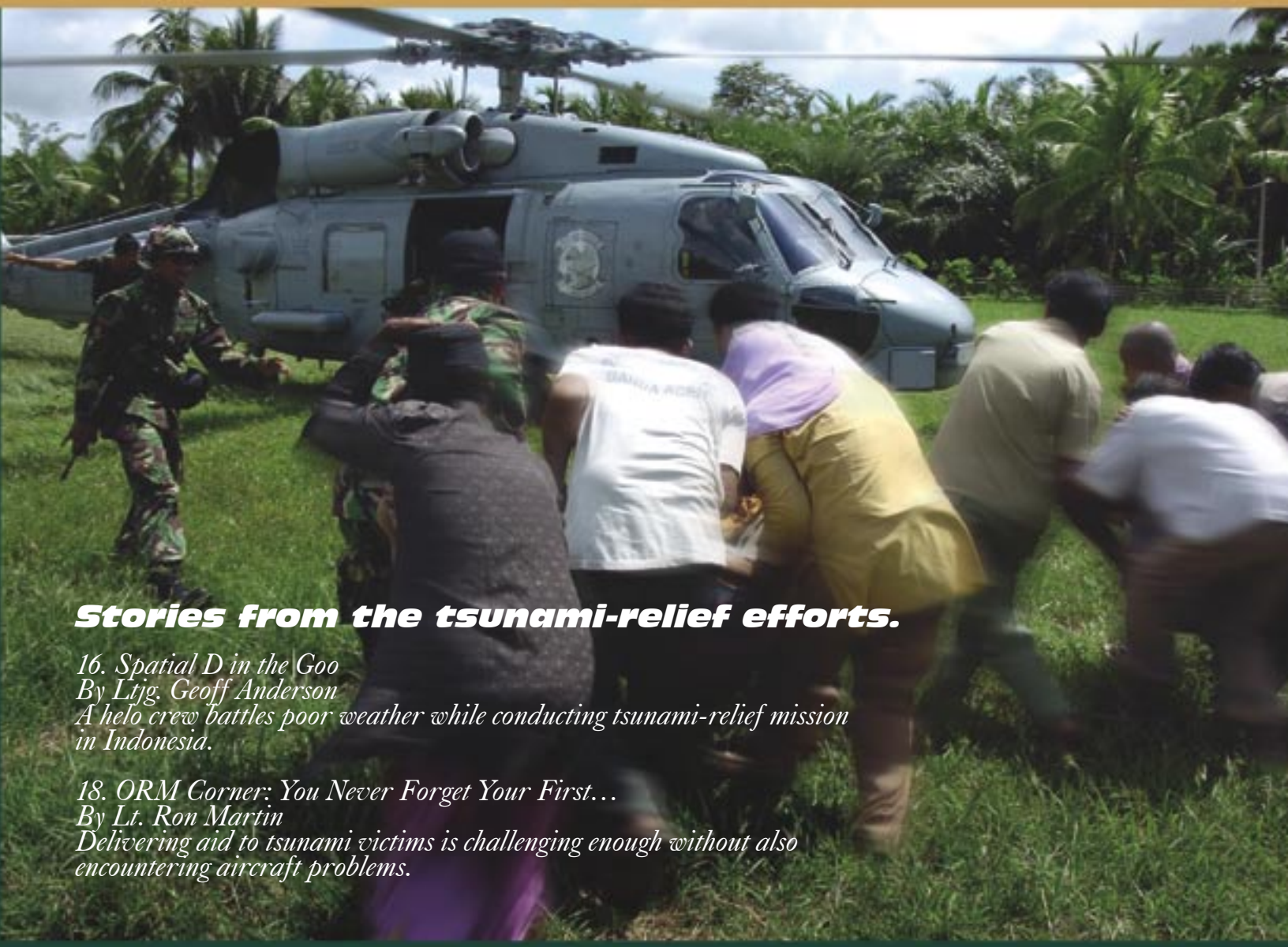
CONT

Features

Departments

Front cover: Aviation Boatswains Mate Airman Jorge Font from San Sebastian, Puerto Rico, signals an EA-6B Prowler pilot, assigned to VAQ-140, onto a catapult aboard USS *George Washington* (CVN 73).

ENTS



Stories from the tsunami-relief efforts.

January-February Thanks

Thanks for helping with this issue…

LCdr. Steven Barr, VFA-151
LCdr. Will Potts, VAQ-141
Ltjg. Aaron Schaub, HSC-25
Capt. Nathan Marvel, USMC, HMLA-267
LCDr. Jim Coogan, VR-56
Lt. Charles Chmielak, HS-11
Maj. Tim Boettcher, USMC, VMFA-115
Capt. James Mullin, USMC, HMM-265
LCdr. Billy Fraser, VAQ-136
Capt. Nathan Marvel, USMC, HMLA-267
LtCol. Jon MacCartney, USMC, NSC
LCdr. John Ruane, NSC

The Initial Approach Fix

A NEW YEAR'S WISH LIST FROM CAPT. KEN NEUBAUER,
DIRECTOR, AVIATION SAFETY PROGRAMS, NAVAL SAFETY CENTER.

Dear Santa:

Now that the holidays are over, I hope this finds you well and recovering from this latest grueling mission of winter happiness. Congratulations on another year of mishap-free airborne deliveries.

It continues to amaze me that year in and year out, in all kinds of weather, at night, you maintain a level of performance and safety that is the envy of the aviation world. Granted this year was not the hardest, what with moon cycle providing near ideal illumination, and limited need for your RUDOLPH (Reindeer Utility Device – Obscuration Level Penetration Heightening) due to good visibility around the world. Still, the controls you have in place to manage the risks and fatigue inherent to your hypersonic, 24-hour solo mission are working. I have to assume you have Internet connectivity in this age of wi-fi. If possible, I would love to put your risk assessment and planning template on our "Best Practices" web page. I know some of the Blue Threats you face are unique, such as inclined landing zones and varied quality of reindeer fuel, but, I have little doubt your ORM examples (Blue Threat tactics) would greatly benefit naval aviation.

As you know, I always like to get my wish list to you early. This year, my list is a little different. You see, after 27 years in the uniform of our country, it's time to hang up the ol' flight jacket, move on to the next phase of life, and (I hope) get some use out of that new driver you put under my tree. My wishes for Christmas 2007 aren't for me. My family is healthy and thriving, the Navy has left me feeling like I have accomplished something very worthwhile—what more could a guy want?

Five years ago, my professional life changed. I remember the morning my detailer told me, "Nubs, you know that choice of orders I had for you? Well, we need you to take the reigns of the School of Aviation Safety in Monterey." Man, I love detailers.

I never did lower my handicap. But I realized a professional passion: the quest to change naval aviation. I got a chance to influence the thinking of every future Navy and Marine Corps squadron skipper—and therefore, every future aviation flag officer—for three years. The subjects: professional excellence, saving aircraft, and saving lives. The focus: risk management, culture, and leadership. The end result: TBD.

My quest eventually led to Pensacola and, ultimately, to Norfolk and the Naval Safety Center (but you know that, Santa—you had to keep track of my changes of address.)

My quest ends in a few weeks, but the job is not done. We still don't have a mishap-free Navy and Marine Corps team. So, I have five wishes for next year, and I hope you can give them in bulk to the great Americans who are naval aviation. The requests by themselves are simple, but, like anything in the safety world, it's not the tool, but what you do with it that counts.

A **"Tell Me a Story: The Recordable Storybook"** for each squadron. Parents use these to record

themselves reading books to their kids for when they will be away on travel. They would be a great way for squadrons to archive the things their people learn the hard way, so they can pass on knowledge to those who are just checking in or learning a new job. You know, the events that make you say, "Man, was I lucky!" or "Boy, was I stupid!" I have two pages of one-liners describing brief encounters with the Grim Reaper from which I was able to execute a bug-out. I think I wrote to you about the time I diverted after trying to penetrate "light thundershowers," and the one where my mighty Tomcat tried whispering "please don't fly me" on the runway, which led to landing at 200 knots with the wings all the way back. We all have those stories.

The instructions would read as follows: 1. Think of a situation you experienced that you wish someone would have warned you about. 2. Push the red button labeled "record." 3. Replay for someone who will be faced with a similar situation in the future. 4. Set the "reminder timer" for two weeks—sooner if desired.

Yes, this is just plain ol' Leadership 101. But some of us, me included, need a reminder of what we should be doing in the midst of being all wrapped up in the "crisis of the moment."

A **"Rock-A-Bye-Baby Alarm Clock"** for everyone, especially senior leaders (folks my age, plus or minus). The standard Rock-A-Bye-Baby Alarm Clock not only tells you when to wake up, it also tells you when to go to sleep. I thought about asking for a 26-hour day, but decided that the folks in the fleet would work for 22 of those 26 hours, anyway. They'd still be up doing paperwork, building one more briefing slide, or trying to finish that 56-day inspection early. So I figure the only way to get our people the proper rest, the kind that promotes good decisions, eliminates the irritability that ravages command climates, and arms our people with the key weapons to reduce errors, is to give them a toy that makes them quit working and go to bed.

Here are the instructions mine came with: 1. Set alarm for the desired wake-up time. 2. Go to sleep. 3. When alarm sounds, hit the "awake" button. Alarm clock will reset automatically to sound 16 hours later. 4. When "sleep alarm" sounds, go to bed. 5. If required, hit the "overtime" button, to give you an additional hour of activity.

Please include the following with the clock. "WARNING: The wake button only can be used one time per 24-hour period. The alarm will not silence until seated in the clock cradle, the owner has entered the personal sleep code, and the weight-on-mattress switch has been satisfied. Any adjustment to sleep routine requires concurrence by command flight surgeon and commanding officer."

Santa, we are tired. We are heinous violators of the biological mandate for eight hours of sleep. To us, rest is for the weak. So we laugh at mistakes we make, and chalk up mistakes caused by fatigue to complacency, task saturation, and loss of situational awareness. Hopefully, these Rock-A-Bye-Baby Alarm Clocks will remind us that working while sleep deprived is worse than working under the influence of several frosty beverages.

"The Bottomless Cookie Jar" by Acme. I know, the last thing we need in naval aviation is more cookies, especially aboard the aircraft carriers. However, Santa, this is the empty and bottomless cookie jar I told you about. The one you use to save quarters for a rainy day. What we need to inspire us to get to the next level of mishap reduction, the next level of excellence, are incentives. We don't have powerful safety incentives right now.

In the Navy I grew up in, if you lost an aircraft, you just got another one. If you damaged parts, you got more, regardless of how they got damaged. With this new cookie jar, if a squadron avoids mishaps, they bank the savings. Then, when they need flight gear, for example, or money for travel and training, they just reach into the cookie jar.

The average cost for a Class A mishap is upwards of $38 million—and that is just for the equipment. Think about the time spent by our people to investigate the mishap, salvage and fix the aircraft, medical and

insurance costs. This time and money should go toward better preparing our people to perform their missions, or to prepare them for life in and after the Navy. We need incentives to save, other than our integrity.

Here's how it works: 1. For every dollar the Navy saves in comparison to the FY02 baseline of losses, a matching dollar goes in "The Bottomless Cookie Jar." 2. Squadrons submit requests for financial augmentation to the cookie-jar fund, describing the savings realized over the previous year, or an initiative they implemented that will continue to prevent losses. This gift will keep on giving.

The Courage Badge (Blue for Navy, green for Marines). Remember what the Wizard of Oz gave the cowardly lion? A medal that said "Courage" to remind him that he was brave enough to always do the right thing. Each of our folks needs one of these to wear at all times.

I suggest a flashy medallion for dress uniform, soft Velcro version for flight-line ops, and fashionable mini-badges for civilian attire. It will remind us that when we observe, or think about doing something that is counter to procedures or common sense, we all need to stop and rethink. We need to take the extra moment to review and follow procedures, to get the manual even if it isn't "convenient," and to stop our shipmates when they are about to do something stupid.

The latest Courage Badge available on the Internet has a cool new feature. With the touch of a button, it signals a central database about a lapse or violation. This feature allows the wearer to send, via Bluetooth technology, a report of the incident up to two minutes in length (anonymously if desired).

This device is simple to use: 1. Touch badge when abnormal incident or unauthorized procedure is considered or observed. 2. Speak details clearly into badge. That's it. The difficulty is that you can trick it. Leaders still need to encourage and support their people using the badge.

Finally, an **"I Believe" Desk Plaque for Leaders**. I know you stock this because my wife has one. It has a likeness of you, Santa, leaning on block letters that spell "I Believe." There are no instructions with this simple gift. It simply reminds leaders that even when the optempo gets hectic and when the press is on, safety matters, procedures work, supervision reduces errors, and reporting incidents prevents future incidents.

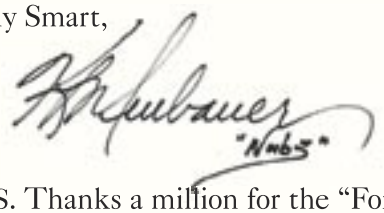
Some leaders already get it. Three in particular, who I admire are BGen. John "Dog" Davis, Capt. Steve "Moose" Laukaitis, and Capt. Bill "Size" Sizemore. These three leaders made safety a vital part of their operational ethic. They stood before their people and demanded a loss-intolerant mindset. They believe excelling in the tactical arena and in maintaining our potent weapons systems is what we are all about. But, what separates the great from the good is doing it without breaking things or hurting people. They are willing to stand up and say, "I know things go wrong on occasion. We will make mistakes. I have and will again. I need you to tell me and your shipmates about the errors that do and will occur, so we can correct them and do a better job controlling the risk these mistakes bring."

Leaders like these establish climates and build cultures of excellence that make safety and risk management "just the way things are done around here." If we are reminded daily, perhaps all of us will believe as they do.

Well, Santa, I know this is a lot to ask as I step out the door. But most of the people who are naval aviation must be on your "Nice List" for all they do for our nation. OK, almost all. Even those who are on the "Naughty List" are trying, and these gifts will help them kick-it-up-a-notch and get on your good side next year.

Thanks for all you do each holiday season. Keep the reindeer well fed and fit, make sure the elves follow procedures and don't cut corners, and, most of all, make sure you are rested before your vital mission. We need you to be around to reengage for years to come.

Fly Smart,



PS. Thanks a million for the "Fore! Warning," the Errant Golf Ball Alert System. I may not be able to control my hook, but now the foursomes in front of me will be a lot safer.

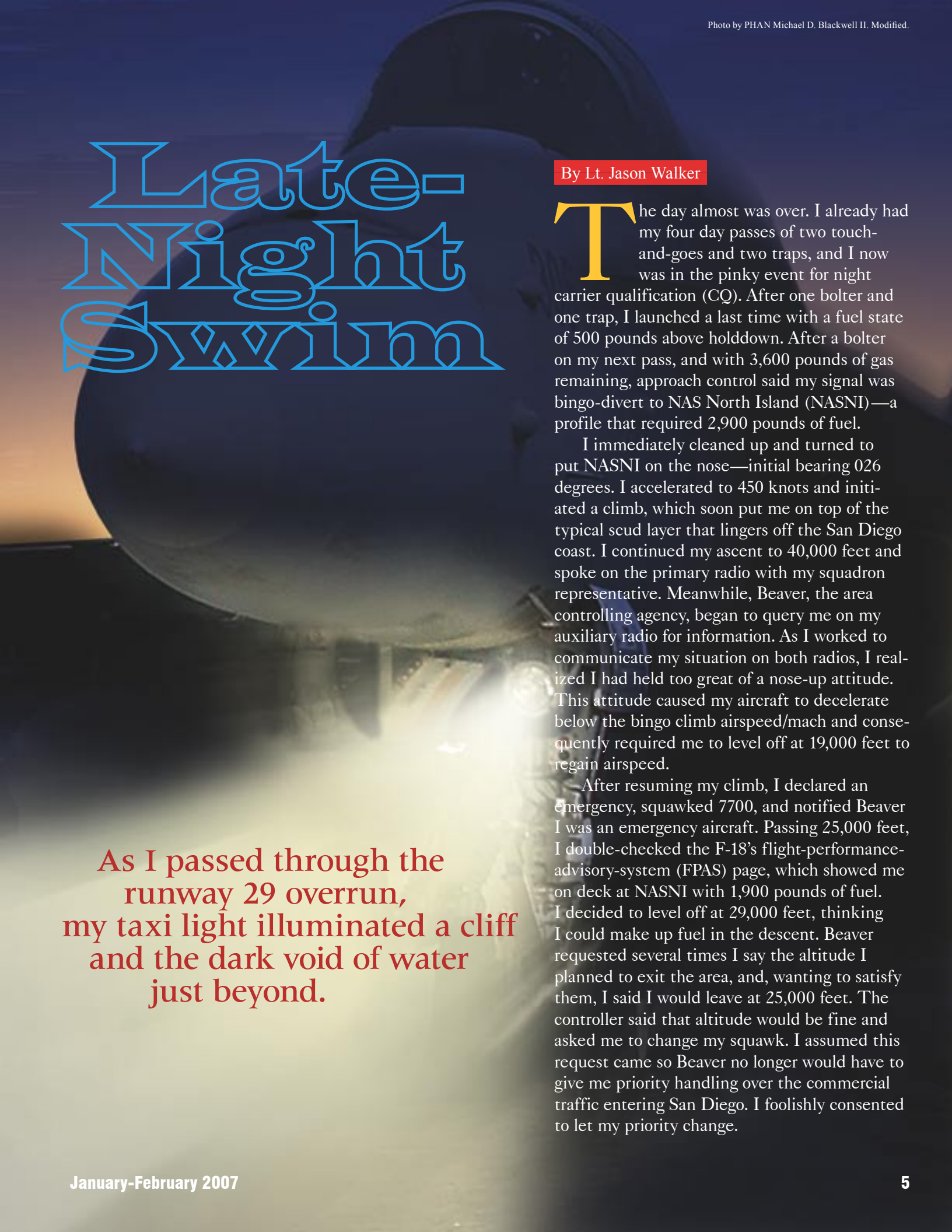


Photo by PHAN Michael D. Blackwell II. Modified.

Late-Night Swim

By Lt. Jason Walker

The day almost was over. I already had my four day passes of two touch-and-goes and two traps, and I now was in the pinky event for night carrier qualification (CQ). After one bolter and one trap, I launched a last time with a fuel state of 500 pounds above holddown. After a bolter on my next pass, and with 3,600 pounds of gas remaining, approach control said my signal was bingo-divert to NAS North Island (NASNI)—a profile that required 2,900 pounds of fuel.

I immediately cleaned up and turned to put NASNI on the nose—initial bearing 026 degrees. I accelerated to 450 knots and initiated a climb, which soon put me on top of the typical scud layer that lingers off the San Diego coast. I continued my ascent to 40,000 feet and spoke on the primary radio with my squadron representative. Meanwhile, Beaver, the area controlling agency, began to query me on my auxiliary radio for information. As I worked to communicate my situation on both radios, I realized I had held too great of a nose-up attitude. This attitude caused my aircraft to decelerate below the bingo climb airspeed/mach and consequently required me to level off at 19,000 feet to regain airspeed.

After resuming my climb, I declared an emergency, squawked 7700, and notified Beaver I was an emergency aircraft. Passing 25,000 feet, I double-checked the F-18's flight-performance-advisory-system (FPAS) page, which showed me on deck at NASNI with 1,900 pounds of fuel. I decided to level off at 29,000 feet, thinking I could make up fuel in the descent. Beaver requested several times I say the altitude I planned to exit the area, and, wanting to satisfy them, I said I would leave at 25,000 feet. The controller said that altitude would be fine and asked me to change my squawk. I assumed this request came so Beaver no longer would have to give me priority handling over the commercial traffic entering San Diego. I foolishly consented to let my priority change.

As I passed through the runway 29 overrun, my taxi light illuminated a cliff and the dark void of water just beyond.

As Beaver pushed me to SoCal approach control, I ran through the ship-to-shore checklist in my cockpit. Runway 36/18 was out of service at NASNI, so SoCal immediately gave me a vector for a PAR approach to runway 29. I continued a gentle descent, hoping to conserve fuel, but I soon realized I was setting up for an extremely steep approach if I quickly didn't lose some altitude.

With my speedbrake deployed and pushing the minute-to-live rule, I made it down to my assigned altitude. I lined up for the approach just as SoCal switched me to the NASNI final controller. His initial calls said I was "well right of course," which was confusing, because I could see the runway straight ahead, aligned perfectly off my nose.

My controller began to pass instructions about noise-abatement procedures, and I suddenly recalled the divert lecture our squadron had received on NASNI: The final-approach corridor was offset from runway 29 by eight degrees to the left. Looking out, I saw the famous Hotel Del Coronado dead ahead, along with a number of other apartment buildings along the Coronado coastline; I decided to make a quick jog to the left to avoid them. Once past the buildings, I returned to runway centerline and received the call that I was "well above glide slope." This information was disheartening, to say the least, considering I had not heard any previous glide-slope calls from my controller. With the runway in sight, I immediately pushed over and set the velocity vector four-degrees down on the landing environment, establishing a 1,000-to-1,200-feet-per-minute rate of descent. Although I had sight of the landing area and the instrument-approach markings at the end of the runway, I could not see the fresnel lens, which I knew had to be there somewhere.

Upon reaching about half the pedal depression, I realized something was not right.

While on short final, I double-checked my velocity vector was set on the captain's bars, roughly 500 to 1,000 feet down the runway. However, once I saw the familiar airfield markings, I unconsciously became complacent and gave up looking for the ball. Continuing with my steep approach, I never did achieve a three-degree glide slope and subsequently touched down with an 800-to-900-feet-per-minute rate of descent. I landed, pulled the throttles to idle, and programmed in aft stick as the jet decelerated through 100 knots. I also checked my brakes and felt what I thought was a solid lurch of the jet when I applied pressure to the pedals.

Approach told me to switch to tower; I momentarily looked down to scan for their frequency on the approach plate. I quickly decided against searching for the frequency. Feeling like I had lost track of time, I looked back up and immediately got the sensation I was going way too fast. I began to slowly apply brake pressure. Upon reaching about half the pedal depression, I realized something was not right. I released the brakes and tried again, but still nothing happened. As panic began to creep in, I stood on the brakes, and got the same result. My throttles were at idle, my speed brake was out, and my anti-skid switch was on. My mind raced to determine why I wasn't stopping.

Seeing the red runway-end lights fast approaching, and with no distance-remaining markers in front of me, I threw down the hook. As soon as I dropped it, the wire came into view. I was hoping and praying the hook would get down in time, but a voice in my head was saying "no chance."

After making sure my nosewheel steering was engaged, I briefly considered taking a high-speed turnoff but quickly realized I was going way too fast. I was roughly 600 to 700 feet from the end of the runway and still traveling at 60 to 70 knots when I reached for the emergency-brake handle. I couldn't find it. Seeing the runway-end lights racing up at me, I screamed into my mask as my left hand continued to fumble for the brake handle. As I passed through the runway 29 overrun, my taxi light illuminated a cliff and the dark void of water just beyond. I had not even thought of the ejection handle until this point, but, as the water got closer, I quickly grabbed it with both hands.

I pulled the handle and heard a zip as the charges fired through the seat. I then saw the flash of the canopy blowing off, while my cockpit filled with smoke. I remember seeing a large fireball erupt around me as the main rockets in the seat fired, pushing me down with a significant rush of G's and launching me up into the black abyss of the night. I quickly was pulled out of my seat, and I looked up to find a good chute. Grabbing

the risers, I got about one-and-one-half swings before hitting the water and submerging.

When I finally reached the surface, I managed to remove my mask and heard the flotation devices on my harness inflating. I began to back away from the parachute when I realized my leg restraints and kneeboard, which amazingly still were attached but were hung up on the parachute lines. I cleared myself of the lines, only to discover my left Koch fitting still was attached. The parachute was being dragged by the current and was sinking, taking me along with it. The inflated LPU was restricting my access to the Koch fitting. I eventually released it, freeing myself from the tangled mass. I was in the water for about five minutes before crewmen in a Coast Guard zodiac rescued me.

After a thorough investigation, the aviation-mishap board determined I lost my normal anti-skid braking because of a transducer-circuit failure. The transducer is located in the aft portion of the brake hub and has a wire protruding from it that is adjacent to the aft wheel tie-down point. Because of its proximity to the tie down, the transducer on my aircraft had become damaged during flight-deck operations.

As background, the anti-skid transducer's purpose is to monitor the anti-skid system and completely shut it off should the anti-skid fail or the brakes lock up. With the switch on, all braking is lost should a transducer failure occur. The easy fix is to simply turn off the anti-skid switch, which will provide full braking without anti-skid. This failure is quite common during shipboard ops, with more than 19 confirmed cases of this failure in the FA-18. The failure can be recognized by a cockpit anti-skid caution and an MSP code of 907 or 908 (left/right anti-skid, transducer-circuit failure). The night of my mishap, the deployable-flight-accident-recording system (DFIRS) noted an anti-skid caution illuminating about one second after touchdown, but I do not remember seeing or hearing that caution.

In retrospect, I should have taken a different course of action the instant I realized the brakes were not working. There were several actions to choose from. First, I could have gone around and come back for an arrested landing. The Hornet can get airborne with as little as 1,000 feet of runway remaining, and I certainly had that much concrete in front of me when I realized my brakes were gone. Second, once I did decide to keep the jet on the runway, my priorities should have been to select emergency brakes, not check my throttles and put out the speed brake. Finally, I let myself get distracted; I was wondering why I was having this braking problem instead of reacting to the emergency. Once I knew I had the runway made, I allowed myself to become complacent. I no longer was ready to handle, with split-second precision, any problem or emergency that might arise.

The administrative portion of flight is where most mishaps occur. We must continue to aviate, navigate and communicate until the aircraft is stopped. While NATOPS is our guiding publication and must be followed to the letter, it "is not a substitute for sound judgment." Many situations can arise that NATOPS explicitly will not cover; so, we must rely on experience—ours and that of others. The information that comes out of SIRs, hazreps and publications, such as this one, are there to help you deal with compound emergencies or situations others have faced. Study them, break them down, and talk about them within your ready room.

Aviators gain invaluable experience by traveling to unfamiliar fields. Cross-countries, out-and-ins, and detachments are essential to becoming a better, more experienced pilot. Studying your divert fields also is essential to preflight planning. Destination information, including runway lengths, arresting gear location, obstacles, procedures, emergency-safe and minimum-safe altitudes, and field lighting is information you must be armed with before walking to your aircraft.

Preflight planning also includes knowing your aircraft's performance characteristics. An FA-18, at landing weight and with two good engines in max afterburner (AB), still can take off from a stop in less than 1,500 feet. On average, E-28 gear is 1,500 feet from the end of the runway. The obvious take-away here is if you are trying to take the long-field gear and miss the wire, do not be afraid to take it around. Know your line speeds and maintain a good inside-outside scan of your instrument and the distance-remaining markers while on landing rollout. A line speed of double the distance-remaining board is a good rule of thumb for the Hornet (for example, no greater than 80 knots at the four board and 60 knots at the three board).

Never let anyone talk you into doing something that is against your best judgment, no matter how persistent or distracting they may be. Take charge and use the good headwork that you have developed as a naval aviator. If you are told to bingo, fly the profile, no matter how much excess gas you have.

Lt. Walker flies with VFA-151.

Situational Awareness
Assertiveness
Decision Making
Communication
Leadership
Adaptability/Flexibility
Mission Analysis

CRM Contacts:

CRM Instructional Model Manager
NASC Pensacola, Fla.
(850) 452-2088 (DSN 922)
https://wwwnt.cnet.navy.mil/crm/

LCdr. Deborah White, Naval Safety Center
(757) 444-3520, Ext.7231 (DSN 564)
deborah.j.white@navy.mil

Batter Up!

By LCdr. John W. Hewitt

This article is not about baseball. In fact, nothing closely resembling baseball is in this article. But the best word to encapsulate what our crew experienced during a recent spring day in Southern California, is a baseball "strike." As you read on, you will see that our E-2 crew went well beyond strike three, and we still were at bat—not a very comfortable feeling. Batter up!

Our flight off the boat during a recent TSTA (tailored-ships-training availability) started well enough. Our Hawkeye crew was scheduled as a triple cycle to control two sections of Hornets for AIC (air-intercept control) on the first event, drop into Point Mugu for a parts run on the second event, and then conduct more AIC on the third event. The flight was a little out of the ordinary, given the stop in Point Mugu. We saw this event as a chance to get off the boat for a few hours.

The first strike against us occurred soon after the cat stroke, when the pilot tried to raise the gear. The master caution illuminated, with an associated tow-link light. Our aircraft had a history of a stuck tow-link microswitch, which, if stuck, gives a false indication of tow-link and/or nosewheel position. We spoke to our rep, inspected the nose gear and tow-link through a small window above the wheelwell, and saw they were straight and retracted. We concluded this problem was yet another stuck microswitch, so we raised the gear, saw the tow-link light extinguish, and then proceeded on our mission. Strike one.

The first event progressed rather smoothly. The AIC was good, the aircraft seemed to be operating normally, and our timing was working out very nicely to stop in Point Mugu. Our pilots positioned the aircraft so that, as soon as we finished our AIC, we were

Photo by PH3 Dusty Howell

overhead Point Mugu. We were on deck within five minutes. However, on the rollout, both EPC (electronic-prop control)-fail lights illuminated. The E-2C NATOPS states that reverse thrust during this condition may not be available, and it further states a go-around should be flown, followed by a field arrestment.

The thought of having to call the boat and explain to the front office we were stuck at home field (with our families) for who knew how long, and having them believe us, crossed my mind. It would be mildly painful to substantiate that bit of misfortune to the CO but definitely worth it.

However, there would be no such good deal. Although we had EPC-fail lights, both prop-beta lights (indications that reverse thrust is available) illuminated. Our pilot gently eased the power levers into the ground range and, much to our relief, found that reverse thrust on both props was available. We recovered uneventfully, but that situation still was strike two. Sorry, hon, see you in a few weeks.

A maintenance technician reset the EPC code that generated the EPC-fail light, and the aircraft again was safe to fly. We received the part we came for and were airborne within 20 minutes of when we had landed. We conducted our AIC mission on the last of our three events and then headed to marshal for another good deal, Case III recovery.

On our first approach, we dumped fuel to about 500 pounds above our max-trap weight; however, we had to remarshal because of an aircraft bolter—no big deal. On our second approach, another aircraft boltered ahead of us, and we again were told to discontinue our approach. We now were about 500 pounds above our 100-mile bingo: just enough fuel for one more Case III approach. As fate would have it, on our third approach, our pilot boltered. On the ball, we were about 200 pounds above the bingo the marshal controller called for us. We were surprised to hear we were bingo to the beach for gas, considering we were the last plane to recover. Also, the weather at the boat was not only better than Case III; it was Case I.

We were not going to argue the call and, very begrudgingly, headed to North Island on bingo profile. Our pilot was angry at himself for boltering, and he kept apologizing to the crew. We told him not to worry and tried to encourage him; the mission was not over, and we still needed his "A" game to bring us back to the boat. Somewhere in this last paragraph was strike three—you decide.

On our bingo profile, SOCAL approach tried to put us on a stereo route into NAS North Island (NASNI). We emphatically explained to our controller our nearly perilous fuel situation, but to no avail; they kept putting us on the stereo route. We gained their attention by squawking 7700 and declaring an emergency for low fuel. Thereafter, we received the handling we deserved. Strike four.

> During those times of low morale, each of us was mindful of how we interacted as a crew, so we wouldn't bring down morale even further.

Strike five followed closely behind strike four. Just before landing at NASNI, our low-fuel lights illuminated. The low-fuel lights did not come as a surprise or cause too much concern because our crew had briefed and anticipated the possibility. But, momentarily, the lights would be a concern. On rollout, both pilot and copilot did not have illuminated beta lights (which possibly meant no reverse thrust).

Given our low-fuel state, the pilot, instead of taking the aircraft around for a short-field arrestment as NATOPS recommends, elected to lower the arresting hook and take a long-field arrestment. However, as we headed toward the arresting gear with our hook down and waiting for the impending tug, the beta lights for both props miraculously illuminated. Our pilot slowly tested for reverse thrust and again found it available; the hook was raised, and the aircraft was stopped. The crash crew had us hold on the runway while they performed a hot-brake inspection. The brakes checked fine, and we told NASNI tower the emergency was over, and no further assistance was needed. Strike five.

At NASNI, we got gas and had the good folks at VRC-30 perform a tailhook inspection; we had dragged the hook on the runway for nearly 2,000 feet. The Providers had given us the all-clear, and we got word from the boat to recover during the next scheduled recovery.

By now, our crew of five had been in the aircraft for more than seven hours, had dealt with at least five emergencies, and was ready to just bring the aircraft back to the ship. We wanted to just park it and put this day in the rearview mirror. We were pretty much spent; adrenaline and morale were low, and fatigue was setting in. However, fate was not yet done with our crew: We still were at bat, swinging away.

Strike six came when we launched out of NASNI. When our pilot went to raise the gear, the same tow-link issue we had dealt with at the beginning of this dreadful flight now reared its ugly head again. Yes, we received another tow-link light. Certain this situation was a serial gripe and confident the tow-link was in the raised position, we erred on the side of caution and kept the gear down during our transit to the boat. We wanted to talk to our rep. We determined, as a crew, if the tow-link was down and/or if the nosewheel was cocked, we would bring our chariot back to Point Mugu and call it a day. To respond to this particular emergency aboard the ship is not only painful for the flight-deck crew (two of the four cross-deck pendants may have to be stripped), it is very dangerous for the aircraft and crew.

Once within comm range of the boat, we discussed the emergency with our rep. We concluded the problem was within the microswitch. We again inspected the nose gear, saw that it was straight, that the tow-link was raised, and then we retracted the gear. The illuminated tow-link light went out. Strike six.

The boat was Case III; we copied our marshal instructions and proceeded to marshal. As the routine, the E-2 is the last to recover. This time would be no different, except the ship had us commence too early. Our first time down the chute we were told to dis-

continue our approach and to remarshal; an inordinate number of aircraft ahead of us were boltering. Remarshaling was very frustrating for the crew but even more so for our pilot at the controls: He was now eight plus hours at the controls on our other-than-routine flight. Eight hours in the Hummer is bad enough, but eight hours punctuated with numerous emergencies almost was too much. Nevertheless, it was understandable; we all gritted our teeth and went back to marshal, not saying a word to one another.

The final strike came when the marshal controller told us to recommence our approach. The aircraft in front of us was being vectored to the final bearing off a bolter, and we were certain the ship could not possibly screw up the timing and spacing on this one—we were wrong. As we listened to the controller call off the DME for the aircraft in front of us, we compared it to our own. All five of us quickly determined there was no way we could trap right behind this guy—we were eating up the distance between us.

While never deviating too far from the final bearing, our pilot went dirty early. He made a number of S turns in an attempt to build some distance between us and the aircraft in front of us. This maneuver was to no avail because our approach controller soon told us to discontinue our approach and perform a 360-degree turn—in IMC, at 1,200 feet—to build separation. Every E-2 aviator who has experienced the Hummer dance probably accurately can surmise some to the language that was exchanged among our crew. Remember, this was the fourth time on this flight that our aircraft had been remarshaled, and it our sixth Case III approach. Mustering his last amount of motivation, concentration and focus, our pilot flew the approach to the ship, and, finally, we trapped. At last, we were aboard and now could put this eight-and-a-half-hour flight from hell behind us.

You might say to yourself, "Well, nothing happened. What's the point of this article? Is this one of those safety articles where nothing happened and was written just to score points with the skipper?" My crew and I do not believe so. We learned many lessons from this flight. Allow me to share the biggest take-away: crew-resource management (CRM).

This flight taught our crew the absolute necessity for good, if not excellent, CRM. While CRM always is a critical element of every flight, it seemed even more essential on this one. Just about any naval aviator can handle one, two, or even three emergencies in stride. But, dealing with five separate emergencies in the space of eight hours, compounded by the near round-robin excursion of Southern California, punctuated by remarshaling four times, and flying six Case III approaches was enough to test any crew. What kept us together as a crew was the use of good CRM and the motivation to bring the aircraft back to the ship.

Finally, something not specifically addressed under the seven pillars of CRM is crew morale. During our flight, crew morale hit some highs, but it hit even more lows. During those times of low morale, each of us was mindful of how we interacted as a crew, so we wouldn't bring down morale even further. We encouraged one another, especially our pilot. We communicated only essential information over the ICS during critical phases of the flight. We also tried to convey to one another a spirit of optimism and the goal of successfully completing our mission.

LCdr. Hewitt flies with VAW-112.

Crew Resource Management

Situational Awareness
Assertiveness
Decision Making
Communication
Leadership
Adaptability/Flexibility
Mission Analysis

The Iceman Cometh

By LCdr. John E. Rotter

We had taken off from NAS Brunswick at 0300 for a typical late night, ASW-training flight over the Atlantic. Before takeoff, we had learned a snowstorm was approaching Maine from the west. We received our usual weather brief at the tactical-support center, and the 2P went to weather to get the details. Because of the impending snowstorm, I told the 2P to look at every possible alternate, just in case we needed one.

The flight was uneventful until we had completed our training with a fast-attack submarine and were headed back to NAS Brunswick. En route, we learned the AGs were calling the field 500-and-a-half, slightly above the PAR minimums of 100-and-a-quarter.

For the approach, I put the 2P in the left seat to gain experience shooting an approach in something close to minimums. I was in the right seat, and one of our instructor flight engineers was in the flight engineer's seat. As we descended into the goo, we completed the descent and approach checklists. Because we didn't know the condition of the runway, we figured landing ground-roll distance for a land-flap landing, with moderate braking, and four inches of dry snow on the runway. We briefed an approach-flap landing if we broke out right at minimums.

We were turning final for the PAR approach to runway 1R, gear down, landing checklist complete, when a loud buzzing was heard in the flight station. The 2P and I grabbed the glareshields in front of us to see if they were the source of the noise, as often is the case. The flight engineer (FE) began feeling the emergency-shutdown handles, and he determined the noise was coming from the No. 2 engine. The power lever had a vibration, as well. We were 10 miles out, in instrument-meteorological conditions (IMC), with all checklists complete, and about to begin final approach.

I queried the FE to see if he thought the engine would last another five minutes or until we were on deck. He said no, and that he could feel the vibration worsening. This particular FE was a mech who worked in QA, so I wasn't about to doubt his judgment. Also, NATOPS has a warning about impending blade separation with E-handle and/or power-lever vibrations, so we decided the engine needed to be secured.

I checked with the 2P to see if he had any input, and I made sure he was ready for the engine to go away. He confirmed he was ready. At this point, we had begun a turn away from final and were at 160 knots. I called for the FE to E-handle No. 2. The 2P checked him on the E-handle, and the engine was secured; the engine and prop successfully feathered. We now were at 3,000 feet MSL, and I told the 2P to continue his turn to a heading of 190 to set up for an extended final. The turn gave us a chance to brief the three-engine landing and conduct a seat swap, so I could make the landing from the left seat.

As the 2P began to turn toward the outbound

...we had been flying, in IMC, with the pitot heat off the entire time.

course, he started to increase power toward the firewall on the three remaining engines. I noted his airspeed increase and called "airspeed" so he wouldn't overspeed the flaps. As the airspeed indicator sped past 190 knots (approach flap-limit speed) on my side, I took the controls, pulled back the power levers toward flight idle, and retracted the flaps from approach to maneuver. As I did this, I glanced at the pilot's airspeed indicator; it was stuck at 140 knots. The 3P, sitting on the radar console in the flight station, kept talking about true-airspeed heat, which I knew had nothing to do with the pilot's airspeed indicator. However, once I saw the pilot's airspeed indicator stuck at 140, I looked at the overhead console to see if indeed the pitot heat was operating. Simultaneously, the FE and I saw the pitot heat off, and he immediately turned it on.

The junior FE was a nugget straight out of VP-30. He dutifully had turned on the pitot and angle-of-attack heat when they were called for on the before-start checklist prior to taking off that morning. However, he then turned them off when he immediately didn't see a lineman. Until this incident, this action was customary for many FEs in the squadron, so that linemen wouldn't burn themselves on the pitot tubes or AOA probe. Unfortunately, he didn't tell anyone what he had done, nor did he turn them back on after a lineman appeared. Up until the engine shutdown, we had been flying, in IMC, with the pitot heat off the entire time.

Once the pitot heat was turned on, the pilot's airspeed indicator came up, and both gauges matched up. With the aircraft stabilized at 3,000 feet and 160 knots, with approach flaps, we declared an emergency and completed the emergency-engine-shutdown checklist. After completing the seat swap, we turned inbound at 20 miles.

Weather was our next issue. The snow storm we were flying in extended from New York to Canada. The winds at Brunswick were reported at four knots, nearly right down the runway, and I wasn't too keen on an extended transit in icing conditions, with one engine shut down. We decided to shoot the approach into Brunswick. The GCA controller did an outstanding job of guiding us in to the field. The 2P called field-in-sight at about 600 feet AGL. I transitioned outside and initially only could see the approach lights.

The runway came into view but was very difficult to make out as it had not been plowed. Four to six inches of fresh snow were on the runway. The contrast between the white edge, the centerline lights, and the snow was almost nil. I selected land flaps, and we touched down about 1,000 feet down the runway. Once the nosewheel was on the deck, the 2P assisted me by holding full left aileron and full forward yoke. I maintained centerline with the rudder, as I slowly brought the three remaining power levers into reverse. We slowed down, and, as speed decreased through 80 knots, the snow blown forward by the prop wash began to obscure our forward vision. We stopped the aircraft with 2,000 feet of runway remaining.

After we had taxied clear of the runway, I considered how our training scenarios never had come anything close to this one, which happened to be my first actual three-engine landing as a plane commander.

We learned quite a few lessons in crew coordination on this flight. If you do something nonstandard, make sure you let the other crew members know, so a potentially dangerous situation doesn't develop down the road. The danger of flying the aircraft outside its envelope is a very real possibility if airspeed indicators are not reading correctly.

Make sure you are backing up the other crew members. Four people missed the pitot heat being off until a critical phase of flight. We need to trust our junior people, but we still must be vigilant as they work toward their qualifications.

Finally, although we probably didn't think about it at the time, we were using ORM throughout the emergency. We decided the risk of leaving the motor running was too great, so we shut it down. We then decided to remain at Brunswick for the landing because of our proximity, the pilot's familiarity with the field, and lack of current weather data from any alternates.

As it turned out, the vibrations were caused by a failed bracket, not a prop blade about to go flying. Despite the risks, through management and experience, we brought the plane and the 13 of us aboard home one snowy December morning in Maine.

LCdr. John E. Rotter was with VP-26 at the time of the incident and currently flies with VPU-1.

HMLA-267

Left to right: Capt. Ryan Welborn and 1stLt. Jonathan Chaiken.

Capt. Ryan Welborn, USMC, a functional-check pilot and pilot-in-command, along with 1stLt. Jonathan Chaiken, USMC, were scheduled for a full card, functional-check flight (FCF), following a periodic-maintenance-interval (PMI-2) package. After a thorough preflight and completion of the ground portion of the FCF, the AH-1W crew departed MCAS Camp Pendleton, Calif., and positioned themselves over the beach at 4,000 feet AGL.

As part of the in-flight FCF procedures, Capt. Welborn initiated a maximum-power assurance check on the No. 2 engine by setting the No. 1 engine throttle at flight idle. While 1stLt.Chaiken scanned the beach for traffic, Capt. Welborn wrote down the required engine-instrument readings. The aircraft then yawed to the left, and the No. 2 engine gauges decreased below flight idle. Diagnosing a possible engine failure, Capt. Welborn immediately entered an autorotative profile, rolled the No. 1 engine to full open, and positioned the aircraft for a precautionary-emergency landing (PEL) on the beach. Capt. Welborn then transferred controls to 1stLt. Chaiken in the front seat and executed an air start on the No. 2 engine—the engine started normally. During this time, 1stLt. Chaiken flew the aircraft along a PEL profile. After advancing both throttles to full open, Capt. Welborn assumed the controls and flew an uneventful landing.

A subsequent investigation revealed a fuel line from the aft fuel cell was not properly tightened during the PMI-2. This situation had allowed air to be sucked into the No. 2 engine's fuel line, causing a loss of pressure and subsequent flameout.

Timely decision-making, a sound knowledge of aircraft systems and procedures, excellent crew-resource management, and skillful airmanship were displayed by both pilots. Their actions directly were responsible for the preservation of a warfighting asset.

BRAVO Zulu

HS-11

During a night flight in support of combat operations off USS Enterprise (CVN-65), the Dragonslayer 611 crew of LCdr. Rod Dill, Lt. John Roath, AW2 Dan Mills, and AW3 Eric Rydh heard a howl coming from the No. 1 engine compartment during a max-power check. Seconds later, as the pilots slowed the aircraft to troubleshoot, the No. 1 high-speed shaft catastrophically failed, sending FOD throughout the engine and transmission compartments. The crew performed the NATOPS procedures and made a single-engine approach, landing the damaged aircraft on the bow, without further incident.

Lt. John Roath, AW3 Eric Rydh, LCdr. Rod Dill, AW2 Dan Mills

Photo by Ltjg. Steve Smith.

1stLt. Nick DiGuido
(now Capt. Nick DiGuido)

VMFA-115

Capt. Frederick Lewis, USMC, and 1stLt. Nick DiGuido, USMC, were flying a section of Hornet aircraft while conducting unit-level training in the R2512 range complex, about 20 miles to the east-northeast of NAF El Centro. After completing multiple 2.75-inch-rocket attacks from a 30-degree-dive circular pattern, blade 22, 1stLt. DiGuido's aircraft, had dual bleed-warning lights while pulling off target. As he leveled at 9,000 feet, he completed the immediate-action NATOPS procedures for dual bleed-warning lights and simultaneously put NAF El Centro on the nose.

1stLt. DiGuido told his lead of the emergency, noting that the dual bleed-warning lights had not extinguished and that no secondary indications were present. En route to NAF El Centro, the blade 21 pilot flew a running rendezvous and performed a battle-damage check on blade 22. No external or secondary indications for a bleed-air leak were seen. Blade 21 coordinated with El Centro tower to fly a visual straight-in approach to runway 26.

Following an uneventful landing, blade 22 taxied clear of the runway and immediately shut down the aircraft. The time from the initial illumination of both bleed-air-warning lights until both engines were shut down was less than seven minutes.

After egress, 1stLt. DiGuido observed residual smoke coming from the aft portion of the aircraft. No further assistance was required after the crash crew arrived, and the aircraft subsequently was towed to the hangar. The maintainers removed the access panels in the keel-bay area and found extensive heat and smoke damage.

Sound crew coordination and adherence to NATOPS procedures by 1stLt. Diguido and Capt. Lewis prevented the Hornet from receiving more severe heat damage and possible loss of aircrew and aircraft.

VR-56

On a C-9B logistics mission, JU361 made a stop in Johnstown, Pa., to pick up Marines and their cargo. While loading pallets on the Skytrain, loadmaster IT2(AW/NAC) Peter Gruettner noticed the pallets felt and looked heavier than the weights stated on the cargo manifest. He reported his concerns to the aircraft commander and asked to have the pallets reweighed. Recomputation showed the pallets were 2,300 pounds more than what originally had been reported. Even before IT2 Gruettner found this discrepancy, the takeoff weight already was critical. Had he not acted promptly to verify the weight, the aircraft could have taken off in a significant overweight condition, or it may not have been able to get airborne before the end of the runway. IT2 Gruettner's assertiveness most likely prevented a serious mishap.

Spatial D in the Goo

By Ltjg. Geoff Anderson

Fresh from the fleet-replacement squadron (FRS), I had arrived at HC-5, now HSC-25. I was eager to throw myself into a mix that included multiple USNS vertrep detachments, Gator SAR, and humanitarian-aid disaster-relief assets (HA-DR) in the tsunami-hit region of Banda Aceh, Indonesia. I was assigned to Det 4 on USNS *Niagara Falls* (T-AFS-3) only three weeks after checking in and was excited to "cut my teeth" as the only pilot qualified in model (PQM) with five other helicopter-aircraft-commander (HAC) pilots.

Early in our cruise, in support of USS *Kitty Hawk* (CV-63) and USNS *Mercy* (T-AH-19), the Indonesian island of Nias, already in the heart of the tsunami's affected region, was rocked by a magnitude 8.7 earthquake. Thousands were killed, 85 percent of the buildings were damaged, and the remote island's infrastructure was destroyed. USNS *Mercy* and USNS *Niagara Falls* were ordered to the scene in what would become Operation Unified Assistance 2.

Once on station off the coast, less than a week after the disaster, we settled into a routine of ferrying medevacs and medical personnel. We logged almost 24 flight hours a day between two helicopters for almost a month. Each day consisted of multiple runs between *Mercy* and the primary landing zone (LZ) in the town of Gunungsitoli, with runs as required to more remote areas of the island.

We soon found ourselves at odds with the operating procedures of *Mercy*: We had an obvious disconnect between the requirements of the airborne and afloat side of operations. The ship was unable to store more than two days of refuse aboard, which necessitated a transit around the island every other day to a point 12 miles off the coast for dumping. This requirement placed us in a position to have a nearly 50-mile transit, to include crossing the rugged island; it also gave us a greater chance of being affected by the violent and unpredictable tropical weather in the region.

On one of the protracted round trips, I was in the cockpit with our OinC, a seasoned pilot of three operational airframes. Weather progressively was getting worse because of afternoon storms, with ceilings dropping below 500 feet in many places. With no radar coverage in the region, we were forced to remain VMC. We had to pick our way overland to *Mercy,* while hugging the terrain, a stressful task I was glad to conclude

by going feet-wet on the far side. Perhaps I let down my guard with the reduced threat of terrain impact, but I thought we were in the clear once over the water, where we visually could account for the individual storm cells and avoid them.

We now had a sweet lock on father, so I pointed the nose in that general direction and continued to circumnavigate the microbursts that swept across our path. As we closed on *Mercy* and got her numbers, we realized the base-recovery course (BRC) was inline with the general track of the storms. The air boss confirmed the ceiling and visibility was going in and out of minimums, minute by minute. They were sitting in the middle of a tropical-storm cell and moving with it, yet our request was denied to have the ship maneuver to clear air.

My OinC set a bingo back to mother, in case the weather did not open up around the hospital ship, so we waited. After only a few minutes, we got a call from tower, saying their visibility was at least a mile, and the ceiling looked like it might be 500 feet. Although we did not have a visual, we tried to sneak in under the weather from the primary marshal. I had the controls, took us in, and eased us down to 300 feet to keep visibility. The TACAN read two miles when we flew directly into a downpour, which took our forward and lateral visibility down to zero. Our visibility to the water surface, through the chin bubble, continued unobstructed.

I immediately transitioned to a full-instrument scan and called out that I was on the gauges. I soon began to have problems: Every time I came back to my attitude indicator, it would be a couple of degrees nose high, and I would have to trim it back down. I could feel the "giant hand" pulling aft on the cyclic. This cycle continued a couple of times until I told the HAC I had the leans and was having trouble flying. He immediately engaged radalt hold and opted to talk me through it, rather than assume the controls. I finally realized this situation was critical. I executed the NATOPS procedure for an unusual attitude, but, by the time I got myself under control and my inner ear calibrated to my attitude indicator, we had gained almost 500 feet. My airspeed had bled down well below 50 knots, which is a critical airspeed in the MH-60S because the autopilot switches from airspeed-hold to attitude-hold. I simply had overridden the automatic-flight-control system (AFCS), put us high and slow, and now the trim would be of little help getting me back on parameters. At this point, the HAC called visual on *Mercy* through the chin bubble. Seeing the ship down there gave me a mixture of relief and fear, for I now could tell I almost was in an 800-foot hover-out-of-ground-effect (HOGE) and, therefore, lacked the kind of stability afforded by forward flight.

I stated I was visual and could maintain contact by circling down and keeping the ship on our left side. The HAC agreed, and, less than a minute later, we had set down on deck. That landing was the first and, thus far, only one I felt fortunate to have made—it's funny what things you take for granted.

We departed for another run and were not surprised to find *Mercy* still parked in the middle of a squall upon our return. Once again, the ship didn't maneuver and while probing in search of a path of entry, I saw a flash of lightning. I suggested, and received no argument, that we return to mother and shut down, pending an upturn in the weather.

Our RTB was uneventful.

Reflecting on the situation during my waterwash, fold and stuff, I realized that, as good as the Navy's instrument-training syllabus is, it is not all-encompassing. We train under what normally are ideal conditions to fly IFR, at altitude, and under the control of shore-based facilities. I unknowingly allowed a gap in my preparedness by never considering how I would employ my training in a helicopter's operational environment: low and close to the water, with ships not equipped to provide ATC. This mindset led me to be caught off guard by two major factors, which resulted in my experiencing spatial disorientation.

First, the majority of my instrument time was garnered in the Jet Ranger, and, while gauges are gauges, the Knighthawk's cockpit layout is such that when you are heads down, you cannot avoid the chin bubble creeping into your peripheral vision. I never noticed this problem in the TH-57, but, then again, 95 percent of my IFR training was conducted at night, at altitude, so there was very little to see. Second, we all know that depth perception disappears over open water. What appears to be 50 feet may very well be 500 feet. These two factors, when combined with the loss of forward and lateral visibility because of the rain, made me subconsciously apply aft cyclic to climb away from what appeared to be a water surface much closer to my chin bubble than it actually was. Had I expected this phenomenon to occur, I could have prepared myself for it, rather than being caught off guard.

When all was said and done, our CRM definitely pulled us through, and we recovered our aircraft according to NATOPS. If this is the scariest sea story I ever tell, I'll be grateful.

Ltjg. Anderson flies with HSC-25.

You Never Forget Your FIRST...

By Lt. Ron Martin

We were in the fourth day of an operation that later would be dubbed Unified Assistance, the largest humanitarian assistance and disaster-relief operation ever conducted in Southeast Asia, and the largest Navy operation in this theater since the Vietnam War. USS *Abraham Lincoln* (CVN-72) Strike Group was fast deployed to Northwest Indonesia, which was hardest hit by the tsunami, to stop the march of death looming on Aceh Province, Sumatra.

I was a junior helicopter-aircraft commander (HAC), with 533.7 total flight hours but only 33.7 hours as HAC on my first deployment. I was section lead in a two-helicopter section delivering food, water and medical supplies to this devastated region. Flying in a section instead of single-aircraft operations later proved to be a saving grace for me.

Our first mission of the day had us land in a soccer field next to the overwhelmed airport of Banda Aceh, the hub of all humanitarian operations in this area. The mission was to deliver 3,000 pounds of supplies to the village of Lamno, 45 miles to the south. I had delivered aid to this village the day before and was very familiar with the area and its landing zone (LZ), which was a pee-wee-league-size soccer field in town center. This LZ was fraught with its own dangers. On the approach end and around the entire perimeter, power lines and trees reached 25 to 30 feet—begging a helicopter to land short. On the departure end, two-story houses and 40-foot trees made for a real-world, obstacle-clearance takeoff. To add to the character, left and right of the field, crowds of hungry people waited to mob the helicopters as they landed and to take away their precious cargo.

Your Naval Safety Center ORM point of contact is: Ted Wirginis, Code 11
Naval Safety Center
375 A St., Norfolk, VA 23411-4399
(757) 444-3520, ext. 7271 (DSN-564)
E-mail: theodore.wirginis@navy.mil

As we descended into Lamno, we spotted an MH-60S from HC-11 already in the LZ, dropping off its cargo. I directed my co-pilot to lead the section in an overhead pass of the LZ for reconnaissance and evaluation. While we orbited, I established radio contact with aircraft on deck to coordinate their departure and our arrival. As we overflew the LZ, we saw a civilian air service H-3 shut down in the forward right corner of the small soccer field, making the available area even smaller. We later learned they shut down because they were running out of fuel.

I directed my copilot to begin the approach to land, just behind and to the right of the spinning MH-60S aircraft. My copilot was in the left seat, with the best view for clearance with the turning aircraft. The landing was graceful and exactly in the area I directed. I took the controls and asked him to hurry, help unload, and control the crowd under our turning rotors.

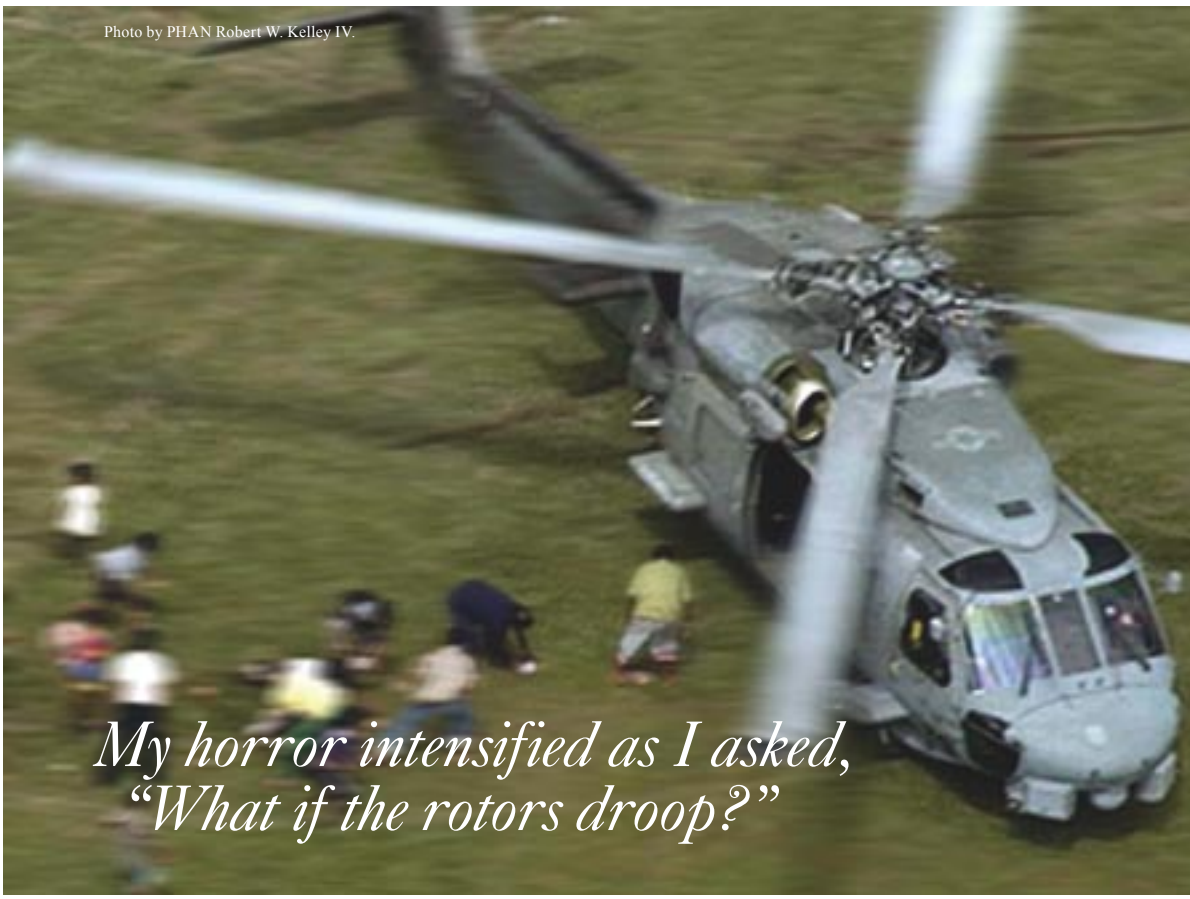


Photo by PHAN Robert W. Kelley IV.

My horror intensified as I asked, "What if the rotors droop?"

My copilot quickly exited the cockpit and walked around the nose of the aircraft to the cabin area. He began offloading supplies, while the crewman coordinated the local military presence to help establish security. With security in place, my crewman began assessing villagers injured by the tsunami. As I looked over my right shoulder, onto the coordinated chaos to watch the food offload, my attention was drawn to the left as the MH-60S aircraft called "lifting." As she departed, my eyes naturally shifted through the cockpit for a quick scan of the instruments. Here is when the story really begins.

In the minutes that followed, all hell broke loose. As my eyes shifted to the pilot-display unit (PDU), I was horrified. All of my gauges were fluctuating into the redline, and all three red-main-rotor, overspeed lights were illuminated.

My mind was screaming, "High side! High side!"

My left hand held down the collective, as I glanced outside to my right for my crewman and copilot. They were heavily engaged with the local population—all of them under my rotor arc.

My horror intensified as I asked, "What if the rotors droop?"

I quickly regained my focus and screamed at the

USS *Abraham Lincoln's* (CVN-72) vertical lift capability consisted of Carrier Air Wing Two's helicopter squadrons, HSL-47, HS-2, and HC 11, and included 17 SH-60B/F/H/S aircraft. This three helicopter-squadron complement was a first in carrier aviation. HSL 47's main body of four SH-60B helicopters was embarked on *Lincoln*. Additionally, HSL-47 had two combat elements, consisting of another four helicopters, with two detached to USS *Shiloh* (CG-67) and USS *Shoup* (DDG-86), respectively. The Saberhawks were part of a restructuring concept called "Bravo to Sea," which was designed to validate integration of SH-60B, light airborne multi-purpose systems (LAMPS) into the air wing, paving the way for the MH-60 Romeo transition. The entire surge deployment was punctuated with firsts for the SH-60B community.

My left hand held down the collective, as I glanced outside to my right for my crewman and copilot. They were heavily engaged with the local population—all of them under my rotor arc.

Photo by PH3 Tyler J. Clements. Modified.

top of my lungs for my copilot and crewman.

The radio came to life with the voice of my wingman, a lieutenant commander, "Ron, what's the problem?"

My concentration totally was focused inside the cockpit. His call went unanswered, as I executed the "engine high-side failure, on deck" emergency procedures.

During the first stages of my diagnosis, an instant moment of clarity hit me. I noticed my copilot's PDU still was normally indicating, but the No. 2 NG was maxed out. This situation wasn't as serious as I thought.

Admittedly, in those few seconds following the emergency, I forgot I even had a wingman. His second call brought my focus back to him. "OK, he's asking me to read my indications to him," I told myself.

As I took a deep breath, my skipper's voice ran through my head, "Ron, what is the aircraft telling you?"

My self-conscience made me think I had damaged one of his aircraft. With the prompting of my skipper's voice and my wingman, I listened to the aircraft. The helicopter sounded normal, the copilot's indicators still remained in the green, the No. 2 engine NG still was topped out, and my PDU was fluctuating and redlining.

I added a little collective to troubleshoot. This change in sound was my prebriefed attention-getter to the aircrewman to get back into the cabin if there was a problem. My salty first-tour crewman immediately manhandled my copilot and our embarked photographer into the helicopter. Still yelling, I ordered my copilot to get strapped in. As he began throwing his lap and shoulder harness into the buckle, I briefed him and the aircrewman on the situation.

During our postflight debrief, I was surprised to find out that my crewman thought we were being attacked and were about to make a hasty egress out of the LZ. That assessment was not far from what my wingman and his crew said, after hearing my unintentional panicked radio broadcast.

Five minutes slipped by while I fixated on the problem. In the meantime, another H-60 from our sister squadron arrived overhead. He, too, lent his experience to the situation. Both my wingman and the HAC of the orbiting SH-60F came to the conclusion I was ever so slow to realize: an indicator problem. With the LZ clear, with the exception of the fuel-exhausted civilian H-3, my wingman landed to get an "eyes on" look at the situation.

By now, the engines were at idle, per the high-side emergency procedure. We agreed what I had experienced was an indicator problem—no audible secondary indications, no increase in Nr or TGT. We discussed my options: Run up the engines to determine conclusively the aircraft responded appropriately, or execute a five-minute hover check.

My wingman left the aircraft, and my copilot jumped back in. I briefed him and my lead (on the radios) of my plan. The penalty hover was uneventful, so as prebriefed, we began an obstacle-clearance takeoff from the LZ. This takeoff was uneventful, and we headed to the carrier for an early precautionary recovery. With the pilot-side PDU gauges still fluctuating, I requested my wingman make all appropriate calls and follow us back to *Lincoln*. We recovered onboard, and I left the aircraft running to allow squadron maintenance personnel to see the indications for troubleshooting. As expected, they said it was an indicator problem. All I could think about was, "Why was I the last to figure this out?"

What are the take-aways from all this excitement? As a HAC, you must be vigilant and be a calm voice of reason. As a result of my training, I was predisposed to literally interpret the gauges. Take a deep breath, assess the situation, then execute the proper emergency procedure. If the situation does not have an emergency procedure, then use your best judgment to troubleshoot the issue. In this case, my snap diagnosis of high side was aggravated by the fact there were people in dangerous proximity of the rotor arc, despite the best effort of my crew to keep them at bay. It also proved the saying, "No fast hands in the cockpit." The continued scanning of the cockpit indicators and assessment of what my aircraft was "telling me," gave me enough information to troubleshoot effectively.

Finally, I cannot overstate the need for crew-resource management. Following this situation, I feel even more like an inexperienced HAC but not a weak one.

In this instance, my crew was engaged in a necessary part of the mission. The LAMPS community does not fly regularly as a section. As the emergency developed, my thought processes wrongly snapped back into HSL-style, single-aircraft operations. It was because of my wingman's prompting that I used his crew as an extension of my own, as well as the SH-60F overhead. CRM went outside the aircraft as they all became part of my crew.

Even though this emergency turned out to be benign (SDC channel failure, unindicated), the exercise was an eye-opener and positive learning experience for me. Taking a moment to analyze the situation, looking at not only your instruments but assessing the actual aircraft environment, will speak volumes and only takes seconds. Don't discount other outside assistance in your decision-making. You never forget your first emergency as a HAC—and you shouldn't.

Lt. Martin flew with HSL-47 and currently is with CFC-A CJ5.

A Good-Deal Flight

By Lt. Warren Van Allen

As the new guy in your first fleet squadron, nothing is better than a good-deal, all-JO flight. Our four-man crew consisted of two new guys: our newest mission commander, with less than 600 Prowler hours, and me, with less than seven months of fleet experience.

After taking off from NAS Whidbey Island, we noticed the weather was building west of the Cascade Mountains. That type of weather buildup is not uncommon in Whidbey, especially in the fall. Our airspace, on the other hand, was about 60 miles east of the Cascades, and the weather there was clear and a million, as forecasted.

The mission was basic-aerodynamic maneuvers (BAM), and the event started with fundamental aerobatics and progressed into surface-to-air defensive tactics. After finishing the required training items, we still had gas and time

in the area, so we decided to do more aerobatics. We were on the back half of a barrel roll when we got what seemed like a dual-generator failure. We lost all lights and radios in the cockpit, and, for a second, everything got uncomfortably quiet. With no radios or ICS, I had to take off my mask to yell to the pilot to pull the ram-air turbine (RAT). The RAT will restore a number of essential electrical items. The pilot beat me to it, and, by the time my mask was off and I began to yell, the radios and lights had come back to life under RAT power. We quickly recovered from the maneuver and climbed on a heading back toward Whidbey.

With good four-way comms, our crew began to assess the situation. On closer inspection, we thought we had had a double-generator failure; instead, we had had an odd mix of electrical failures.

Driving west, we divided the tasks at hand to get ready to land at Whidbey, potentially in the poor weather. I was communicating with ATC and reading through the PCL, while the backseaters got weather updates from ATIS and metro. They also followed me through the pocket checklist (PCL). Over ICS, we were all trying to figure out exactly what we were dealing with.

Before getting the RAT deployed, we had lost radios, ICS, flood lights, and utility lights, all of which pointed to some type of partial DC failure. In the few seconds between losing comms and getting the RAT pulled, we didn't notice any specific indications of an AC failure. The crew, however, decided to err on the side of caution and assumed we may have had some sort of AC failure that was restored when the RAT restored essential bus power. In the Prowler, if the RAT does restore AC-essential power, then DC-essential power gets switched to the emergency transformer-rectifier, which receives its power from the RAT. Long story short, if you pull the RAT, and the RAT subsequently fails, then both AC- and DC-essential are lost, and you can't get them back. Operating speed for the RAT is 110 knots, so, on landing rollout, we expected to lose AC- and DC-essential. Therefore, we coordinated a precautionary-arrested landing, because, without electrical power, we would not have speedbrakes, nosewheel steering, anti-skid, or flaperon pop-ups, all of which we would need to slow down and control a normal landing rollout.

We had our plan, and, as we headed west, we were welcomed with weather that was better than when we left. We also had paddles waiting on-station to help us out with the field arrestment. The next big question was whether we could dirty-up. A complete DC-essential failure would necessitate a no-flaps/no-slats landing, and we would need to lower the gear by the emergency method. It turned out we could dirty-up, and we made an uneventful arrested landing at the field, where we ended up losing all electrical power when the RAT fell off-line in the wire.

After maintenance investigated the problem, they determined we had two of four DC-essential, feeder circuit breakers pop. However, because of the 30-something-year-old wiring in the Prowler, we did not see all of the failures associated with those two feeders, and we had some failures that shouldn't have been associated with those two feeder circuit breakers. The result in the cockpit was a partial electrical failure that manifested itself like a dual-generator failure.

As a very junior aircrew, we didn't have the experience to fall back on to precisely diagnose the problem. As is often the case with the Prowler, no electrical failure is the same. Instead, we delegated our tasks throughout the crew, used good crew-resource management (CRM), and fell back on our procedures and the PCL, along with a little forward thinking by the mission commander. We kept relatively minor problems from turning into bonafide emergencies.

Lt. Van Allen flies with VAQ-141.

Mishap-Free Milestones

VAQ-136	19 years	30,975 hours
HMM-265	2 years 10 months	10,000 hours

An Anymouse Success

By LCdr. Gabe Turcsanski

At first glance, a C-9 flight line might not appear to be a hazardous place. How hazardous can it be to walk from the squadron hangar to a jet parked less than 50 yards away? Look out for that deicing truck! Beware of the luggage cart! Don't spill your latte! While the fleet logistic-support mission might not seem as hazardous as other naval -aviation missions, certain evolutions do carry an amount of risk.

Our squadron recently faced such a situation. The NAS Whidbey Island base fire station had been moved to a temporary location on the squadron's flight line, while construction of a new building took place farther down the flight line. The location of the new fire station permitted emergency vehicles to enter and exit through a single point in between one of the squadron's three aircraft-parking spots. Clearance from wingtip to wingtip was adequate for vehicles to transit between jets, but only if the drivers moved cautiously.

An Anymouse-report submission alerted the safety department of the potential hazard of emergency vehicles driving between squadron aircraft. A squadron member was concerned about the hazard of fire trucks striking an aircraft while rushing to an emergency. As a result of the Anymouse report, the VR-61 safety team went into action. An in-depth ORM assessment was conducted. Base operations and fire-department personnel joined our squadron in a detailed risk assessment of the hazard.

The involved parties came to the conclusion that, while the potential for an emergency vehicle hitting an aircraft was unlikely during daylight hours, the potential for a mishap to occur at night was probable. Risk controls for the potential hazard were discussed. We determined the best control would be to paint access lines for emergency vehicles through the squadron's flight line. Vehicles entering and exiting the flight line from the fire station now transit via a fire lane painted on the ground.

This experience was a classic ORM exercise involving all five steps. Was a mishap averted? The answer to that question never will have to be answered, thanks to the coordination among VR-61, base operations, and fire department personnel. Sometimes the best success of an ORM program is the lack of a reportable mishap.

LCdr. Turcsanski flies with VR-61.

The Anymouse form dates back to 1947. The original idea of submitting anonymous reports is credited to LCdr. Trygve A. Holl, safety officer in VR-31. The Anymouse is a form available to Navy and Marine Corps personnel for reporting, anonymously, near-accidents or incidents which might have led to aircraft accidents of a more serious nature. These hairy tales, submitted by nameless airmen, provided a means for pilots and crewmen to gain valuable knowledge from the experience of others. Anymouse was the genesis of the "There I was..." stories that appear in *Approach*.

To learn more about Anymouse reports, I suggest you read an article titled "Anymouse's Anniversary," on pg. 4 of the *Approach* 50th anniversary issue. Find it online at: www.safetycenter.navy.mil/media/approach/issues/novdec05/anymouse_anniversary.htm

—Editor.

OPERATIONAL RISK MANAGEMENT
Program Updates

1. New web content

ORM has been around for a number of years. Fleet personnel say they know what ORM is and use it on a daily basis, but how local commands apply ORM shows great variation. Our overall goal is to provide better recommendations for model behaviors, skills and organizational processes that will help fleet units create standardized, high-quality ORM programs.

As one step, we've made a major upgrade to our ORM web content at http://safetycenter.navy.mil/orm/ORM_explanation.htm. New files and presentations include:

- What ORM is and isn't.
- Roles and responsibilities for COs, XOs, ORM managers and assistants, department and division heads, and individuals.
- The ORM mindset: what it takes to make ORM work.
- The vital elements of a model unit.
- How to assess ORM programs: metrics for judging whether the ORM process is really being used.
- A 17-question assessment checklist.
- Common roadblocks and how to overcome them.
- "The Leader's Role": 12 leadership techniques, with descriptions of the technique's purpose and procedures.
- Lists of questions to help decision-makers understand the full significance of risk issues during general operations, training missions and base support operations.

2. The special issue

We're at work on a special magazine that will offer ORM tools and resources, a brief review of basic concepts, a status report on the current state of ORM in the fleet, and a detailed look ahead at upcoming initiatives.

Feel free to suggest what sort of content would be most useful. We'd also like to hear first-person experiences—good or bad—about applying ORM to fleet ops. We'd particularly like to hear from personnel who have taken the instructor course and have used this training at their unit. Success stories and lessons learned are extremely valuable. We can also use photos of Navy and Marine Corps personnel working the ORM process.

Naval Safety Center POCs are Derek Nelson at 757-444-3520, Ext. 7243, e-mail derek.nelson@navy.mil, and John Mahoney, Ext. 7310, e-mail john.mahoney@navy.mil.

3. "The Way Ahead" (plans)

The Naval Safety Center now has an ORM Cell with three branches: Policy, Training & Education, and Assessment & Feedback. In work, short-term, is a revamp of time-critical fundamentals that will be more applicable to young Sailors, along with better gouge on deliberate ORM. A lot of research is underway with focus groups, testing ideas and models for what works, and identifying what will stick with Sailors on- and off-duty. We're working with NTC Great Lakes the Center for Naval Leadership to prepare instructors on how to incorporate a new time-critical ORM piece into their training curricula.

Mission First, Safety Always

Visit our website at www.safetycenter.navy.mil

Complacency or a false sense of security should not be allowed to develop as a result of long periods without an accident or serious incident. An organization with a good safety record is not necessarily a safe organization.

—International Civil Aviation Organization, Accident Prevention Manual, 1984

Photo by PH2 Daniel J. McLain. Modified.