THE NAVY & MARINE CORPS AVIATION SAFETY MAGAZINE

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Approach

Too Close... Just Too Close

We were close enough to see his kneeboard.

Pg. 30

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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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CON

Features

Departments

NTENTS

Stories with an aeromedical focus.

Front cover: A Photo-composite image of EA-6B photos to illustrate the artcle, "Too Close...Just Too Close," by Cdr. Luttrell, on page 30.

March-April Thanks

Thanks for helping with this issue…

LCdr. Leonard Hennessy, VAQ-139
LCdr. Richard Knapp, VAQ-137
LCdr. Geoff Vickers, VFA-83
LCdr. Ed DeWinter, HSL-37
Lt. Joshua Saunders, VT-27
LCDr. Dan Harwood, VAW-116
LCdr. Paul Lanzilotta, VAW-121
Lt. Ian Paddock, VFA-147
Lt. Jeremy Casella, VR-55
LCdr. William Fraser, VAQ-136

The Initial Approach Fix

FROM OUR AVIATION DIRECTORATE...

ORM: Program Update

The Naval Safety Center is the ORM model manager for the Navy. Here are several initiatives the ORM team is working on.

ORM model – This model is designed to improve ORM knowledge and application throughout the fleet. A new addition to the model is a standardized assessment tool to be used during Safety Center surveys, and unit- and group-level exercises and evaluations to assess how well ORM is being brought into command processes. This tool can help determine if your ORM structure is in place and effective. The model can be found on the Naval Safety Center website at: www.safetycenter.navy.mil/orm.

Time-critical risk management - To correct deficiencies in time-critical ORM training, the Naval Safety Center, working with fleet ORM advocates, is reshaping the ORM fundamentals. The fundamentals still will be based on the four ORM principles but will place increased emphasis on the elements and skills necessary to execute time-critical ORM. These time-critical fundamentals will be part of the ORM model.

ORM training - The Naval Safety Center is presenting time-critical ORM briefs in fleet-concentration centers this year. The applications and integrations (A&I) course offered in fleet-concentration centers will include the new time-critical ORM elements. Course locations and dates are posted on our website at: http://www.safetycenter.navy.mil/orm/class_schedule.htm.

Aeromedical

This issue has two aeromedical-related articles that address problems to all aviators. The article, "Dehydration Will Ruin a Mission," by Lt. Jasmine Gough, VAQ-137, on page 15, stresses the need to drink fluids before and during a flight. The need for female aviators to stay hydrated is no different than for men, and the need for all aviators to be at the top of their game is obvious. The other article is "Doc, My Neck Hurts," by Lt. Mark Jacoby and Tina Avelar on page 16. In addition to information on neck problems, several stretching and strengthening exercises are provided.

Another article, "Patient 296," by Cdr. Skip Trahan, shares a story of support for our aeromedical teams. Medevacs are critical in saving lives, but within each mission, the aircrew and medical personnel always must weigh risks and make decisions. Here's their story. *Approach* focused on the medevac and casevac missions in our July-August 2006 issue, view it at: http://www.safetycenter.navy.mil/media/approach/issues/julaug06/default.htm

Over 80 percent of aviation mishaps have human factors as a primary causal factor. Our aeromedical webpage has information to help you overcome these factors. We've added several new articles and resources to our webpage, view them at: http://www.safetycenter.navy.mil/aviation/aeromedical/default.cfm.

Aviation3750

We've recently published a special issue of *Mech* and *Approach* magazines, titled *Aviation3750*. Do you want to know where to get information on mishap investigations, BASH, WESS, or the safety-survey program? This handbook is a great resource for these programs and many more. There are even sections on best practices, mishap trends for each community, and mishap summaries. Contact us to obtain additional copies or view it online at http://www.safetycenter.navy.mil/media/Aviation3750/Aviation3750.pdf.

Blue Threat

Blue threats are those on- and off-duty actions or inactions that can increase our risk of mission failure, injury or death. ORM is a key tactic in defeating the blue threat, and the application of ORM principles goes a long way in eliminating preventable mishaps. The article, "Painted Into a Corner," by Lt. Jesse M. Reed, on page 3, depicts a blue-threat scenario.

Naval Aviation Readiness Through Safety Award

Congratulations to Commander, Naval Air Force U. S. Atlantic Fleet on their selection for the Naval Aviation Readiness Through Safety Award and the Adm. James S. Russell Naval Aviation Flight Safety Award for CY 2006. These awards are presented annually to the controlling custodian who contributes the most to readiness and economy of operations through safety. CNAL had an outstanding safety record, an aggressive safety program, an improving three-year safety trend and flew over 234,000 flight hours with no Class A flight or flight-related mishaps.

Painted Into a Corner

...paddles gave me the words I had convinced myself I wouldn't hear, "Power back on… bolter, bolter, bolter."

By Lt. Jesse M. Reed

I was a nugget on my first sea det with my fleet squadron. We were in our first week of tailored-ships-training availability (TSTA) off the coast of Southern California. In keeping with typical June weather for the area, a consistent overcast hung 1,000 feet over the ocean.

This was my first time at the boat since my initial CQ in the Hornet, just shy of a year earlier. During that CQ, we had faced the same summer overcast conditions, and I felt I had done fairly well. Also, my first couple of traps, just a few nights earlier, had gone well. So, I walked to my jet to CQ on this evening, feeling confident and eager to show my squadronmates I could handle myself around the boat—despite being a nugget.

I launched without incident, copied my marshal instructions, and headed to the stack for some comfort time. After 20 minutes, I pushed on time and commenced my approach. As I hit platform, I switched from marshal to approach and listened to comms for the aircraft in front of me coming down the chute. Paddles called starboard winds on approach, so I filed that information in my brain, as I continued the approach. I listened to my approach frequency as the first aircraft called the ball, and I heard paddles say, "Little power… easy with it… power back on… bolter, bolter, bolter."

The next guy in line, on this frequency, had a similar approach with the same result: a bolter. I thought the burble from the starboard winds was causing a nice little settle, and the guys in front of me were overcompensating with too much power, leading to the bolter. I wouldn't let that happen to me.

Finally, it was my turn. I called the ball and started my pass with a centered ball, purposely keeping my aircraft a little overpowered in anticipation of the inevitable sinkhole at the in-close position—my first mistake in trying to "game" my pass. I continued down, and the ball began to rise, so I tried to chip it down. I didn't want to pull too much power, because I thought the burble would help get me back on glide path. As I crossed the

ramp, however, the ball was parked high on the lens, and paddles gave me the words I had convinced myself I wouldn't hear, "Power back on… bolter, bolter, bolter."

I was frustrated with myself, partly because this was my first bolter in the Hornet. I felt better than this. I silently chastised myself for trying to "game" a pass, then came around the box with a sense of determination to fly a much better pass this time. Because of the multiple waveoffs and bolters from other aircraft, approach continued to vector many aircraft in the bolter-waveoff pattern, besides the aircraft that still were pushing from marshal. Based on my fuel state and the current traffic jam, this pass probably would be my last look at the boat before I had to divert.

Minutes later, it again was my turn to call the ball. This time, I worked to keep my jet at the proper power state. As the ball started to rise just a bit, I told myself, "This is not going to happen again," and I made a power-off correction. However, the correction was much more aggressive than needed, and, unfortunately, it just happened to coincide with the burble. A sick feeling came over me as I watched the ball go from slightly high to the bottom red cell. I went to full power just as paddles called out, "Power, waveoff, waveoff!"

I cleaned up, looked at my gas, and saw I was about 500 pounds over bingo. As I tried to convince all those listening I was calm and collected, I said to approach, "If you can give me a quick hook, I probably can get one more look." CATCC responded by giving me a divert signal, and I immediately felt sheepish, knowing my attempt to appear like I knew what I was doing seemed overzealous, considering the combined experience of all the senior aircrew sitting in CATCC who make these decisions. Upon hearing the signal for divert, I began my bingo profile. Little did I know the fun was just beginning.

As I flew toward North Island, I went through my feet-dry checklist and contacted the appropriate ATC facilities to let them know I was an emergency aircraft. Like many aircrew before me, I had mixed up the three golden rules of aviation: aviate, navigate and communicate. I had applied them in opposite order. While I focused on the quick frequency switches, I failed to do the most important part of my emergency procedure at that moment: Fly a good bingo profile.

I realized I was only 20 miles from the field and still climbing through 20,000 feet. We were working 40-mile bingos from the boat, and I had shot through my altitude of 18,000 feet. I immediately brought the throttles to idle and began to descend. Although I didn't realize it yet,

A sick feeling came over me as I watched the ball go from slightly high to the bottom red cell.

the extra time spent at military power, climbing through my profile altitude, was about to become a factor. Once I switched to SoCal approach, things began to get interesting. I checked in and asked about the weather. They reported 1,200 overcast. "Not too bad," I thought, knowing from past experience that North Island had the potential to be much more unfriendly in regards to weather.

While SoCal vectored me at altitude toward North Island, I noticed they practically had me overhead the field, coming from the west, rather then from south of the field to help line up for an approach to runway 36. I was about to ask them what their intentions were—mistake No. 2—when the controller asked me to do a 270-degree left turn, with an aggressive descent to 800 feet. Considering I still was at 16,000 feet, the word aggressive probably was an understatement. Up to this point on the divert, other than feeling frustrated with myself, I did not feel panicked about being an emergency aircraft. We practice procedures in the simulator, and hundreds before me had done it without incident. However, there was a frantic edge to the controller's words that suddenly seemed to infect me with a sense of nervousness, almost as if he knew something I didn't. With this thought, I blindly began to comply with their instructions of an aggressive, descending, 270-degree, left-hand turn, with a solid undercast layer over the city of San Diego staring back at me.

As I descended, approach asked me to continue my descent to 400 feet and to expect vectors for an emergency PAR into North Island. I punched through the goo at 2,000 feet, still in a left hand turn, and about five miles south of the field. I felt uncomfortable with my current situation: wrapped up in a turn at a high rate of descent, IMC with only a few thousand feet between me and the ground, and only a few miles from the approach end of a runway—not a good way to live.

As I turned on final, I dirtied up earlier than I wanted, considering I was trying to conserve as much fuel as possible. But, I needed to slow in a hurry to lose enough altitude to land. I descended through 1,200 feet, and, once again, a sick feeling entered my stomach, because I had not yet broken out of the clouds.

I continued my descent, cursed the inaccurate weather forecast, and finally broke out at 500 feet, only a few miles from the airfield. Much to my surprise, I was not lined up with runway 36 as I expected, but I was offset by about 45 degrees to the right of it. In following the GCA controller's heading directions and boresighting my HUD during the descent, I had not looked down at my navigational display to QA my position relative to the course line I had entered for runway 36. My display, incidentally, showed me well off course. Adding to my state of surprise, my canopy was streaked with precipitation. I hawked on a hard left turn to align myself with the runway, added full power, and simultaneously tried to assess my situation.

I realized the runway probably was wet, and, in conjunction with my carrier-pressurized tires, and the short runway of 8,000 feet, I would need every inch of runway to slow down. I glanced at my fuel and expected to see the NATOPS value our bingo profile puts us on deck with: around 1,500 pounds. Instead, my fuel display showed 1,100 pounds. A lap around the GCA box usually takes about 800 pounds for a Hornet, so I only would have 300 pounds on deck if I had to go around, and that assumed everything went according to plan. With a ceiling of 500 feet, and knowing the pattern altitude at North Island was around 2,000 feet, I thought it would not be smart to go around and remain VMC below the clouds, especially considering my lack of preflight familiarization with the airfield. My fear was to hit a tower I was not aware of, while trying to stay below the ceiling. I decided this pass was my only shot to land.

When I finally lined up with the runway, I already was over the threshold. I dropped the hook, even though I couldn't recall exactly where the short-field gear was located. I touched down a few thousand feet long, and I knew right away this landing was going to be sporty. Whether I actually had touched down before the arresting gear located at 1,800 feet or not, I didn't catch it. I extended the speed brake and got on the binders as hard as I could push with my feet. However, the aircraft barely decelerated. The antiskid was doing its job in preventing a blown tire by not giving me much braking action, but, unfortunately, this left me hurtling down the runway with less and less concrete in front of me.

Passing the 4 board at still more than 100 knots, I told myself there were two options left: Catch the long-field gear, or eject as my plane went off the end of the runway into San Diego Bay. As if reading my mind, tower came up over the radio and said, "Jason 405, be advised… there is no long-field gear rigged."

"I can't believe this is happening," I thought, as I pressed harder on the brakes, as if it would matter. I was willing the aircraft to slow down. The braking action was getting better as I decelerated, but I knew it was not

enough to stop me within the remaining runway. Just as I thought I had exhausted all my options, I saw the blue taxiway lights at the holdshort of runway 18 to my right. Deciding this taxiway would be a better option than going off-road, I jammed down on the high-gain NWS button and slammed down a full boot of right rudder. Surprisingly, the aircraft cornered nicely, and I swerved into the holdshort area. As I veered off the runway, the aircraft lost some of its traction, spun about 180 degrees, and came to a stop, facing the runway.

The only sound was the gentle, comforting hum of the jet—a deceiving sound, considering the sheer terror I just had felt moments ago. It took about 30 seconds before I could collect myself to key the mike and ask tower to send the fire trucks to check my brakes and tires. With my legs shaking, I taxied back to the transient line, crawled out of the jet, and kissed the ground. I didn't have the wherewithal to closely inspect my aircraft.

I would find out the next day, upon inspecting my jet, that I had shredded several layers of tread off the left main tire because of my "hockey stop." The jet obviously was down. The exact words of an AM1 working in a nearby hangar, who I had managed to track down hoping to get a second opinion from were, "Sir, I would not even go near that tire if I were you."

Fortunately, for me, I was able to arrange for a maintenance rescue team to come down from MCAS Miramar and change my tire and service the jet, enabling me to fly out to the boat later that afternoon.

Although a terrifying experience, I learned some important lessons this night. The first one applies to all those ball fliers out there: Never try to game a pass at the boat. Fly the ball proactively, and an inconvenience like the burble takes care of itself. Closely related to this lesson is aviating first. Too often, when we become task-saturated, we fail to do this most important step. Remember, a comm call isn't going to keep a plane from nosing into the dirt or, in my case, running lower on fuel because of a sloppy bingo profile.

The next lesson from this night was that I let an approach controller, in essence, become the pilot-in-command of my aircraft. As the pilot of an emergency aircraft, I should have been telling him what my intentions were, not asking what his intentions were for me. While a controller may have an emergency pilot's best interest in mind, it doesn't mean he or she knows the best way to get your aircraft safely on deck. On this night, I let ATC paint me into a corner. On any other night, it might not have been a big deal, but, when coupled with the other unforeseen factors, such as inaccurate weather forecast, arresting gear that is not NOTAM'd out of service, and an unfamiliar field, it turned into a very scary situation.

Another lesson to take away from this incident concerns airfield familiarization. Had I been more familiar with the airfield, I might not have made the decision that I had one chance to land. Examination of the airport diagram for NAS North Island shows there are, in fact, no towers or obstructions at 500 feet to the west of runway 36. The only obstruction is Point Loma on the other side of the bay, which would have been fairly easy to avoid, especially with all the tools Hornet pilots have in their cockpits, such as a digital map. Another quick look at the diagram shows the minimum safe altitude to the west is 1,600 feet, so, if I felt like I had lost track of my position relation to terrain, I at least could have climbed to that altitude to keep clear.

My decision to adhere to the Hornet rule-of-thumb for 800 pounds of gas for a GCA box was not necessarily a smart one, especially when stacked against the possibility of an extremely dangerous landing. Looking back, a better game plan might have been to go around, climb to 1,600 feet, turn to the west, and initialize my self-contained GCA. The gas numbers we use are conservative, and I easily could have used less than 800 pounds of gas if I had wanted to. The bottom line is, if I am piloting an emergency aircraft, I should be able to put my jet wherever I want, and it's ATCs' responsibility to keep other aircraft out of my way.

In an extremis condition, come up with a game plan to get your aircraft on deck in a manner that is comfortable for you, and relay that game plan to your controllers. Base your plan from sound headwork, which includes preflight planning. Don't wait for someone else to create a plan for you that is unworkable. I only wish it hadn't taken a close call for me to take this lesson to heart.

Lt. Reed flies with VFA-147.

The vast majority of our aircraft damage and losses are the not the result of enemy actions, but from our actions, which we identify as the Blue Threat. We are our worst enemy when it comes to causing mishaps. This article is an example of just such a mishap, a Hornet was damaged as a result of our actions, not the enemies. Two recent issues of Approach *(September-October 2006 and November-December 2006) have discussed the Blue-Threat topic, they are available online at: http://www.safetycenter.navy.mil/media/approach/default.htm.—Ed.*

Mishap Flight Lead on a Low-Level

By LCdr. Steve Kiggans

Being a flight lead is an immense responsibility, a lesson I relearned the hard way as a division lead on a low level one winter morning in Japan.

On the second half of an out-and-in, I briefed the route portion at Misawa Air Base. To my surprise, the charts we had did not contain the route restrictions pasted to them. Because I had briefed the same route less than two weeks earlier, I chose to brief the restrictions from memory.

I briefed the minimum altitude on the route to be 500-feet AGL, but other flight members thought it to be 200-feet AGL. After a short discussion, and regardless that we should have rechecked the route restrictions, I believed I had clarified the minimum altitude, as well as the need to stay above me as the lead.

Our Hornet squadron recently had flown plenty of low levels, so I assumed all flight members were proficient in the local procedures. My Dash 2 was a new pilot to the squadron but had plenty of experience, so I didn't question his ability in the low-level environment. Regardless of our one point of contention in the brief, I felt confident we safely would fly the route. After all, we thoroughly had briefed the low-level training rules and extensively had briefed each leg of the route. As the flight lead, I had set the minimum altitude at 500-feet AGL. I assumed that fact had been understood and would be followed by the other flight members—I assumed wrong.

Only a short distance after commencing the low level, while still at 700-feet AGL, my Dash 2, flying out of my view in a valley opposite me, hit a tree line with his right wing during a ridgeline crossing. He called an immediate "knock it off," so we climbed back to altitude, RTB'd, and did a controllability check en route.

Fortunately, the mishap aircraft recovered at NAF Atsugi, with only damage to the right leading and trailing-edge flaps, as well as an AIM-9X CATM seeker head full of wood. Considering most trees don't grow taller than 50 feet, he's fortunate to have walked away from the impact with simple damage to the wing and CATM.

My commanding officer ordered me to a human-factors board about two weeks after the mishap because of my poor performance as the flight lead. Two months later, following the release of the Class C safety-investigation report, my CAG directed an FNAEB (fleet naval aviation evaluation board) to be conducted on me. The board recommended an A-4 category for my poor flight leadership, demonstrated by not properly clarifying the minimum altitude and not recognizing the low proficiency of my wingman. The result of the FNAEB was assignment of probation status for six months; and loss of my flight-lead qualifications for three months. I did not fly for nearly five months throughout the FNAEB process.

The many review boards for the mishap pilot and myself, several nonpunitive letters of reprimand, and the probation period that resulted from this mishap, were difficult for my ego. They also led to more questions than answers in my head. One result, which came of this ordeal, was that the heavy responsibility of flight leadership was reinforced to me and all other aircrew surrounding the events of this mishap. As a flight leader, it was my responsibility to ensure the utmost in flight safety and to maintain proper flight discipline.

When I now fly low levels, I make sure every aspect is thoroughly briefed and understood by all flight members before executing low-level navigational training. As a flight lead, I make sure every member of my flight is ready to safely perform the mission. Although the flight lead assumes responsibility for overall conduct of the flight, it still is the responsibility of each flight member to make sure the rules are adhered to and the brief is followed. The results of not following the leadership of the flight lead can be fatal.

In this case, we were fortunate. Now I always take into consideration the personality, abilities, and skill level of the flight crews I fly with. I also make sure I understand all regulations pertaining to our flight and they are clearly stated to the aircrew I brief.

LCdr. Steve Kiggans flew with VFA-195 and currently is with VT-22.

FOUL-DECK LANDING

Photo-composite image.

By Lt. Nicholas Wyzewski

Taking a trap on the active runway is not how I had expected my strike-fighter weapons and tactics (SFWT), level III check flight to end. It was a cool, clear and windy March day on the Virginia coast, and my wingman (the evaluator) and I were on our way home from the warning area. Both of us were low on fuel—a fairly standard situation for Hornet drivers—but, it looked like we'd make it back to Oceana with no problem, despite the 100-knot westerly headwinds. Adding to our optimism was that NAS Oceana's active runways were the 32 parallels, which were perfect for us, because we were approaching from the southeast.

My wingman's fuel state was slightly lower than mine, so I planned to drop him off just inside the initial for a visual straight-in and continue into the break. Moments later, I reevaluated my fuel state and elected to take the straight-in, as well. The plan was to initiate flight-leader separation at the initial, fly simultaneous, visual straight-in approaches, and drop our landing gear and flaps on short final. Tower told us to plan our approaches to runway 32R, because there were several FA-18F aircraft from a neighboring squadron in a closed-traffic, field-carrier-landing-practice (FCLP) pattern on runway 32L. The plan was simple, no problem.

Everything looked good until tower said the approach-end arresting gear on 32R had been knocked out-of-battery. They asked if we could land long and touch down beyond the now slackened cross-deck pendant (CDP). Runways 32L and 32R at Oceana are both 8,000-feet long. Having to touch down past the short-field arresting gear would've reduced our available landing surface to about 6,500 feet, which would be OK in a lightweight, low-fuel-state Hornet, but without much room for error. I acknowledged we could accommodate, but, as a precaution, I asked if the departure-end arresting gear was rigged and in-battery. The answer, predictably, was "No."

For those of you keeping score at home, let me summarize. At that precise moment, no long-field gear was rigged on either of the two parallel, active runways. The short-field gear on 32R was out-of-battery, and

the short-field gear on 32L had been derigged for the FCLPs. *[Safety officer's note: Removing the short-field gear CDP is becoming common practice at NAS Oceana because of a recent increase in the incidence of arresting-gear pendants being knocked out-of-battery by Hornet aircraft rolling over them on takeoffs and landings. Section takeoffs, for example, are no longer permitted at NAS Oceana if the approach end arresting-gear pendant is rigged.]*

I thought this situation certainly was not ideal, but reassured myself it still didn't pose a major problem, as long as everything went smoothly from here on in.

There was tension in the air as they said the approach-end, arresting-gear cable on 32R had been out-of-battery when I landed.

I started to pay a bit more attention to my decreasing fuel state and was eager to get the jet on deck. As if in answer to my concerns, tower told me just a few seconds later the short-field gear on 32R was back in-battery, removing the requirement to land beyond the CDP. I acknowledged the call and felt relieved I would have the full 8,000 feet of runway for landing rollout, not knowing that the state of the arresting gear later again would come into play.

After detaching my wingman and generating some nose-tail separation on final approach, I lowered the gear handle and selected full flaps, with about two miles to go until touchdown. It looked like I would land with about 1,900 pounds of fuel. This amount was just a tad lower than our required SOP minimum-fuel state of 2,000 pounds, but nothing to worry about on a crystal-clear VFR day, right? Setting aggressive joker-bingo states in the preflight brief had allowed us to squeeze maximum training out of our airborne time.

As you probably can imagine, here is where things started to go wrong. Just after I felt the reassuring thunk of the landing gear lower into place, I immediately heard the "boop, boop, boop" of the landing-gear-warning tone. I then noticed the green position-indicator lights for both main landing gear were flashing, which indicated a dual planing-link failure. *[Safety officer's note: The planing link is a pivotal metal connecting rod about two feet long, which pushes the main wheel-tire assembly into its upright position, as the landing-gear struts unfold from the wheel well. A failure of either planing link on touchdown results in a main-wheel tire not properly aligned with the landing surface, and it can induce uncontrollable swerving tendencies during landing rollout. The standard procedure for Hornet aircraft with this malfunction is to make a precautionary-arrested landing.]*

I quickly initiated a waveoff, told tower of my landing-gear malfunction, and requested the overhead delta pattern for troubleshooting. I cleared my wingman to land behind me, because he did not have sufficient fuel to help me troubleshoot; he landed moments later. I broke out my trusty NATOPS pocket checklist (PCL) and dialed up the squadron base frequency on the AUX radio to confer with the SDO. I reported my dual planing-link-failure indications and described my plan of action, namely a short-field arrested landing. I also told him of my low fuel state.

After a short discussion with the SDO, who concurred with my plan for a field arrestment, we decided to request a visual inspection of my main-landing gear from one of the aircraft in the FCLP pattern on runway 32L, just to confirm the position of the main landing-gear wheels. I declared an emergency with tower, told them of my need to take a trap, and lowered the hook handle. I asked tower if they visually could confirm my landing-gear position. They replied almost immediately, saying it looked as though my landing gear was down. They also confirmed my arresting hook was

down. I rogered up their transmission and reiterated my need to take a trap.

One of the Rhinos in the FCLP pattern spoke up and said he would join up with my aircraft to provide a visual inspection. I agreed, and he began his rendezvous. I offered to use an off-duty runway for the arrestment, not wanting to unnecessarily foul one of the two available duty runways while waiting to be towed clear after landing. Tower suggested runway 5R, which, at the time, sounded like a good idea. Runway 5R is Oceana's longest at 12,000 feet, and, from my current position in the overhead delta pattern, I easily could set myself up for a right downwind leg and subsequent right base leg. A lot of traffic still was in the FCLP pattern on 32L, along with multiple inbound aircraft for 32R, many also low on fuel.

By now, my wingman, who was safely on deck and listening to my discussion with tower, advised that the existing crosswind on runway 5R likely was out of limits for a normal arrested landing. I later would learn the reason for having five Rhinos in the FCLP pattern on Oceana's runway 32L was because the winds were out of limits for normal FCLP operations at NALF Fentress, our nearby auxiliary field, which has a single 8,000-foot runway, oriented 5 and 23. This situation forced the use of Oceana's 32L for FCLP and temporarily reduced by half Oceana's ability to handle high-volume, VFR jet traffic. Thus, unfortunately, the active runway (32R) probably was the best option for my arrestment.

Tower called the winds out of the northwest at 24 knots. The last thing I needed was a stiff 90-degree crosswind to further complicate my directional-control problems with a suspected landing-gear malfunction, especially if my hook skipped the arresting cable. I set up once more for runway 32R. Several inbound aircraft were waved off to make room for me in the pattern, and I turned back toward the downwind for 32R. I sensed the tower controller was becoming task-saturated, and, because of my low-fuel state, I needed to start making things happen—and soon.

I told tower I'd be unable to land on runway 5R because of the crosswinds and reiterated my intention to take an arrestment on 32R. I set myself up for a short hook to 32R and was more than ready to get the jet back on terra firma. I already had reached my squadron's SOP emergency-fuel state of 1,500 pounds, and I had no desire to reverify the accuracy of the FA-18's fuel-quantity-sensing system. By the time I started my final-approach turn, the Rhino had joined and visually confirmed my gear appeared down and locked. I told tower one last time of my intention to take a trap on 32R and, in the heat of the moment, thought I had heard my clearance to land. A postflight review of the tower audio tapes subsequently would reveal I never actually was cleared to land. But, more on that later.

I rolled out on final approach to 32R, flying a slightly high "ball" until I could see the short-field, cross-deck pendant through my HUD, at which point I placed the flight-path marker (velocity vector) directly in front of it. Crossing the runway threshold, I saw the red waveoff lights flashing on the runway edges and on the Fresnel lens. Not believing someone would wave off a low-fuel-state emergency aircraft, I quickly queried tower about the waveoff lights and immediately received the urgent barked reply, "Ram 11, go around, right side."

I thought it was too late for me to prevent touchdown, so I quickly snapped back, "Ram 11, unable."

I continued the approach and uneventfully trapped, or so I thought.

Ironically, on landing rollout, all planing-link-failure indications disappeared, and I again was in possession of a fully-operational Hornet, though one now stuck in the arresting wire. The maintainers later would discover faulty proximity switches, which caused the erroneous indications. Once the crash crew had pinned my landing gear, I taxied back to the line and shut down. No harm, no foul, right?

When I climbed out of the jet, the crash crew was on-scene to investigate my aircraft's condition and determine what the problem had been. There was tension in the air as they said the approach-end, arresting-gear cable on 32R had been out-of-battery when I landed. I thought it was in-battery, and, besides, it had worked just fine. Furthermore, the field-support crew had been standing in the grass just left of the runway edge, trying to reset the arresting-gear engine to an in-battery condition. They were near the purchase cable as it paid out when yanked by my speeding Hornet. I wondered, "Was anyone hurt?"

I absolutely had no idea the gear had not been in-battery. In fact, the arresting-gear status had not been mentioned on the tower radio since I'd first been told it was back in-battery on my initial approach, seemingly long before this chain of events began. There was minor, repairable damage to the arresting-gear engine.

After a thorough review of this incident, it was determined no one in particular was at fault. Everyone

shared equally in a bit of the blame and learned several important lessons. My eagerness to maximize training on my SFWT level III checkride led me to push the limits of Hornet endurance. I chose a lower bingo-fuel state than may have been advisable, given the strong headwinds and high volume of traffic in Oceana's airspace. A few hundred extra pounds of fuel sure would've eased my mind as I troubleshot the planing-link-failure indications; it certainly would've removed a bit of the urgency I felt to land. Additional fuel would have given everyone time to take a deep breath, assess the situation, and communicate more effectively.

My low-fuel state and sense of urgency stopped me from asking the right questions, and I ended up taking a more directive approach. I landed—without clearance to do so, no less—with only 1,300 pounds of fuel remaining, below our SOP emergency fuel state. But, I still had enough fuel to have flown another lap around the landing pattern, if required, to clear up any confusion about arresting-gear status or landing clearance. The Hornet's fuel-quantity-indication system is remarkably accurate, and stories abound of Hornets landing at considerably lower fuel states than mine, without flaming out either engine. I am unsure if I could've successfully initiated a waveoff when I saw the red lights, but the moment's hesitation caused by asking tower about them certainly guaranteed I wouldn't be able to do so. Hindsight is always 20/20, and I still am not sure I could have done anything differently given the data I had.

The aircraft was returned to the maintainers without incident, I passed my checkride, and, most importantly, no one was injured.

Lt. Wyzewsk flies with VFA-83.

FOUL-DECK LANDING

Squadron safety-officer note: Ultimately, it was a breakdown in communications that led to Ram 11's arrestment on a foul deck, planing-link malfunction notwithstanding. Thorough review of the tower audio tapes provided several important facts. After their initial in-battery call (before Ram 11's first self-initiated waveoff), tower never told him the short-field gear on 32R was out-of-battery, nor did they tell him there were personnel in the infield working to reset it at the time of the arrested landing. They had no reason to do so at that time. Visual indications from the tower seemed to confirm an in-battery condition.

The visual indication the tower controllers use to spot an out-of-battery arresting-gear condition is a simple, small strobe light mounted on top of the engine housing. When the CDP is knocked out-of-battery, an electric circuit is closed, which activates the strobe light. The flashing strobe is visible from the control tower and indicates a foul deck. Standard procedure at NAS Oceana requires the field-support crew immediately to disable the strobe light upon arrival, before resetting the arresting gear itself. This requirement is a function of the design of the arresting-gear engine and the position of the strobe light's electrical connection. After the gear is reset, the field crew provides a verbal courtesy call to the tower via FM radio to confirm the gear is back in-battery.

On this day, the strobe light was disabled before the field crew's efforts to reset the arresting gear, indicating to those looking on from the tower the gear was, in fact, back in-battery. Tower was unable to establish communications with the field crew (whose hand-held FM radio was drowned out by the noise of Rhinos in the FCLP pattern on 32L) and thus verbally could not confirm an in-battery condition prior to Ram 11's final approach. Ultimately, another Oceana field-support crew, en route to the 32R infield to assist those already on-station, realized the impending danger from their vantage point. They immediately called tower, from the comparative quiet of their truck, urging them to wave off Ram 11.

As a result of this incident, a new procedure has been established at NAS Oceana. After initially disabling the strobe light, but before beginning work on the arresting-gear engine, the field-support crew will use a "dummy" electrical plug to reclose the strobe-light circuit, allowing it to resume flashing while the arresting gear is being reset. When complete, the field crew will verbally report "in-battery" to the tower via FM radio. Until these "dummy" plugs become available, Oceana field-support crews also will maintain two-man integrity on all arresting-gear-reset procedures. One individual will perform the required maintenance on the arresting-gear engine, while another, a dedicated safety observer, visually will clear the "groove" for approaching aircraft and monitor the FM radio for advisory calls from Oceana Tower.—LCdr. Jason Velivlis is the aircraft safety officer in VFA-83.

Patient 296

By Cdr. Skip Trahan

The jokes began as soon as the flight schedule was published the day earlier and continued through the brief the following day. Only one member of the five-person crew was under 30. And the only reason the 23 year old 2nd crewman had been scheduled with the "Geritol gang" was to be on hand in case one of the senior members broke a hip getting into the aircraft. So goes the normal, friendly banter of forward-deployed aviation operations.

The nine-line call for launch came at 1825, a little more than one hour past sunset, on a starlight only night. The mission was to pick up a wounded soldier at Navistar (Iraq-Kuwait border-crossing station) and transport him to the level III (surgical-care unit) at Arif Jan. The patient was characterized as "urgent surgical."

The route was preplanned. As the crew assembled in the aircraft, weather was the biggest concern. Strong seasonal winds from the south had pushed moisture off the gulf and combined it with dust to bring the forecast weather to 800-foot ceiling and two-mile visibility in the area of pickup. We also were told, "Rapidly degrading conditions of less than 400 meters visibility to the south." There are no instrument approaches at Navistar or Arif Jan, or instrument routes between the facilities.

With the weather providing a formidable obstacle, the "Geritol gang" had two positive factors in its corner. The first was a forward-looking-infrared-radar (FLIR) equipped aircraft, and the second was the experience provided by 9,980 combined flight hours across a crew with three WTIs (weapons-training instructors).

Launching to the north from the NAAD base of operations at Udairi Army Air Field, the crew immediately encountered the 800-foot ceiling and 400-meter visibility predicted for the southern portion of the flight. From 500 feet (required altitude to avoid most hazards in Kuwait), the ANVIS 9 NVGs (night-vision goggles) allowed the crew to see only the ground below the aircraft, but barely. The IR searchlight was tried

The 2515th Navy Air-Ambulance Detachment (NAAD) is a provisional, composite squadron which provides land-based medevacs. The squadron of three MH-60S and three HH-60H aircraft includes 126 personnel and aircraft from HSC-21 in San Diego, Calif., and HS-15

in Jacksonville, Fla., as well as helicopter SAR corpsmen from units around the world. Their task is to provide two-ship, alert-15 aircraft, 24/7 for response throughout all of Kuwait, the North Arabian Gulf, and Southern Iraq. A total of 296 personnel have been medevac'd by the NAAD since assuming the watch in November 2005.

but provided a negative effect, so its continued use was abandoned. Only FLIR provided the crew with a horizontal view of about 1.5 miles. Because of the moisture in the air, the image was mushy at best; however, it provided sufficient visual cues for operations—although no horizon. The aircraft flew at 90 knots to improve pilot-reaction time to hazards. With one pilot flying and the other watching ahead with the FLIR and providing navigation calls, the high-tension wires, poles and antennas that crisscross the route to the landing site all were avoided.

The landing at Navistar revealed a young IED-attack victim from Southern Iraq, who had been transported from point of injury by ambulance for airlift. He had not been stabilized by any higher care provider than a field medic.

Launching back into the weather, the crew discussed alternatives if either weather or patient conditions

degraded. The flight from Navistar to Arif Jan was estimated at one hour, based on navigationally safe airspeed.

Ten minutes into the flight, the patient's blood pressure dropped to 83 over 30, because of excessive bleeding from a lower-extremity wound; the patient was failing. The corpsman recommended an intermediate stop at Udairi's level II medical clinic to further stabilize the patient. The medical-regulating officer (MRO) had recommended a direct flight because Udairi's clinic did not have a blood supply. Weighing the options, the crew agreed with the corpsman's plan. It would give more of a lease on life to the patient, and it would give the aircrew a chance to update weather and get additional fuel. The aviation concern was 45 minutes of flying south into predicted worse conditions.

While getting more fuel, the weather update from local observations indicated the weather to the south was improving. With plenty of fuel and a now stabilized patient, the crew launched into the weather and headed for the surgical unit. Eight miles to the south of Udairi, the copilot got a momentary case of the leans from an illusion created by a ground-vehicle's headlights on an adjacent highway that angled away from the aircraft, which was in a turn. Once the physiological episode was identified, the situation quickly was rectified by leveling the wings and both pilots immediately going to a cockpit instrument scan.

Fifteen miles to the south, the weather was much better, and the crew increased speed to get the patient into surgery sooner than expected. The rest of the flight was uneventful.

Upon return to Udairi, the rest of the night was spent removing the litter-management system, floor armor, and floor boarding to clean up the biohazards created by the soldier's injuries. The NAAD learned that, in postop, the young soldier was "not out of the woods yet" but in stable and improving condition. A few days later, the patient's condition had improved greatly, and he was well enough for transportation out of theater.

What are the take-aways from patient 296?

Medevacs are a composite mission, based on patient care and aviation considerations. The conditions of either will impact decision-making for the crew. A decision to press south, without the intermediate stop to stabilize, could have proved disastrous for the patient if his condition had worsened and/or the aircraft had been forced to abort because of weather and return to other than adequate care. This scenario is a challenge for mission commanders because of the rotary-aviation community's lack of medical knowledge. The functional leadership role of the corpsman was critical in making the right choice. The importance of the corpsman's role in the possible scenarios and options must be discussed in the brief. This evolution is crew-resource management (CRM) in action.

The mix of technology and experience tipped the scales in favor of our mission success. A less experienced crew with the same advantages provided by FLIR, or a seasoned crew without a FLIR, may not have yielded the same results. Leaders are challenged to make decisions on mission "go or no go" with many variables. It becomes a further challenge when leadership takes on a mission and succeeds, but leadership may not approve such a mission for a less equipped or experienced crew. We have no question this soldier would have died without an air ambulance, and every crew strapping on an aircraft, regardless of their experience, realizes they may be the ones to tip the balance of the scale in one direction or the other. Every crew says, "Send me."

FLIR is critical for night overland missions, and its integration for navigation capability is a must. Use of FLIR for navigation technology (flight-path-vector mode) has existed for nearly two decades in the Army and Air Force, yet Navy helicopters repeatedly have "missed the boat" by not capitalizing on the full potential of this capability. The synergy of hardware and integration is the path the Navy must take. The overland missions will continue, and the Navy will be tasked to participate; this tool is a "must have."

Finally, ORM does not rule out performing high-risk missions—it is not a safety program. ORM challenges us as aviators to meet the risk with adequate personnel planning, equipment, training, experience, and sound decision-making to successfully accomplish the mission.

Cdr. Trahan is the commanding officer of HS-15 and the 2515th NAAD.

Dehydration Will Ruin a Mission

By Lt. Jasmine Gough

I just had arrived for the first time at Al Asad Air Base, Iraq, from USS *Enterprise* (CVN-65), in support of an Operation-Iraqi-Freedom (OIF) detachment. The transit was a 4.5-hour flight from the carrier to the desert. In the past, I would dehydrate myself for these long flights for two reasons. First, I'm a female in a mostly male squadron. Second, I haven't had to use the piddle pack and relieve myself yet. I didn't feel I needed to drink as much because the weather was not very hot, and I wasn't sweating.

Upon my arrival in Iraq, I got my bearings with a quick tour of the base. The second day was a turnover day, so there was no flying. When the schedule came out on the third day, I was scheduled for my first OIF flight, a 6.7-hour flight.

"OK, it'll be all right", I thought. I can learn to relieve myself in the jet. I'm in the backseat alone, which is as good a time as any to practice. I had all the required paraphernalia, and I even had gotten a brief from a senior female aviator before I left on deployment. I've also had multiple conversations with other female aviators on this subject—I felt ready. But, I underestimated the effects of a dry-heat location.

Being on the ship in the Gulf, I got used to the sweaty humidity and quickly forgot about dry heat. I drank plenty of water on the boat, because after a day launch in the middle of summer, I would return drenched and obviously needed fluids. However, Iraq is so hot and dry, you don't realize you're still sweating.

Looking back, I had not realized how dehydrated I was before my first flight. The first night I arrived, I had a headache. I just figured it was a random headache that would go away by morning. The second day, I had a little more of a headache, but I guessed that exercising would help loosen some tension or stress. The third day, the day of my flight, I started with a short run on the treadmill and tried to drink more water. By midafternoon, my headache was much worse. I thought lying down and taking a short nap would help, but it didn't.

By dinnertime, the pain was excruciating. I thought if I had something in my stomach, I'd feel better, and the headache would go away. Then nausea set in, which was horrible, because I had nothing in my system. My head hurt so bad; it was the worst I've felt in a long time. I found a JO to take me to medical. I was embarrassed because I would have to tell the doc what I already knew: I didn't drink enough water, and I was going to be removed from the flight schedule.

They took some vitals, asked me some questions, and started the IV. After taking on one liter of saline solution, I was good to go. The flight doc prescribed antinausea medication, which downed me for an additional day, because of the possible drowsy effects that follow. I was instructed to drink two 1.5-liter bottles of water and one 1.5-liter bottle of Gatorade a day. I don't even like Gatorade, but I didn't want to miss any more flights.

The next morning I felt great. I downed plenty of water, completed my first OIF flight, and used the relief tube twice in one flight, another 6.7-hour mission. I even drank 1.5 liters of Gatorade later that day, after I found a flavor I liked.

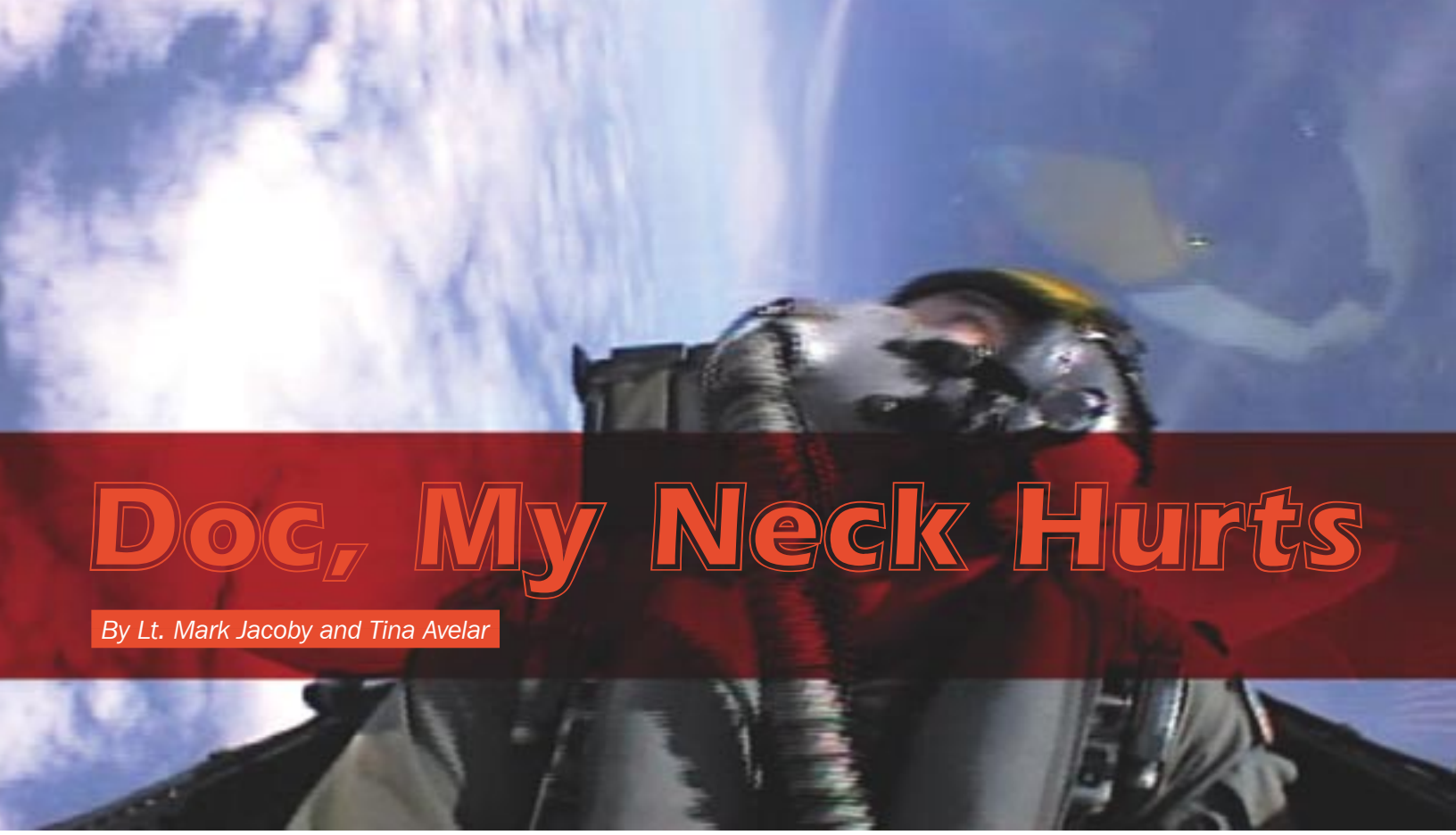
Looking back, I intentionally was dehydrating myself for that first flight, and I know a lot of female aviators who do the same. Also, I am not in the habit of regularly drinking enough water, let alone drinking enough while in the desert in the middle of summer. I now drink an average of four to five liters of water a day, and I don't worry about using a piddle pack in the jet anymore. If the boys can do it, so can the girls.

Lt. Gough flies with VAQ-137.

While sweating is an obvious means of water loss, it is not the only one. "Insensible losses" are those that you don't notice, and include water lost from dry skin or in exhaled breath. Insensible losses are especially important in dry environments. Because aviators often work in hot aircraft and breathe dry aviation oxygen, they can lose surprisingly large amounts of water from their skin and lungs without realizing it.

Don't depend on how much you're sweating to judge your hydration status. The best strategy is to drink plenty of fluids, and to make sure you're frequently making plenty of light yellow urine. When your urine is dark, the quantity is small, or you don't go very often, you're already dehydrated!—*Cdr. Kevin E. Brooks, MD MPH, aeromedical analyst, Naval Safety Center.*

For a related Approach *article on this topic, visit: http://www.safetycenter.navy.mil/media/approach/issues/mar03/ToPeeOrNot.htm --Ed.*



Doc, My Neck Hurts

By Lt. Mark Jacoby and Tina Avelar

Introduction

As a flight surgeon and physical therapist, respectively, with a fleet-replacement squadron (FRS), we know neck injuries are a common occurrence among aircrew. When questioning instructor and student pilots, a majority complained of neck pain at some point during their flying careers. The causes of their complaints included high G forces, inadequate stretching, weak neck muscles, and a failure to preposition the head before hard turns. Given the impact this problem has on aircrew, we want to share some information and educate the aviation community.

Risk Factors

Whether you are the pilot-in-command or a crew member, each aviator is at risk for experiencing complications from G forces. Risk factors may increase the chance of developing a disease and can be categorized as either controllable or uncontrollable. For aviators, the controllable risk factors are those which can be changed to prevent injury; they include smoking, weak neck muscles, prior injuries, inadequate warmup exercises, and poor posture. Research suggests smokers have a three-to-four-times-higher risk of developing neck injuries. Nicotine and carbon monoxide contained in cigarettes can exacerbate preexisting disc degeneration by inhibiting the discs' ability to absorb nutrients they need from the blood. The result can be prematurely dehydrated, less pliable (degenerative) intervertebral discs. Making lifestyle modifications can decrease your risk of injury.

There also are risk factors that cannot be changed. These uncontrollable factors include fatigue, coughing, sneezing, heavy lifting, vibrations, high G head turns, unexpected hard turns, repeated exposures of G forces greater than four Gs, and the use of required equipment, such as helmets and night-vision goggles (NVGs).

G Forces

You'll recall from your aerospace-physiology lectures that G forces are the result of inertial forces acting upon the body. This is the same force pulling you toward the earth. The most familiar type of this force is acceleration, the change in velocity per unit time, and is known as gravity (G). On earth, this pull causes the body to have a certain weight. When an airplane accelerates,

Risk factors

Controllable	Uncontrollable
Weak muscles	Fatigue
Strength/flexibility	Coughing/sneezing
Prior injuries	Heavy lifting
Inadequate warm up	High “G” head turns/ unexpected hard turns
Posture	Repeated exposure of G forces > four Gs
Smoking	Equipment design

slows down, or changes direction, the occupants appear to move, be thrown, or centrifuged (they experience an acceleration) in the opposite direction. During dynamic flight, it is important to realize the added effect G forces have on the body. For example, if your head weighs 10 pounds at 1 G, it will weigh 60 pounds under 6 Gs. This force places tremendous stress on the supporting structures of the neck.

Neck Anatomy

The neck is composed of seven bones (C1-C7), known as cervical vertebrae. These vertebrae serve as framework upon which the skull rests. Between each vertebrae are flexible, gel-like pads called intervertebral discs. These discs help give your spine its curves and flexibility; a curved, flexible spine is stronger than a straight, rigid one. These discs also separate and join your vertebrae together. Without them, your spinal bones would grind together whenever you walked.

Discs also affect your height. You are about one-quarter to one-half-inch taller when you wake up than when you go to sleep. Why is that? Because gravity makes your discs thin a little when you walk and sit during the day, and they expand a little while you lie in bed. Astronauts gain about one inch in height as a result of weightlessness.

The back of each vertebrae form a tube-like canal of bone that runs down the length of the back. The spinal cord and nerves travel through this space, called the spinal canal. A pair of spinal nerves exit each vertebra through small openings, called foramina (one to the left and one to the right). The nerves connect to the muscles, skin and tissues of the body, providing sensation and movement to all parts of the body. The spinal cord and nerves are further supported by muscles and ligaments attached to the vertebrae.

Causes of Neck Pain

There are several causes of neck pain. The most common is a traumatic injury, such as whiplash. This injury consists of a tear or bleeding in the supporting neck muscles, ligament ruptures, or disc material tearing away from the vertebra. Other causes involve the intervertebral-disc space and includes disc bulge, herniation or degeneration. Neck pain can be divided into acute versus chronic causes.

Most acute injuries in the cockpit occur when maneuvering your head under high G forces. The severity of the neck injury will depend upon how much damage occurs to the muscle, nerve or intervertebral disc. This damage can range from small partial muscle or ligament tears to overstretched nerves and shearing-stress injury of the intervertebral discs. Outside of the cockpit, whiplash is a common acute injury sustained during an auto accident. This is typically termed a hyperextension and/or hyperflexion injury, because the head is forced to move backward and/or forward rapidly beyond the neck's normal range of motion. The unnatural and forceful movement affects the muscles and ligaments in the neck. Muscles react by tightening and contracting, creating muscle fatigue, which results in pain and stiffness.

Chronic injuries occur over time and with prolonged high G-force exposure. Compared to the nonflying community, many aircrew begin to develop signs of arthritis and disc herniation much earlier when compared to nonflying personnel. Loss of intervertebral-disc space and stimulated-bony formations, known as osteophytes, are early signs of damage.

Osteoarthritis is a common joint disorder causing progressive deterioration of cartilage. The body reacts by forming new bone, termed osteophytes (bone spurs), that impact joint motion. When tissue damage does occur, chemicals are released. These chemicals stimulate pain receptors and induce inflammation. Most people experience some sort of pain or stiffness. If the injury affects the nerves, as in a disc herniation compressing a nerve root, you can experience neurological symptoms, such as shooting-electrical pains down your arm.

You need to see the flight surgeon immediately for any numbness, tingling, notable muscle weakness, severe and/or sharp pain, or after seven to 10 days of mild pain and decreased range of motion.

Depending upon your symptoms and physical exam, the flight surgeon may elect to order imaging studies, such as X-rays, CT, or MRI, for further evaluation. Also, you will be treated with analgesics, ice, heat and/or massage, strengthening and/or stretching, and rest. It is important to have your flight surgeon examine you; don't try to self-diagnosis or self-treat your injury. If your injury is minor, you may be treated with an anti-inflammatory, such as Motrin, and still be allowed to fly. For more serious injuries, you will be med down until your symptoms have resolved.

Lt. Jacoby is a flight surgeon with VFA-125, and Ms. Avelar, MPT, is a physical therapist.

When to see the flight surgeon

Immediate
Any numbness, tingling or electrical-like shooting pain
Notable muscle weakness or decreased grip strength
Severe and/or sharp pain
After 7 to 10 DAYS
Mild pain
Decreased range of motion

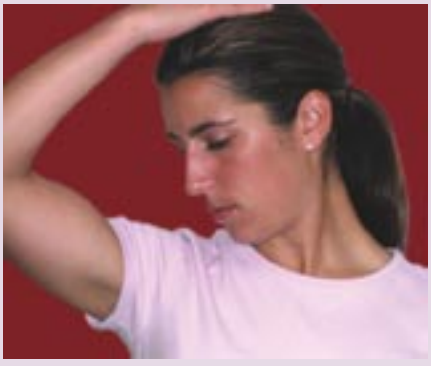
Prevention and Treatment

Having read this far, you may be asking yourself, "Is there anything I can do to prevent my neck from hurting?" As mentioned earlier, one of the controllable-risk factors includes stretching and strengthening. Unfortunately, other than by word of mouth, no formal education or training protocol exists, instructing aircrew on such stretching and strengthening exercises. Following are a few key areas to address before, during and after your flight. Stretches can be performed with or without overpressure from one's hand. If you experience stretching pain when you get into each position, no overpressure should be applied.

1. Muscle Endurance Training and Stretching

(a) Stretch the upper trapezius and levator scapulae muscles both pre and postflight. Using general muscle stretching principles, it is recommended to hold each stretch for at least 30 seconds to allow the muscle fibers to lengthen properly. These stretches should be repeated three times per side for a gradual static stretch. It is advised to stretch both pre- and postflight for maximum benefit.

Upper trapezius stretch



Levator scapulae stretch

(b) Strengthen the deep stabilizing muscles in the front of your neck. Lie on your back and produce a static contraction by performing a head-nodding motion, bringing your chin toward your throat. You should feel your neck lengthen and a little more pressure on the back of your head. The small muscles in front of your throat should contract. Hold this contraction for 10 to 20 seconds, and repeat 10 times. Other positions can be used, such as on hands and knees, once the neck flexors build endurance.

Starting position

Ending position

(c) Build isometric strength in the cervical extensors, lateral flexors, and deep rotators by holding static contractions, with moderate pressure into your hand, for 10 to 15 seconds. Repeat five times; perform twice per day.

Push head back into your hand and left (cervical extensors) (lateral flexors)

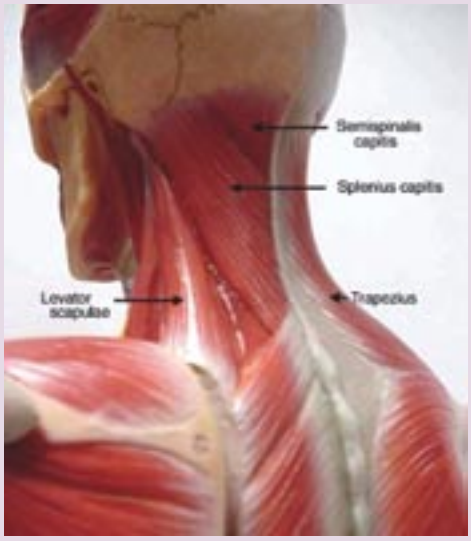
Push head toward right side

Push your cheek into your hand as if producing a turning motion, without moving your head (deep rotators)

(d) Participate in regular sessions of aerobic training. This has been shown to improve a pilot's "staying power" by allowing rapid recovery from any straining maneuver while pulling high G forces.

2. Posture

Build postural-muscle endurance to support the cervical and upper thoracic spines. Exercises such as seated rows, lat pull downs (performed three sets of 15 repetitions at a moderate weight), and squeezing your shoulder blades together for 10 seconds, 10 times per day, will help improve the strength and endurance of you posture muscles. These exercises will prevent a head forward, shoulders-rounded posture that can place more stress on the neck.



3. Prepositioning the Neck

Bracing your head and upper body on the headrest before pulling high +G forces, maintaining your neck position for the duration of the +G turn, and using the canopy rail while steering with your left hand to make a right turn are all methods that can be used to prevent acute, inflight, neck injuries.

The bottom line is that your job requires a highly stable neck. Stretching and exercise provide optimum physiologic performance. Weak neck muscles cause neck fatigue, stiffness and pain, and higher risk of injury. Strong neck muscles mean less frequent and less critical neck injuries.

Staying Ahead

By Lt. David Stern

When I was preparing to leave for flight school, I remember a close family friend, who had been a pilot for many years, telling me, "The three most useless things to an aviator are the altitude above you, the runway behind you, and 10 seconds ago." I put that advice in my pocket and didn't think about it much until four years later, when I was one month into my first deployment as an SH-60B pilot.

Our ship, an *Arleigh Burke*-class destroyer, was transiting unaccompanied through the Indian Ocean (IO), en route to the Northern Arabian Gulf. It was monsoon season in the IO, and we were experiencing the typical weather for the season: 10-to-15-foot seas, 30-knot winds, and isolated rain showers. Both of the detachment's aircraft had been down for maintenance since we had passed through the Straits of Malacca a day earlier. The detachment pilots were anxious to start flying again and work on currency requirements.

We launched before sunset and had planned to conduct SAR training and identifying surface contacts ahead of the ship's plan of intended movement (PIM). Forty-five minutes after launching, our sensor operator (SO) notified the crew a return on our surface-search radar indicated a significant line of weather in front of our ship's PIM. The weather stretched across the entire radar horizon, approximately 60 miles. We had about 1.5 hours before the ship would drive into the leading edge of the weather.

Our scheduled recovery time still was 2.5 hours away. We discussed our options and decided we would recover early. We told the ship of the situation and requested flight quarters be set in one hour. That would have us on deck 30 minutes before the ship entered the heavy weather. In any event, the ship always could turn around and steam away from the weather if it looked like we would be cutting it close.

We had a solid plan—so we thought.

We watched the weather and the ship close each other on radar, and we knew our timeline increasingly was becoming tight. The ship was taking too long to set flight quarters, and the weather was moving faster than expected. The winds also had picked up to the point where, if the ship turned away from the weather, the winds would be outside the limits of the recovery envelope. Ten minutes before our rescheduled recovery time, we plunged into the weather, and everything outside turned black. Rain covered the windshield, and the aircraft shook from the turbulence. Looking outside was not only useless but disorienting, so I concentrated like never before on my flight instruments. On radar, the heavy weather surrounded us for miles, and we knew we didn't have the fuel to wait it out.

Why had we cut it so close? I began to wonder about diverting to India, which was 60 miles to the east. While we waited for a green deck and orbited at the initial-approach fix (IAF) for the shipboard TACAN approach, I couldn't see any of the ship's lights. Once cleared, I commenced the approach and picked up the masthead light three-quarters of a mile out, and the flight deck at one-half mile out. I flew a slow and steady approach, but because of the now 40-knot headwind, low visibility, and intense rain, we ended up in a high hover aft and left of the flight deck. At this point, the helicopter-aircraft commander (HAC) in the left seat lost sight of the flight deck and called for a waveoff. Still having the landing environment in sight and not

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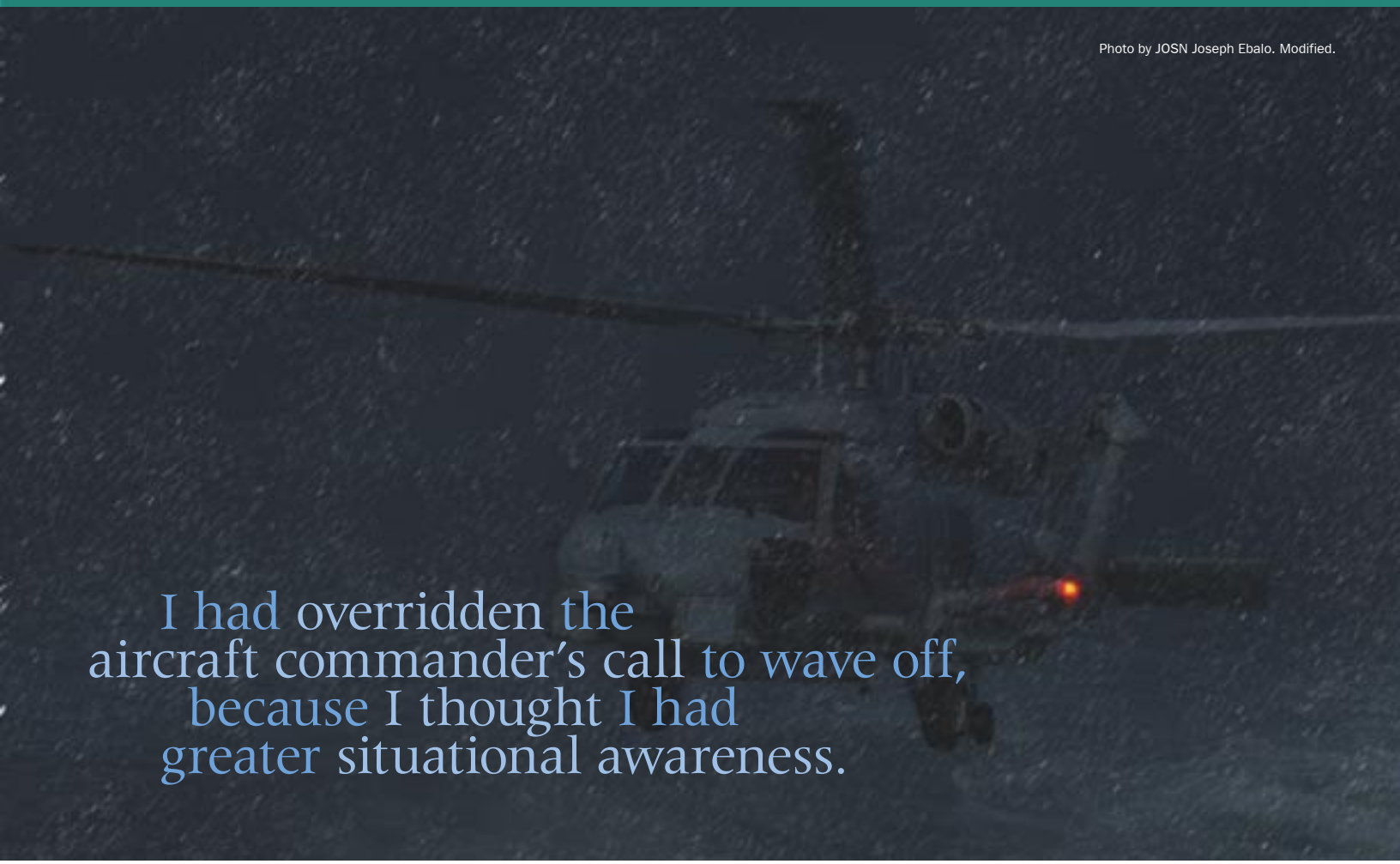


Photo by JOSN Joseph Ebalo. Modified.

I had overridden the aircraft commander's call to wave off, because I thought I had greater situational awareness.

wanting to face the challenging transition back into the blackness of the storm, I said I only needed to come down and slide right to regain the center of the deck. With no response from the HAC, I took silence as consent and continued my approach to an uneventful landing into the trap.

I was glad we were safe on deck but felt guilty I had usurped the HAC's decision to wave off. I felt foolish for not having avoided the whole situation by recovering much earlier.

We had discussed the weather in our NATOPS brief but had not discussed how far in advance we would recover if things got worse. We also had not briefed the emergency-divert possibility and were caught unprepared. We reevaluated and made the right decision to recover early. But, having missed several flights during the preceding days, we cut our recovery time too close in an ill-advised attempt to get as much out of the flight as possible.

At the end of the approach, I had overridden the aircraft commander's call to wave off, because I thought I had greater situational awareness. In doing so, although I had recovered safely, I wrongfully overruled his authority and broke down our crew-resource management. During the debrief, we discussed both the good and bad decisions we had made, but inevitably, we had put ourselves in a situation which easily could have been avoided had we simply heeded the wisdom of an old aviator's advice.

Lt. Stern flies with HSL-37.

Music Please, Maestro

By Lt. Robert Hanvey

It was a good deal hop. I was one of the designated E-2C air-power-demonstration pilots, and the conditions were perfect for sharpening the air-wing-demo program. The airshow went well, the formation separated, and all aircraft made their approach to the Case I overhead pattern for recovery. On the way in, one of the Hornet pilots recommended a Case II approach because a cloud layer had moved in over the carrier, which made the overhead stack a difficult option.

With the adrenaline pumping and each aircrew ready to recover, more than 20 airplanes checked in with marshal, and they simultaneously requested holding instructions; radio chaos resulted. With each communication, more confusion ensued.

"601, marshal on the 190 at 28, angels 13."

"Marshal, was that for 601 or 603?"

"Correction, 603, marshal 190 at 28, angels 13, expect manual push."

You get the idea.

As hard as CATCC tried, it was the same confusion for every crew airborne.

The Hawkeye, with its new eight-bladed prop, is a climbing machine and can do 300 knots, but it still takes some time to head out 30 miles and climb to 13,000 feet. About the time we arrived in holding, it was our turn to commence the approach. My copilot acquired the ship at seven miles, and we proceeded visually. Our fellow E-2 was directly in front of us at two to three miles.

As we approached five miles, we saw this wall of water—yes, a wall. About two miles in front of the ship was a torrential thunderstorm, which as naval-aviation logic would dictate, the ship was driving directly toward.

My copilot joked, "If we just did a straight-in instead of a break, we could land before the rain hits."

We were about to key the mike and suggest the ship switch to a Case III recovery, fully controlled by carrier-air-traffic-control center (CATCC), when the ship switched everyone. Of course, the 10 aircraft still airborne had to switch back to button 16 for a new controller. Don't forget, two Hawkeyes still were airborne. The more typical situation is a single Hawkeye during Case III operations.

Start the music, maestro, the Hummer dance begins.

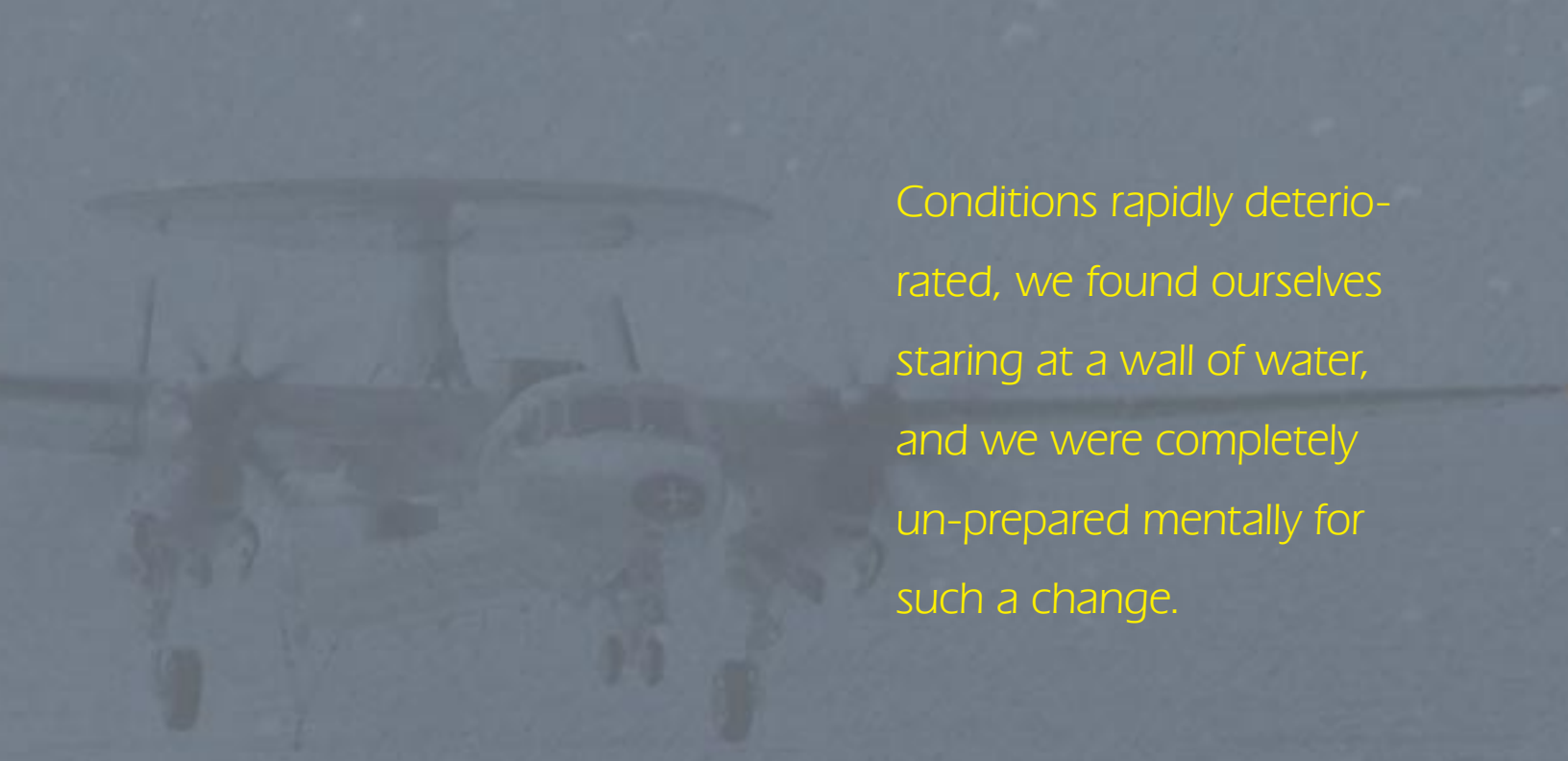
We came around on the first approach, and many of the aircraft called "Clara" on the ball. Great, no reference to glide slope, and some were "Clara lineup." Even better, you might not even see the boat. We heard some "wave off starboard side" calls from the LSOs—again, generally not a good thing.

We began the approach, and it was ugly. With our windshield wipers (yes, we have windshield wipers, but they are not effective) beating frantically, we encountered updrafts, downdrafts, downpours of rain, no rain, confusing radio calls—you name it. We finally reached three-quarters mile and were told to call the ball.

We called "Clara."

Paddles, ever vigilant and on the job, responded, "Paddles contact," and started talking us down.

With our windshield wipers on max, we finally caught sight of the ball and called "Hawkeye ball." But, we kept losing it. As soon as the wiper would pass, I could see



Conditions rapidly deteriorated, we found ourselves staring at a wall of water, and we were completely un-prepared mentally for such a change.

the lens clearly for a split second and then would lose it again behind a curtain of water. The ball would be on, then high, and then low, then high, but no movement in between—not good. I added too much power in close and boltered. "Here we go again," I thought.

My "bucket" was now overflowing and making a mess of the cockpit. We had two very experienced aircraft commanders up front. Both of us had a cruise under our belt, and it was taking all we had to keep the plane flying and our SA at a reasonable level.

About this time, my copilot glanced at the airspeed and noticed we were at 205 knots. He politely pointed at my airspeed indicator, and I immediately reduced power and retracted the flaps. An overspeed of the flaps isn't the end of the world for the E-2C, but it does require a visual inspection before the next flight. It doesn't matter if it is 191 knots, or 260 knots, (yes, it has been done before). But, this situation did further reduce my concentration, as I beat up myself for overspeeding the flaps.

We again turned back to land and configured without any problems.

The second approach was just as ugly: gusts up and down, lots of rain, and poor visibility. We finally called the ball at one-half mile. However, in close, I lost the ball and had my co-pilot call "Clara." They talked us down, we caught a safe 2-wire, and were aboard. The LSOs definitely earned their flight-deck pay that afternoon.

In one flight, we had gone from the best of deals to having to use all our cumulative piloting skills to land. While our CAPC qualification means we are ready to fly the plane aboard the ship with a guest in the right seat, I rather would not think about how much more challenged I would have been had my copilot not had at least the same level of experience.

We had two very important take-aways from this incident. First, never let down your guard. We had the mindset for a simple, day, Case I recovery. But, as conditions deteriorated rapidly, we found ourselves staring at a wall of water, and we completely were unprepared mentally for such a change. When a change like that happens in flight, it is important to slow down, reassess as a crew (we have that luxury as a multi-aircrew platform), and make good decisions.

We fly Case III at night; there is no procedural difference during the day. However, because it was a day flight, our "day" mindset prevailed. That mindset was my first critical error, and it set me up for the flap overspeed. Fortunately, we only oversped the flaps. It could have been much worse, as my SA was very low, and I might not have seen further complications.

The second take-away has to do with flying the ball. If you can't see the lens as it should be seen, and if you can't see its movement, then you can't see the ball. In the debrief, we had a good discussion about the lens. Since I could see the ball, I didn't think to call "Clara." Not seeing its movement was as good as not seeing the ball.

The next time you think you have a good-deal hop, be ready for anything. If conditions change, use all of your training, reevaluate and act appropriately.

Lt Hanvey flies with VAW-121.

Uneventful Until

By Lt. Mark Katocs

It was 2330 on a dark, cloud-covered night, and we were en route to Corpus Christi International for a few touch-and-goes. We had departed an outlying field after doing a practice-precautionary-emergency landing (PPEL) and were at cruising altitude and airspeed.

A loud bang immediately was followed by a noticeable left wing drop, nose-down pitch, and a very profound aircraft vibration. I took the controls, kept the T-34 under control, and instinctively reduced power. I then started my setup for a PEL to San Patricio County, a non-controlled airfield with a 4,000-by-55-foot runway. My immediate thought—following denial—was I had a serious propeller malfunction.

I then heard the student say, "There is something on the windscreen."

My reaction was to tell the student to make sure his parachute was on tight and to be ready to bail out if I gave the command. We then investigated the oil gauges, because oil is the controlling fluid for the propeller. As I checked all the engine-instrument gauges, none were fluctuating, and all indications were normal—minus the major vibration and degraded handling characteristics. As the airspeed hovered around 130 knots, I felt an obvious loss in controllability; I immediately accelerated to 150 knots.

Illustration by Lt. Bard Hubbard, VT-27.

The student then said he didn't think the stuff on the windscreen was oil. He actually thought he saw feathers. I then realized I had a damaged aircraft from at least one birdstrike.

After declaring an emergency, I noticed the extent of the collateral damage. My angle-of-attack indexer and gauge indicated a full stall, which produced rudder shakers, and is a stall warning felt through the pedals of both cockpits. The indicated airspeed fluctuated and noticeably was different than the indicated ground speed displayed on the GPS. I already had ascertained the aircraft was controllable at 150 knots and nearly uncontrollable at 130 knots (by making an educated guess due to an unreliable pitot static). I decided to abort my PEL into San Patricio, and set up for a long straight-in approach to Corpus Christi International, which had a runway about twice as long and three times as wide.

At 7,500 feet by 150 feet, with full-time emergency services on site, it was a better choice for what I considered to be a bigger threat: controllability of the aircraft. I still was uncertain of the propeller's condition and the seriousness of the vibration.

We climbed and set up for the approach into Corpus Christi. I wanted to maintain a dead-engine glide profile in case the birdstrike had damaged the propeller and a possible engine failure followed. The ideal descent airspeed for a PEL is 100 knots. All T-34 pilots know that, at 100 knots, there is an optimal rate of descent. What we don't know is what the descent rate will be in the event we must descend at 150 knots.

I decided to climb higher than I thought necessary and keep power on the aircraft to maintain 145 to 150 knots. After reaching what I thought was sufficient altitude, I reduced power (which ultimately lessened the vibration), lowered the gear, and made an uneventful, 150-knot (groundspeed) landing. The normal approach speed is 80 to 90 knots, with landing speeds of 65 to 75 knots.

The postflight revealed at least two impacts from what was later determined by the BASH experts to be Cattle Egrets, which have a three-foot wingspan and a body length of 19 to 23 inches. Both impact sights tore the aircraft skin and left significant holes on the leading edge of the left wing and the accessory air intake on the nose cowling. Other damage was to the propeller spinner and the underside of the nose cowling above the intakes, which sustained serious deformation.

Maintenance later determined a rib on the wing also had broken as a result of the strike. Because of the near collocation of the angle-of-attack (AoA) probe and Pitot tube on the left wing, a single bird knocked both of these gauges out of calibration and effectively rendered useless all airspeed and stall indications. Using the GPS groundspeed proved to be the most effective indicator of flying airspeed.

Lt. Katocs flies with VT-27.

Hot Switch

By LCdr. Eric Smith

The sequence of events leading up to my night flight did not violate any instruction, SOP guidance, or CRM check. However, I found myself in a situation no aviator ever wants to be in while on a flight deck.

My last flight had been exactly one week earlier, as we operated off the coast of Japan. My three previous flights, however, also had been night flights, so I was accustomed to the nighttime ritual. We pulled into Sasebo, Japan, for some much needed R&R, and, four days later, we were back underway.

The following afternoon we completed our NATOPS crew brief. Because we were a hot switch into the aircraft, we reviewed the hot-switch procedures during the brief and discussed all the ORM aspects of the evolution. The only other part of the evolution that was unusual was my assignment to stay behind in the ready room, while the rest of the crew walked to get a DTD (an item we use to load cryptographic codes) from the offgoing crew.

We ate dinner, donned our flight gear, and waited for our ride to recover. Once the plane was on deck, the rest of the crew headed for the flight deck, while I stayed behind. I was decked out in flight gear, complete with heavy-duty gloves, sleeves rolled down, and, because it was well past sunset, I used a clear visor. I was ready to walk.

Once I received the DTD from the offgoing crew, I was on my way. Instead of heading to the flight deck via the island, I opted to use the "back porch," a flight-deck-access hatch outboard of ready 7 on the starboard side. This route was a longer walk on the flight deck, but, with no knee-knockers and the recovery complete, all I had to worry about was any aircraft taxiing between cycles.

When I stepped onto the flight deck, I realized our plane was parked in the six-pack with its nose to the foul line. I was just forward of two FA-18s. Both jets apparently were manned and turning because a number of people were around them. Not wanting to fight their exhaust, I chose to go around the front of

Photo by MCS3 Roland Franklin. Modified.

I found myself face-to-face with a turning propeller, well inside the safety chain.

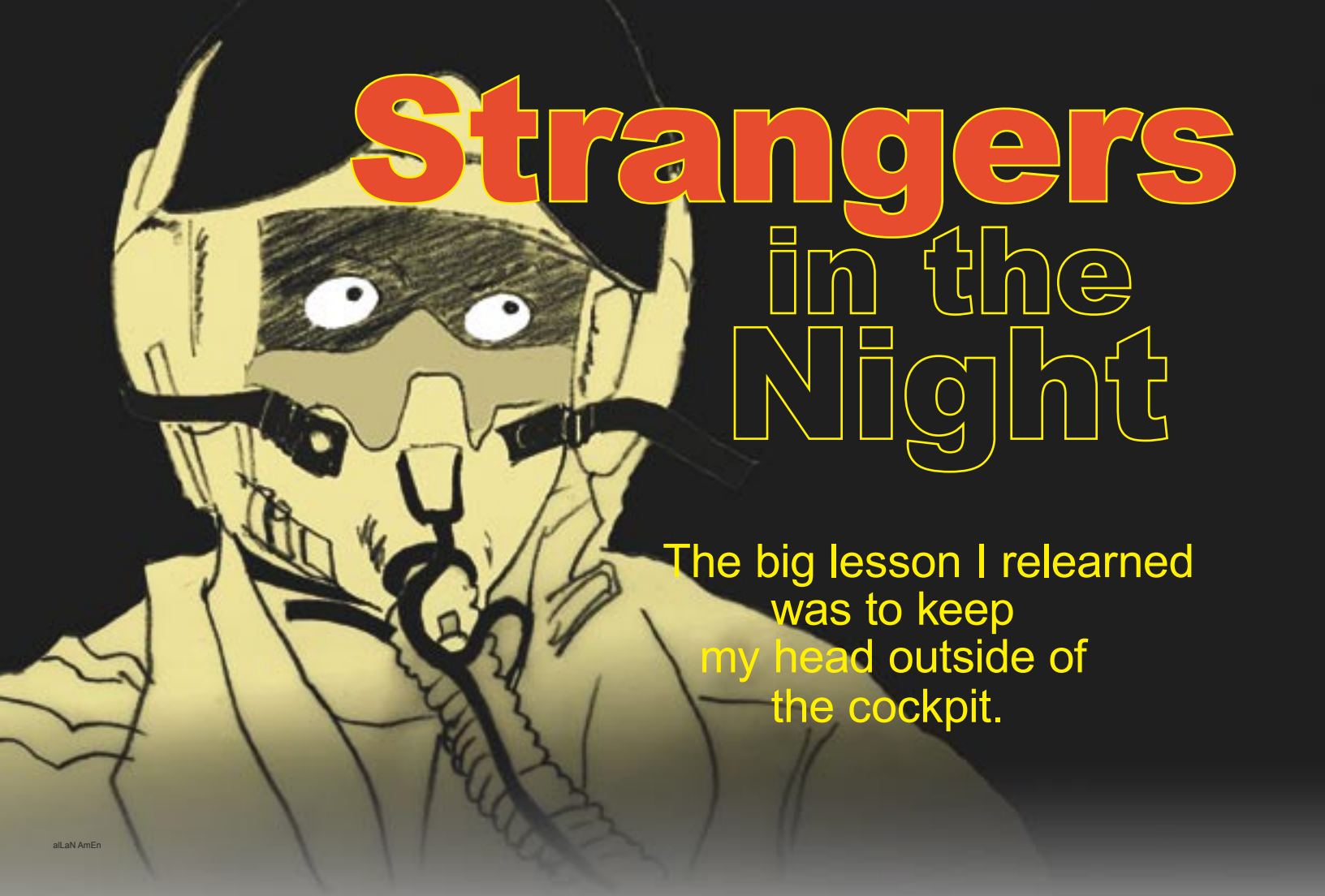
both Hornets. The Hawkeye already had shut down the starboard engine and was taking on fuel, leaving the port engine online.

I assessed the situation and determined I could walk under the starboard wing-butt of the second Hornet and easily remain outside the Hawkeye's propeller-safety chain, so off I went. However, ducking under the starboard wing pylons on the Hornet forced my head down, as well as my situational awareness (SA). I stood up, expecting to continue my walk to the main-entrance hatch. Instead, I found myself face-to-face with a turning propeller, well inside the safety chain. The momentary disorientation caused me to freeze.

The first movement that caught my attention was a maintainer to my right, who was caught offguard by my sudden appearance inside the safety chain. Fortunately, that sight was enough to recage my gyro. I waved him off and quickly backed up to the Hornet. I then ducked under the wing flaps and continued around the outside of the safety chain to my appointed position for entering the aircraft. The plane captain signaled for me to enter, and the evolution was complete 30 seconds later. The flight was much less eventful.

With more than eight years of E-2 experience and two-and-a-half deployments under my belt, I never had given a second thought to safely completing this hot switch. I had heard complacency briefed at safety stand-downs, read about it in *Approach*, and, as a former fleet-replacement-squadron (FRS) instructor, had preached it to my students many times. What happened to me just goes to show that anybody can fall into this dangerous trap. A week out of the plane is all it took for me. But, now I've got something new to add to my bag of sea stories, not to mention a very important ORM item to brief before future hot switches.

LCdr. Smith flies with VAW-116.



Strangers in the Night

The big lesson I relearned was to keep my head outside of the cockpit.

By LCdr. James Haas

I was in the hawking pattern, overhead mother, doing the tanking thing—it was Viking hog heaven. Your standard, real dark, stormy, Adriatic night was playing boogieman outside our canopy, but we were undaunted.

"All-weather tanking," that's our motto. So, to expedite package checks, we were hawked off the deck by the offgoing S-3B, side number 702. The sooner we were package-checked sweet, the sooner we could bug out and fly our single-cycle alternate mission. After all, departure control could decide they really wanted us overhead for this recovery, too. We joined up for the check while earning our doctorates in heavy-weather avoidance.

Green light, good flow, "701, sweet tanker, 12 over three, requesting switch to mission."

"Return overhead and hawk this recovery, report overhead angels four."

Denied, they need us—we are loved.

"701, roger, " wilco, over and out.

Bummer, so much for our alternate mission. We knew the on-station A-6, hose No. 1, already was checked and was buzzing around overhead at 3K, keeping an eye on the recovery. Just as we finished our checks and turned back toward mother, button 14 became a whirlwind of activity. A Hornet was sent up to 3,000 feet off the bolter for a re-fill amidst continued package checks and mission tanking taking place

at various altitudes. So, now we're back overhead, hose No. 2, past point one, 4,000 feet, and I'm busy tucking away the donuts (till later) and the area charts (for some other night). The little voices in my head tonight were all from departure. A flurry of "kick-tanker common" and "report plugged and receiving" calls were making for fascinating listening.

Suddenly, hidden among all the colorful comms on 14 came, "515, say your angels."

He replied, "We're overhead angels four, heading 180, abeam the ship at four now."

Hey, I wasn't born yesterday. Except for the heading, which was 90 out, 515 was reporting our position to departure. How could that be? Maybe they just were confused, but I felt all funny inside anyway.

My mind was awash with millions of tiny synaptic divergences, which suddenly pulled my face out of my helmet bag and pointed it out my side canopy. Let's see, constant bearing, decreasing range—where have I heard that before? I had about enough time to gently push forward on the stick with about the sensitivity level that 30 cc's of adrenaline pumped into my right ventricle would create. Though blessed with two anchors between my wings, I frequently am encumbered by a set of flight controls between my legs. Such is the topsy-turvy world of an S-3 flight officer. My driver's one-anchor brain was trying to figure out why his stick was moving without the aid of his hand.

Simultaneously, at least in my mind, I managed, "Traffic, 3 o'clock," or something very near to that. Realistically, I think I just let fly with an expletive and pushed on the trees-get-bigger control. About that time, an A-6, complete with an attached FA-18 sucking gas, passed about 200 feet (as reported later by CATCC) over the top of us, which is bad. OK departure, where do you really want us?

PH3 Randall Damm. Modified.

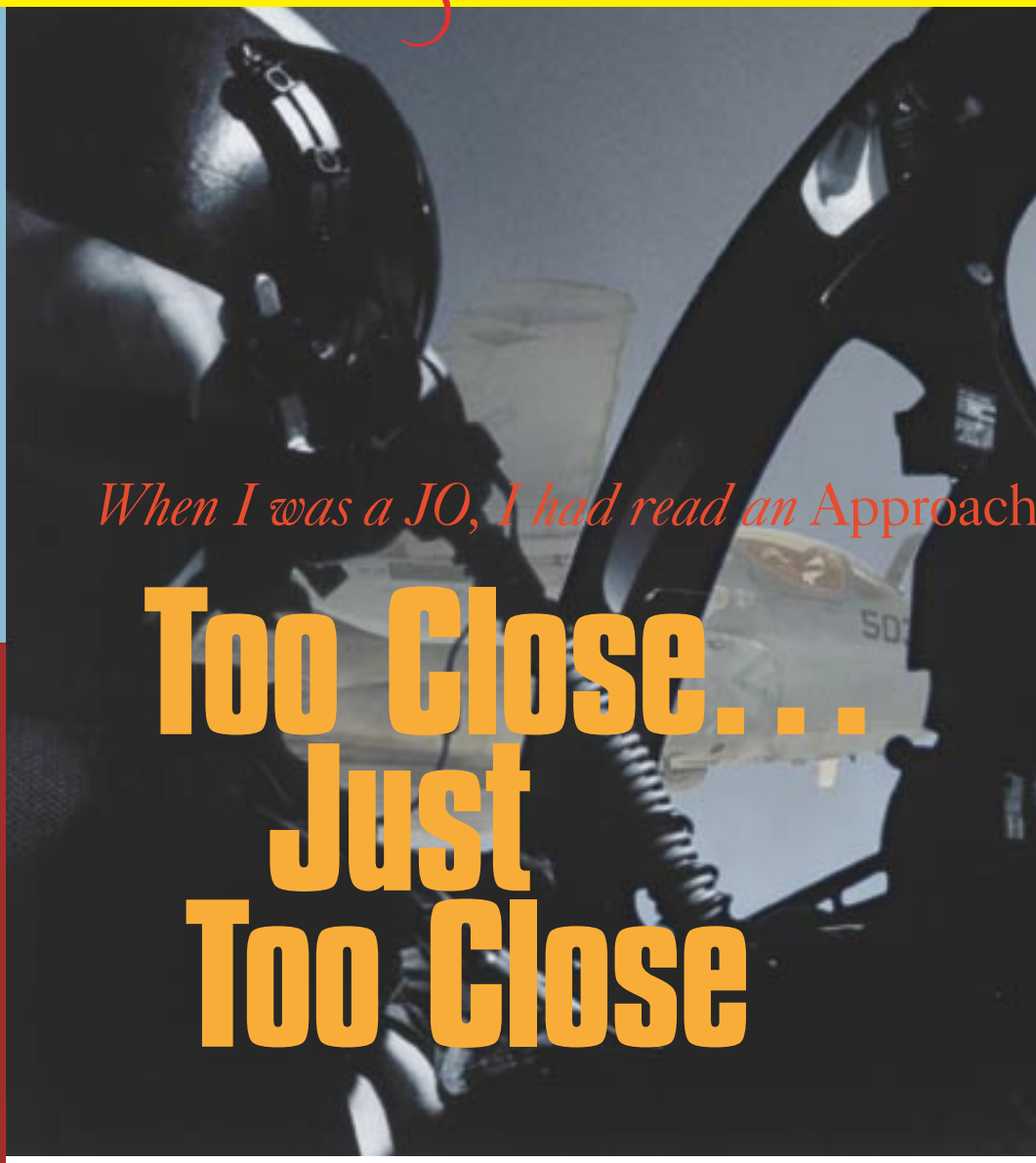
I had the rest of a relatively quiet flight to consider two points: What should I do to avoid this type of undesirable, nonbriefed rendezvous in the future, and how could I get my knees to work right before we landed. The big lesson I relearned was to keep my head outside of the cockpit. Maintaining a vigilant lookout doctrine, especially overhead mother, day or night, is about the first thing they try to teach us back in P'cola. I was reminded of a fam stage instructor who became very frustrated with me for not scanning for the traffic I just had told departure I was looking for. Years later, as an instructor myself, I made establishing a good lookout doctrine one of my points to emphasize.

With very few exceptions, nothing in your lap is worth a confetti ride to the deck. Well, the big sky, little aircraft theory had proven itself false yet again. I, for one, was a new man. I had learned my lesson and gotten to live, too. I've got that going for me, which is nice.

LCdr. Haas was VS-22's safety officer at the time of this flight. He is an analyst at the Naval Safety Center., and currently is an individual augmentee to OIF

Crew Resource Management

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



When I was a JO, I had read an Approach

Too Close... Just Too Close

By Cdr. C. E. Luttrell

It was a standard stormy winter in the Northwest, and we were about two thirds of the way through the field-carrier-landing-practice (FCLP) period for the next fleet-replacement-squadron (FRS) carrier qualification (CQ). After two weeks of bad weather and having to do carrier-controlled approaches (CCAs), paddles was feeling the pressure of the students not getting enough looks at the ball before heading south to the ship. The bad weather this day would be no different, and the winds from the south guaranteed we would have intermittent rain for the evening.

The day FCLP went fairly well because the ceiling was high enough to open the pattern, but the winds were gusty and at the edge of SOP limits for the students. After we completed the day

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article from a commanding officer who was getting ready to turnover command. He had decided to share a story that scared and embarrassed him so badly he swore he never would tell it. I thought it strange to be in that position, until about a year after I read it, I had a near midair that scared and embarrassed me so badly I never have told anyone either.

bounce and evening approached, the rain and wind had moved in, and the night period was in jeopardy. The entire night-page cast decided we would grab a bite to eat and return to the ready room at 1630 for a final determination on weather. As it started to get dark, the clouds and rain rolled in with some good gusts and downpours. Paddles started the brief, and after reading the weather report, determined we would have to do CCAs, but said, "If the ceiling lifts, we would have each aircraft turn downwind into the tower pattern."

An hour and twenty minutes later, six jets took off from runway 7 (primary runway to be used for noise abatement), and hopped into the CCA pattern. After two passes, paddles tried to convince tower the FCLP pattern should be open, with aircrew reporting a 1,700-foot ceiling. What he didn't tell them was the clouds were blowing through so fast that at times the ceiling would be down to 600 feet. Tower replied they could not see the aircraft from their view, and weather was calling 1,100-feet broken.

As the high winds shifted, tower switched the duty to runway 13 (primary-instrument runway), and said to transition to the FCLP pattern. They added that if runway 13 didn't work, they could put us back into the CCA box. Paddles closed up his shack, and raced to the approach end of runway 13. While he was gone, tower called for everyone to stay below 1,200 feet, and fly runway-7 pattern until the approach end, then turn to parallel 13 on the right side. At the upwind numbers of 13, expect a call to a left downwind, which would essentially turn us across the CCA path.

Visibility deteriorated in the heavy, but isolated rain showers. Tower tried to keep the interval organized but had mixed-up call signs, and even lost sight of one jet. Within a minute, tower had lost sight of two more jets, and was frantically trying to get everyone into some sort of organized flow. As the intensity of the rain increased, tower lost situational awareness (SA), and could no longer call people's turns in the pattern. This is where we all got stupid.

Tower asked if we could maintain visual-meteorological conditions (VMC), and I looked over at my student pilot and asked him if he had anyone beside our interval in sight.

He laughed and asked, "Are you kidding me?"

I hesitated to answer tower knowing how bad paddles wanted those extra looks the visual-flight-rules (VFR) pattern would give us. Meanwhile, two other JO instructors piped up saying, "affirmative" and "yes we can."

I was not smart enough to follow their inputs with

the correct answer, “no.”

We continued with the gaggle and eventually got the six jets into the correct pattern, but the rain at the departure end of runway 13 really was getting heavy. As we climbed out of our first pass on the new duty runway, we were told our interval (2 of 6) was on the downwind at the departure end.

“Great,” I thought, “we have a starting point.” Maybe this plan will work out—as the hair rose on the back of my neck.

Just as we started our turn, I saw the antismash light on our real interval, who had been about a mile and a half past the departure end of the runway, but tower had lost them. They inadvertently had directed us to Dash 1 of the group instead of Dash 2; I told the pilot to take out his turn and he asked why. I explained to him that we had the wrong interval, and we needed to extend upwind to get proper separation. I called tower and told them Dash 2’s location, so they could gain some SA on the pattern. Had either the tower or I had any SA, we would have called for CCAs. I was so busy trying to find the other aircraft in the pattern, I didn’t even think to call a knock-it-off. We had to get those passes done.

The first guy (Dash 4) to touch down after us had been listening when we told tower our position. When tower asked if he had his interval, he replied, “Yes, I think so.”

Three strikes and we were out: No more chances to break the chain.

Dash 4 flew upwind, and I had him in sight the whole time. I started to feel comfortable at least the aircrew were gaining some SA about the pattern, and we would be OK. The Dash 5 jet had been busy trying to get his pilot to a good start on his pass, and had not been paying attention to what had been going on in the pattern. When his jet lifted off, tower said his interval is past the upwind numbers and asked, “Do you have him?”

After a few seconds, the response was, “Interval in sight.”

I immediately asked my pilot if he had the plane lifting off the deck. He replied, “No.” But he would keep padlocked on his interval, so he wouldn’t lose him. As I watched the jet lift off, and to my amazement, he did not climb straight ahead, but started his turn. He had picked the jet in front of us, not the one behind as his interval.

The tower controller repeated her call, “572, do you have your interval in sight?”

"Yes," came the immediate response, but it was clear there were two people working on the same interval: Dash 3.

Tower made another call, “Aircraft lifting, that is your interval in front of you.”

They continued to climb and turn belly up to us and about 100 feet below. I called to my pilot immediately to come right; he did not question and turned. At the same time, tower screamed “572 lifting, do you have your interval?”

Again the reply calmly came, “interval in sight.”

As we took our cut away from the pattern, I could read the name on the back of the helmet of the other jet’s right seat when the antismash light flashed. We were close enough to see his kneeboard attached to his knee. I estimate we came within 10 feet of each other’s wingtip without them even knowing it. After a 30-degree cut, we leveled our wings, and I had the pilot look over. What he saw made him shout a few explicatives followed by, “We almost died!” He then took interval, and we took the next pass to a full stop.

After landing, we called paddles, who said he did not see the event because he had a guy on the ball. The crew in Dash 5 never saw us because they dropped their scan “knowing” they had their interval in sight. The tower rep refused to say anything until she could talk to her department head. The tower supervisor concurred for his sake too. We had been within a couple of seconds of losing two airframes and possibly four aircrew to a midair.

I have read many times about dying to get the X. I put myself in that position without even disagreeing with my peers on the weather, or our ability to conduct VMC operations in the pouring rain. Since that day, I have learned to pay attention when the hair on the back of my neck rises. I speak up about the lack of comfort no matter who is in the flight.

Cdr. Luttrell is with VAQ-139.

Mishap-Free Milestones

VR-55	30 years	127,000 hours
VAQ-136	19 years	30,940 hours

Mishap-Free Squadrons

Congratulations to the following squadrons for being mishap-free in FY06.

HC-11	HC-85	HS-2	HS-3
HSC-22	HSC-26	HSL-42	HSL-60
HSM-41	HX-21	VAQ-136	VAW-113
VAW-115	VAW-121	VAW-122	VAW-124
VAW-125	VAW-126	VAW-77	VAW-78
VFA-132	VFA-15	VFA-204	VFA-213
VFA-31	VFA-32	VFA-87	VP-1
VP-62	VPU-1	VR-24	VR-46
VR-48	VR-52	VR-54	VR-55
VR-58	VR-59	VR-62	VR-64
VS-24	VT-3	VT-35	VT-4
VT-9	VX-1	VX-20	VX-30
VXS-1	NavFlightDemRon		

No reported Class A, B, or C mishaps in flight, flight-related, aviation ground, private motor vehicle, recreation off-duty and shore operations.

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Website
www.safetycenter.navy.mil

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The Web-enabled safety system is the primary method for reporting aviation hazards and mishaps. WESS is an evolving program with lots of features that can make your job easier. Visit our WESS webpage to view the quick links to the online system, set up an account, and find the users' guides, training, and FAQs.

ORM

Operational Risk Management

www.safetycenter.navy.mil/orm/default.htm

Operation risk management is a decision-making tool used by people at all levels to increase operational effectiveness by anticipating hazards and reducing the potential for loss, thereby increasing the probability of a successful mission. On or off duty, using the risk management process will keep you safer and ready to carry out the mission.

“The intimidation of rank, the experience of a fellow pilot, groupthink mentality, and the threat of an extended workday do not give way to sound judgment and safety-of-flight.”

—Lt. Jeff Schell, HSL-42

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