Reducing Mishaps by 50%

THE NAVAL SAFETY CENTER'S AVIATION MAGAZINE

approach

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In This Issue: *Special 50-Percent Mishap-Reduction Pullout*

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September-October 2004 Volume 49 No. 5

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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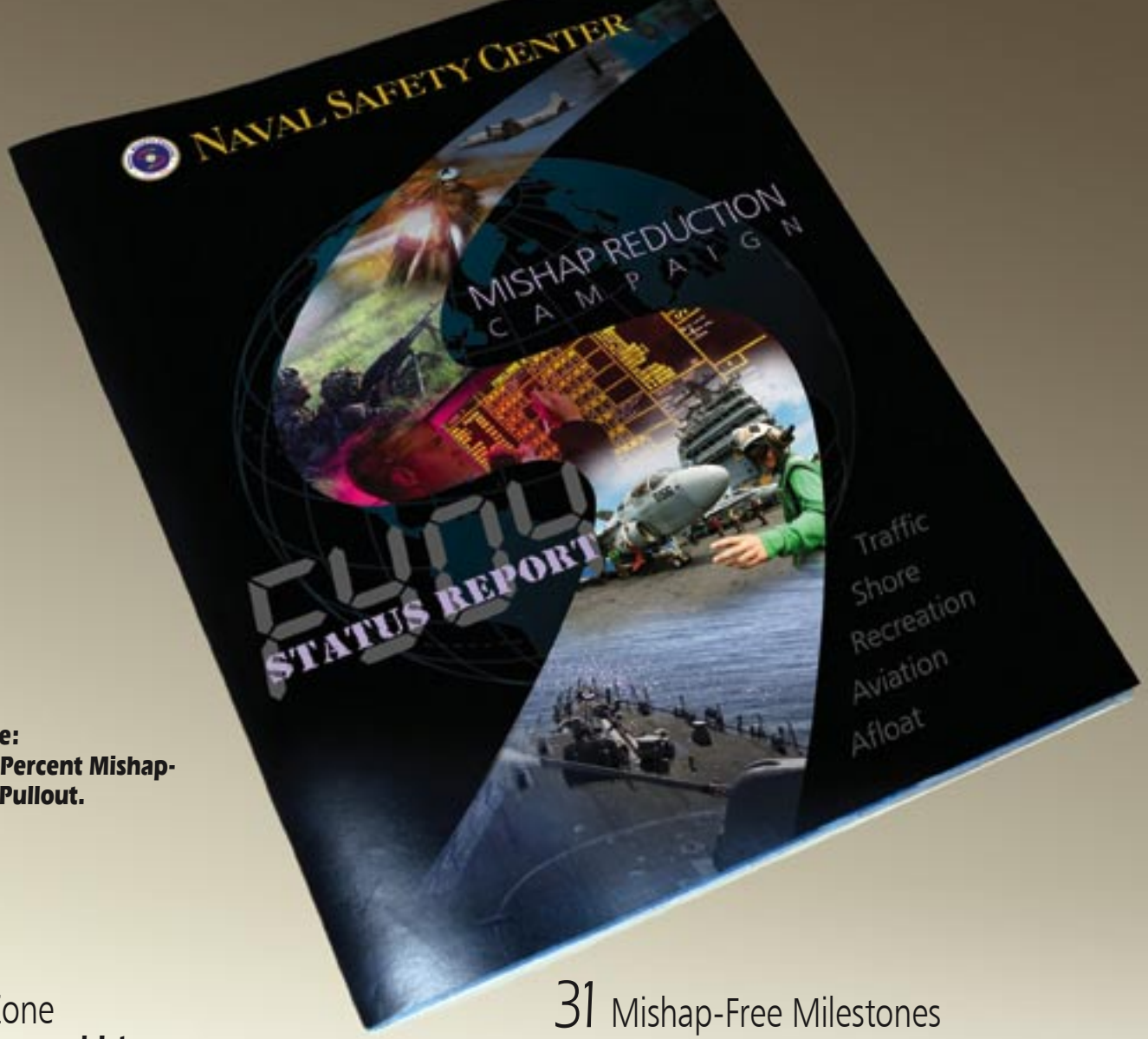
Features

Departments



In this issue:
Special 50-Percent Mishap-Reduction Pullout.

On the cover: FA-18 Hornets with the "Rampagers" of Strike Fighter Squadron Eight Three (VFA-83) make a dual runway takeoff while conducting detachment operations in support of Operations Enduring Freedom and Southern Watch. Photo by Capt. Dana Potts.

September-October Thanks

Thanks for helping with this issue…
LCdr. James Montgomery, VFA-82
LCdr. Paul Crump, VAW-115
Capt. Grant Killmer, USMC, VMU-2
Maj. Scott Payne, USMC, HMM-266
LCdr. John Ward, VAQ-131

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Admiral's Corner

From Commander, Naval Safety Center

How are you helping to reduce mishaps? While the Safety Center aims to make the Navywide working environment as safe as possible, the important person contributing to mishap-reduction is you! Everyone owns safety. When I talk to Sailors and Marines, I get frustrated because many junior personnel are unaware of the 50-percent mishap-reduction campaign. We can, and must, fix that lack of awareness by increasing the information flow and communicating both up and down the chain of command. We must improve how we do business, and all hands must get involved.

Another area in which we can help is hazard reporting. In an attempt to bring hazard reporting to the forefront of the naval-aviation safety program, the January-February 2004 issue of *Approach* highlighted changes to OPNAVINST 3750.6R (hazrep instruction), Chapter 4. These changes improve the reporting process with a more user-friendly document, a 50-percent reduction in number of pages required, and one standard reporting format for aircraft and UAVs.

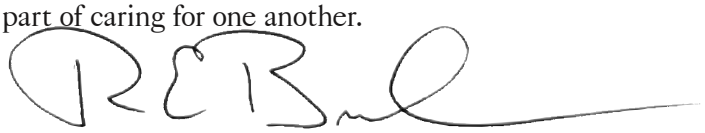
Hazard reporting has proved very beneficial to the training command squadrons. Recently they have used NMAC (near-midair collision) hazard reports to raise awareness of a dangerous situation: T-34s operating at an uncontrolled civilian airfield were regularly having near-midairs with civilian aircraft. Increased reporting from the training squadrons provided essential data for safety analysis that allowed higher echelon commands to identify problem areas, establish risk severity, and control the risk.

Those hazreps began the information flow among CNATRA, COMTRAWING Four, and COMTRAWING Five, which got the ball rolling to develop a risk-mitigation strategy with necessary controls, minimizing risk to primary training aviators.

Training-command personnel got involved, took ownership, raised awareness, used improved reporting procedures, and communicated—they improved the way they do business. I'm pleased to see the hazard-reporting system offering that vehicle to the training command. BZs to all TRACOM COs for bringing this NMAC hazard to everyone's attention!

I'll close by addressing what remains our No. 1 problem: private motor-vehicle (PMV) mishaps. Motor-vehicle accidents during the 2004 Critical Days of Summer (the period that began the Friday before Memorial Day and ended Labor Day) killed 23 Sailors and 13 Marines. All hands—including those in leadership positions—should reflect on these tragic and unnecessary losses.

Every death is one too many. Could any, or maybe all of these deaths have been prevented? In our hearts, we know the answer is, "Yes." We have to communicate better and make sure we are engaged at all levels in each command. There is not a Sailor, Marine or civilian in our Navy community who wakes up in the morning with the intent to die on the road that day—many become victims, while most just make poor decisions. Let's make sure we pass the word about driving safety. It's all part of caring for one another.



HOW ARE WE DOING?

Here's information on our safety status as we work toward the goal.

Aviation (Rates = Mishaps Per 100,000 Flight Hours)

Class-A Flight Mishaps (FY04 thru 30 September)

Service	*Total/Rate*	*FY03 thru 30 Sep*	*FY04 Goal**	*FY05 Goal**	*FY01-03 Avg*	*Fighter/Attack*	*Helo*
USN:	12/1.13	26/2.28	14/1.24	10/0.88	20.3/1.77	8/3.30	1/.50
USMC:	18/5.25	11/2.91	10/2.75	7/1.94	10.3/2.77	9/6.19	8/5.32

** Goals based on FY02 baseline.*

rate above goal. *rate below goal.*

Mishap Flotsam and Jetsam

Tidbits of Gouge From the Safety Center Investigators

By Dave Clark

After participating in nearly 40 Class A and B mishap investigations the last couple years, the Safety Center investigators remain impressed with the overall performance of aircraft mishap boards (AMBs), and we see no problem in the overall AMB structure, training or investigative process. But, during the investigations, we have seen simple blunders that not only were embarrassing, they actually hampered the process.

Accessing the dustbins of our brains, where we've stashed these observations, we want to share these tidbits so ASOs and AMBs do not repeat them.

• Avoid the temptation to cut and paste addressees from the mishap data report (MDR) to the safety investigation report (SIR)—the recipients are different. Invariably, those who need to get the SIR will not get it, and those who don't have a need will get it. Look to OPNAV 3750.6R, appendixes 5A and 5B, for MDR addressees and appendixes 7A and 7B for SIRs.

• Too many amended MDRs have been sent with "Initial MDR" still in the subject line. Embarrassing? Yes. Proofreading the message is the key here.

• The EI clearinghouse at the appropriate naval air depot (NADEP) coordinates engineering investigation (EI) exhibit shipping. Don't let your shipment be delayed unnecessarily while the base logistic organization awaits the low bid; time is wasted. Contact the clearinghouse representative after submitting the EI request, to coordinate shipping. Contacts can be found at the NavAir Naval Aviation Maintenance Discrepancy Reporting Program (NAMDRP) clearinghouse site at: *http://www. namdrp.navair.navy.mil*

• We occasionally receive incorrectly formatted SIRs. That's easy enough to fix by following OPNAV 3750.6R, Chapter 7.

• When preparing for the salvage of your mishap aircraft, remember to bring tri-walls and pallets; they give you a place to put the smaller parts and pieces, rather than leaving them piled and strewn about the deck. Debarkation will be quicker and cleaner, and, after a week or so on a salvage vessel, you'll be glad you were organized better.

• We often notice a hesitancy to submit hazreps during the course of an investigation. What greater service can there be to the fleet by an AMB than to inform and prevent? Send 'em! It is your responsibility as an AMB. Hazrep guidance is provided in 3750.6.

• Flight data recorders (FDRs) and cockpit voice recorders (CVRs) are valuable to any investigation. If your aircraft is intact after an event, and you need the data from the device, remove or disconnect the power plugs before applying any electrical power to the aircraft. Electrical power applied to an installed and connected recorder will overwrite critical data. If there are any questions on recorders, contact our FDR guru, Mr. Chip Brown, at (757) 444-3520, ext 7242 (DSN prefix 564)

• More on FDRs and CVRs. Did you know AFC-258 installed voice and data recorders (VADRs) during depot maintenance in FA-18 lot 10-13 Charlie models, BuNo 163427 – 164279? Some squadrons are not aware of this change. Know what nonvolatile data recorders are installed in you aircraft, what they look like, and where they are located. Check your aircraft history for AFC-258.

AMBs without a Safety Center investigator on site rarely attend the suspect component EI. Don't just send off the component and wait—participate in your EI. The face-to-face interaction with the engineers and fleet support team (FST) is invaluable in understanding the failure, and you'll be able to decipher the final EI report. The added benefit is that your presence expedites the process.

Sometimes we hear about senior members and ASOs being reluctant to ask for a Naval Safety Center mishap investigator. Investigation support is at the top of our budget priorities; we will assist on site if requested.

Visit the Naval Safety Center mishap investigator website at: *http://www.safetycenter.navy.mil/aviation/investigations.*

Mr. Clark is an aircraft-mishap investigator with the Naval Safety Center

Bird on a Wi

By LCdr. Mike Beidler

"Sir! Break left! We're going to hit the tower!"

With those words, I knew I only had one choice to make: Compound the emergency. Creating a second problem was my only solution to the first one.

As a familiarization instructor at HT-8, my primary duty was to instruct student naval aviators in the art of helicopter flight from the ground up (no pun intended). To give new students the best training possible and to minimize a student's time out of the cockpit, fam instructors generally fly during daylight hours. The day schedule sometimes lasts for months at a time. While a day cycle is good for the students, it's bad for fam instructors' nighttime proficiency.

I hadn't flown at night in months before the evening of the near-miss. Knowing I had NATOPS minimums to meet, I sniveled for an instructor night flight to refamiliarize myself with the eastern instrument

re—Almost

Photo by Matthew J. Thomas. Modified.

area. Assuming I would complete the night warmup, operations scheduled me to fly the next evening with an old fam student of mine. He would be flying his last training flight, and we were scheduled for a low-level GPS-ground navigation flight in the western instrument area (instead of the eastern area).

In addition to not having flown in the west for quite a while, being assigned a TH-57C at night complicated things even more: The charlie model is slightly different than the bravo model I flew as a fam instructor. The charlie model, used primarily for night and instrument flights, has many more bells and whistles, such as GPS, ILS and extra circuit breakers. But, I felt comfortable.

As usual, the student and I briefed the route of flight. We identified all obstacles within several miles of our flight path, including a giant, flashing, 1,500-foot radio tower located two to three miles east of our track. The Notices to Airmen (NOTAMs) were checked. The weather briefer said the skies were overcast, with no moon illumination.

Off we went. We finished the preliminary Pensacola-hospital route by navigating to a nearby training airfield. We then began the low-level portion of the hop by heading north to the first low-level checkpoint at 1,000 feet MSL (800 feet AGL).

The winds were much stronger than forecast, and they blew us east of track, which caused difficulty keeping the course-deviation indicator (CDI) centered. The student navigated, using his annotated chart.

As we continued north, I felt we were a bit off course. Although the winds were a concern, my bigger worry was I couldn't see the flashing lights of the gigantic 1,500-foot tower I expected ahead and to the right. Either we had been blown way off course, or my student had plugged in an inaccurate GPS coordinate. I tasked my student to positively identify our location, using other towers in the area as reference points. Quickly, the student picked out towers near our route. And that's when he barked, "Sir! Break left! We're going to hit the tower!"

Despite the extremely dark night, we could see the tree-trunk silhouette of the tower looming ever larger in our windscreen—a much closer encounter than we wanted to witness. Within a split second of my student's order, I broke left and pulled collective to increase our altitude. The tower was an easy target to miss–I was more worried about the guy[1] wires. I was certain, any second, our aircraft would be sliced in half. As I pulled collective, I knew climbing was the only way to increase our chances of survival. As I pulled, I saw the torque light repeatedly flash.

I continued climbing left until we were above the tower, and then I turned northeast to NAS Whiting Field, our nearest safe-landing site. (Although Pensacola Regional was an option, we were equidistant from both airfields, and we elected to head home.)

I wasn't sure how much we had overtorqued, and, once we were safe from the guy wires, I finally realized how bad our emergency was. Normally, the copilot would reset the torque circuit breaker, so the gauge would display the overtorque percentage. But, this particular torque-reading system was new, and the circuit breaker was unlabelled in many of the charlie aircraft—including ours. Breaking out the NATOPS pocket checklist wouldn't help either; an interim change to the checklist hadn't yet been published. I knew both of us needed to be looking outside, so I decided to wait until we had landed to find the circuit breaker.

We approached Whiting at a reasonable speed, considering our overtorque situation. I contacted tower, declared an emergency, and then flew to a safe spot abeam the active runway.

After landing, we located the torque circuit breaker and reset it (showing a close-to-record-breaking 134 percent). We quickly shut down, and, even before we stepped out, maintenance personnel were inspecting every square inch of the aircraft, trying to identify possible wire-strike damage.

After returning to the squadron spaces, I immediately rechecked the NOTAMS; I saw nothing about the tower's lights being inoperative. When I debriefed the command duty officer, I received a surprising confession: The regular night flyers knew the tower's lights had been inoperative (or intermittent at best) for several months; yet, no one had reported it to the FAA, nor had anyone alerted other pilots via an all-read board. (Subsequent investigation by the FAA revealed the equipment designed to alert the tower's owner that the lights were inoperative had malfunctioned.)

The next day, I briefed the safety officer of the collective "crime of omission" and our close call. He promptly took an aircraft out to the west to recon the tower. His debrief, in addition to my observations regarding the apparent nearness of the tower and our altitude, indicated—in all likelihood—our aircraft had flown between the guy wires.

In retrospect, there are several things we, as a crew, should have done to decrease the chances of hitting the wires. Once we confessed we were lost, we should have climbed to an altitude above the highest known obstacle. We should have been more vigilant and situationally aware, especially with my having been outside the night-training environment for a while. These simple suggestions could have helped avoid the several strands of gray hair I gained soon thereafter.

But, the most important requirement for anyone involved in aviation-related activities is to issue safety-of-flight information quickly and properly. Avoid turning a routine training flight into a one-way ticket from the crash site to the morgue.

LCdr. Beidler currently is an MH-60S instructor pilot at HC-3.

[1]The proper term is "guy" wires, not "guide" wires. *n.* **guy** A rope, chain, rod or wire attached to something to steady or guide.

This crew got themselves into a dangerous situation where they had to make several decisions very quickly, including when and where to land, given the overtorque. NATOPS says to land as soon as possible.—Capt. Ed Shea, TH-57 analyst at the Naval Safety Center.

Taking a Dip

By Lt. Josh Potocko

Goal: To increase awareness of fatigue risks, specifically as they relate to night carrier ops among naval aviators.

Summary: Night cat shot, S-3B pilot did not sufficiently rotate aircraft, aircraft settled off deck, flew about 20 feet off the water.

Sequence of Events:

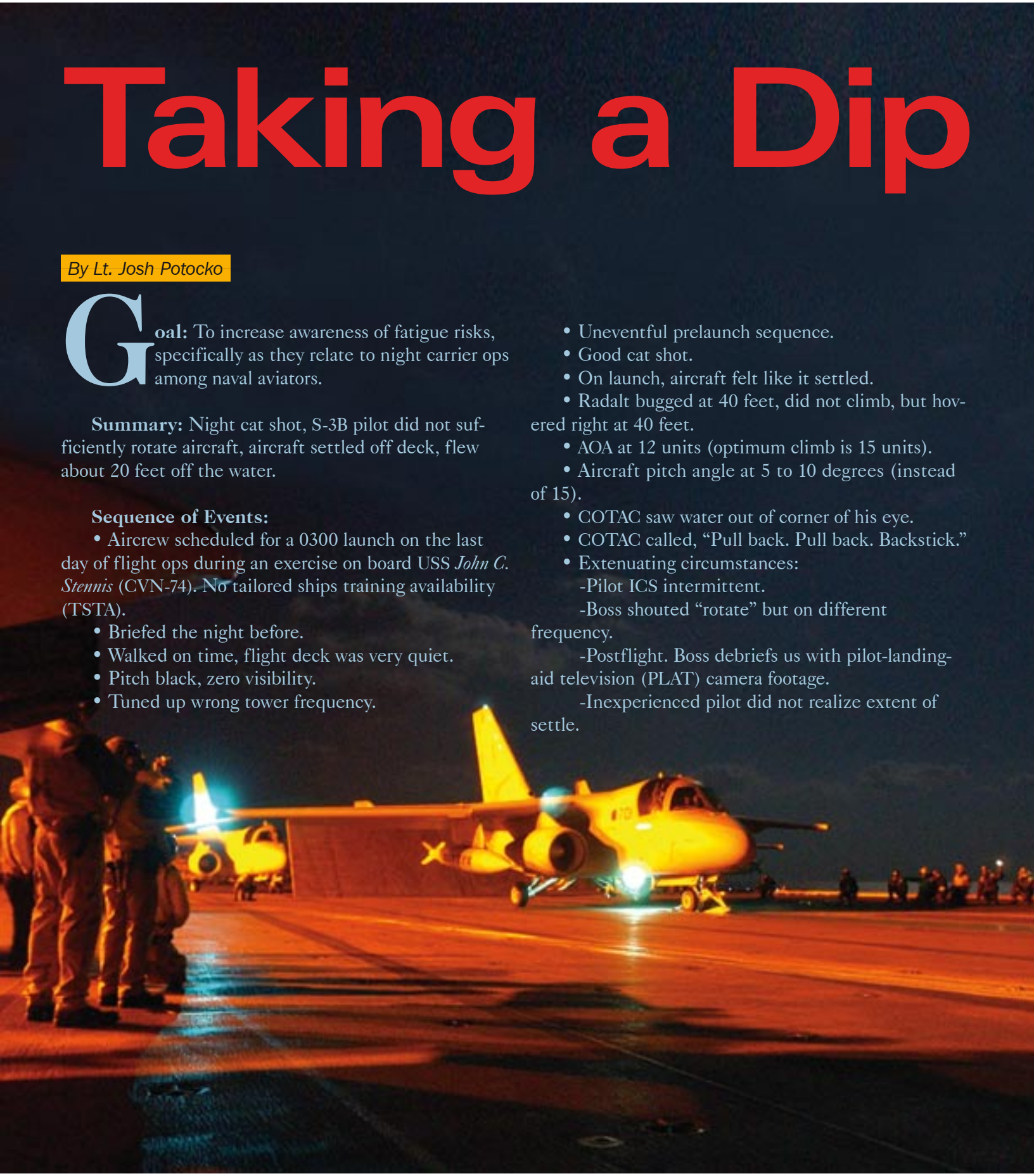
- Aircrew scheduled for a 0300 launch on the last day of flight ops during an exercise on board USS *John C. Stennis* (CVN-74). No tailored ships training availability (TSTA).
- Briefed the night before.
- Walked on time, flight deck was very quiet.
- Pitch black, zero visibility.
- Tuned up wrong tower frequency.
- Uneventful prelaunch sequence.
- Good cat shot.
- On launch, aircraft felt like it settled.
- Radalt bugged at 40 feet, did not climb, but hovered right at 40 feet.
- AOA at 12 units (optimum climb is 15 units).
- Aircraft pitch angle at 5 to 10 degrees (instead of 15).
- COTAC saw water out of corner of his eye.
- COTAC called, "Pull back. Pull back. Backstick."
- Extenuating circumstances:

  -Pilot ICS intermittent.

  -Boss shouted "rotate" but on different frequency.

  -Postflight. Boss debriefs us with pilot-landing-aid television (PLAT) camera footage.

  -Inexperienced pilot did not realize extent of settle.



Question: When does it make sense to fly a four-hour surface surveillance and control (SSC) mission that launches at 0300 on the last day of an at-sea period?

Answer: If you are a JO—never. Because that's when we get our beauty sleep. Plus, mid-rats you've barely had time to digest.

However, people with eagles and stars on their collars see things differently. When kicking purple-country butt during a final battle problem, they see no better way to finish off our enemies (thus allowing an early flyoff) than to throw the all-weather, multi-mission, super-tactical Hoov at them when they least expect it.

We were on USS *John C. Stennis* during a CompTuEx off the southwest California coast. The ship had not had an air wing on board for over a year and a half. CVW-14 just had cross-decked from USS *Abraham Lincoln* (CVN-72), after completing a 10-month cruise six months earlier. One month at sea had made the two CVs begin to feel like a team. They had suffered together through poor weather and high sea states. The general-quarters drills were plentiful, but at least we looked forward to the food.

I eagerly anticipated the last day of flight ops. This at-sea period was my last with VS-35, as I was scheduled to rotate in the spring. I anticipated taking my last look at the back of a flight deck, which left me with simultaneous feelings of nostalgia and relief.

I had been assigned to fly with the two newest members of our command, not for the flyoff but for a long and painful SSC. We were to hunt for bad guys hiding from our battle group. I knew the mission had increased risks: mainly flying without much sleep. But, I also was confident in the nugget pilot because he already had demonstrated his abilities.

We decided as a crew to brief the night before so we could minimize our sleep loss. I set my alarm for 0145 and went to bed at about 2100. Waking for the flight was unpleasant as expected, but we updated our brief with

After the aircraft's wheels reached the deck edge, I felt like we were taking an elevator—down.

weather and scenario info, then we proceeded to the flight deck. The night was unusually quiet as we walked to the jet; the helo hadn't even started up yet.

Man-up and taxi to the cat were uneventful, save one annoyance: The pilot had to ask me to repeat myself a couple of times. I thought nothing of it, but this minor roadblock to crew coordination could have had major complications. I tuned up button 18 for departure as we had done the previous three days but heard no prelaunch brief. Because an E-2 and our plane were the only ones launching, I wasn't surprised not to hear anything. I made an improper assumption.

I never will forget the next minute of my life. We went into tension, I felt the airplane squat, the pilot turned on the lights, and away we went. All indications were normal. I think I even commented, "Well, that was a good one."

The next thing that happened was a surprise. After the aircraft's wheels reached the deck edge, I felt like we were taking an elevator—down. As I felt the settle, I immediately looked at the AOA. It read 12 units. Normal launch is 15 to 17 units. Next, I looked at the radar altimeter. It was holding steady—then wait, no, it descended slightly.

I said to the pilot, "Pull back." No response. Then again, "Pull back. Backstick."

I did not grab the stick, although, if I ever see those indications again, I will be spring loaded to pull it back.

The last thing I remember is catching a hint of the ocean's bioluminescence out the corner of my right eye. I could see whitecaps crashing. I knew we were low, but the next thing I felt was the jet pitching up and climbing safely away.

As a crew, we discussed the "settle off the cat" in the climb, but we didn't mention it again the rest of the flight. For four hours, we searched for and found the bad guy, and we saved the high-value unit (HVU). The pilot had intermittent ICS problems, but we overcame those by yelling and using hand signals. We were rewarded for our work with a beautiful sunrise, and my nugget pilot brought us home safely for one last trap. We shared a sigh of relief.

However, we quickly learned just how close we had come to hitting the water. The boss gave us a detailed lecture on how to properly rotate a Viking off the cat shot. His words were accented by PLAT camera footage of a taillight, barely visible from the tower, hovering just even with the deck-edge along the bow cats. The boss had told us over the radio to rotate, and some ship's company felt compelled to initiate their SAR procedures. Apparently, we scared everybody who had watched us at least 10 times as much as we had scared ourselves.

The moral of this story is clear. For pilots, external audio input from NFOs, the boss, and LSOs is designed to keep you alive. Do not compromise your communications abilities because you think you can "handle it."

For all aircrew, remember every flight could be the last in your career or the last thing you ever do. Contemplate this simple observation: No one ever had a mishap by colliding with the sky.

Lt. Potocko flew with VS-35.

Blowing Sand in the Arabian Gulf

By LCdr. Mike Saling

Almost four months into deployment, we hadn't yet hit "hump day." Our flight-deck crew had been working nonstop in support of real-world operations and day-night training evolutions. The flight-deck crew was operating at optimum proficiency and had been extremely professional in supporting the daily air plan. However, with a brief loss of situational awareness (SA) on the part of an embarked helicopter crew, our many successes almost were overshadowed by a close call.

After a few days of operating in the central Arabian Gulf in the hot temperatures of June, USS *Iwo Jima* (LHD-7) was headed into a meteorological phenomenon commonly found in the Middle East: blowing sand. Daytime flight operations were relatively unhindered, but visibility on the bridge was limited to three to five miles. As flight operations continued into nighttime, the radar indicated our ship was headed toward a solid line of blowing sand. We tried to maintain optimum winds for flight operations, while transiting to our nighttime "gator box."

The ship encountered the line of sand shortly after the aircraft in the flight pattern had transitioned to night-vision devices (NVDs). The Air Boss was working one AH-1W and two CH-46 helicopters in a night visual-flight-rules (VFR) NVD pattern. A Navy HH-46 helicopter was in starboard delta as the search-and-rescue (SAR) aircraft.

Minutes before the incident, the SAR helicopter crew told the Air Boss they needed to land for fuel. They also requested permission to cross the bow to set up for landing on one of the forward spots. The Air Boss cleared them to cross the bow but asked them to extend their upwind leg on the starboard side before crossing the bow to facilitate launching the other three aircraft into the pattern. As the SAR aircraft crew acknowledged the call from the Air Boss, the AH-1W and two CH-46s were cleared to take off for reentry into the night NVD-landing pattern.

The situation began to unwind slowly as the SAR aircraft cut short his upwind leg the Air Boss had requested and turned crosswind (across the bow) earlier than expected. The forward visibility in the LHD tower is poor, and the Air Boss made a judgment call to launch the other three aircraft after telling his plan to the airborne SAR aircraft crew. The AH-1W and the two CH-46s from spots seven and nine were cleared to take off. They were directed

Nighttime NVD operations are standard practice aboard our ship, but the blowing sand and the decreased visibility was something new to everyone.

Photo composite

to take interval behind the SAR aircraft and each other. Four helicopters now were entering the port Charlie pattern for landings on various spots on the flight deck. Because of LHD NATOPS restrictions, which require aircraft to land behind each other on the flight deck while using NVDs, the SAR aircraft would be the first one the Air Boss cleared to land.

Here's where things went awry. Because the SAR aircraft had turned crosswind and entered downwind earlier than expected, it had reached an abeam position of its desired landing spot earlier than expected. The Air Boss could not turn the SAR aircraft to its base leg for landing until the last CH-46 had cleared the flight deck. This situation put the SAR aircraft deep on its downwind at the 180.

The SAR aircraft was cleared "Charlie spot five" by the Air Boss and began its turn toward the ship. Meanwhile, the AH-1W went deep on the downwind, with interval for its intended landing on spot six. The Air Boss cleared it to "continue for spot six, your traffic short final to spot five."

The aircrew of the AH-1W acknowledged the call and reported traffic in sight as it began turning inbound to spot six. The third aircraft in the line was the first CH-46. He was cleared to continue for spot seven "with interval an AH-1 on a 'long' final to spot six." The CH-46 pilot rogered the call to continue and started his turn to the 90 without acquiring a visual on the AH-1W in front of him. The CH-46 pilot called "Roger" and turned inbound to land on spot seven. As the AH-1W turned final, the pilot turned off his overt anti-collision light as required by LHD NATOPS.

Disaster almost occurred as the crew of the AH-1W were recovering from their deep downwind and were approaching the flight deck at almost a 30-degree recovery angle. At the same time, the CH-46, inbound to spot seven, was approaching at a normal 60-degree angle to the flight deck. Both aircraft were converging on the same airspace. Fortunately, the crew of the AH-1W recognized the dangerous situation and took immediate action with a quick, right-hand banking turn to cross the stern of the ship and enter the safety of starboard delta. After the close call, the CH-46 aircrew took a waveoff to spot seven and reentered the portside landing pattern. The fourth and final CH-46 made an uneventful landing on spot seven.

After a lap in the pattern, the close-call CH-46 was cleared for a landing to spot nine. Since spots six and seven are not adjacent on an LHD, the AH-1W then reentered the Charlie pattern, and the Air Boss cleared him for a "Charlie spot six." With all four aircraft now safely back on deck, the decision was made to call it a night.

Nighttime NVD operations are standard practice aboard our ship, but the blowing sand and the decreased visibility was something new to everyone. Pilot reports of worsening visibility and their difficulty identifying the outline of the ship with NVDs at two miles should have raised a flag for everyone involved with the flight operations.

The principles of operational risk management include continuous reevaluating if conditions change. In this case, everyone was aware of the blowing sand, but the conditions progressively had worsened as the night went on.

The chain of events that led to this potential mishap could have been broken if:

- The pilots had recognized the increased risks because of the reduced visibility, or
- the SAR aircraft crew had obtained the interval desired by the Air Boss, or
- the AH-1W pilot had not been forced to fly deep on its downwind leg, or
- the CH-46 actually had had the AH-1W in sight before turning inbound for landing, or
- the Air Boss had made sure that the CH-46 had the AH-1W in sight before giving him clearance to turn base.

Elimination of these ifs would have turned flight ops into just another night for the embarked ACE. The quick reaction of the AH-1W aircrew meant this close call will only exist in the memory of those involved and those who read this story.

LCdr. Saling was the safety officer on USS *Iwo Jima* (LHD-7).

Crew Resource Management

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

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Bow-On Recovery

By Lt. Kevin Sproge

As a nugget pilot on the second month of cruise, I finally spared some brain power for something other than taking off and landing on the ship at night. We were settling into a routine of mostly night operations in the Arabian Sea aboard USS *Enterprise* (CVN-65). I was tasked as red air as part of a division defensive-counter air (DCA) and spent most of the flight with altitude-hold on. The automatic-throttle control (ATC) was set at max endurance, as I "died" bravely for the motherland. The entire night was setting up to be uneventful as I checked in with red crown and strike on the way back to mom.

I checked in with marshal about 30 miles out. My marshal instructions were to be on the 130 radial at 22 miles and angels seven. The expected final bearing was 309 degrees.

I began my descent and headed toward my holding point while doing the standard check to make sure I didn't marshal 180 degrees out. I worked the standard timing and pushed on time.

"Marshal. 300 commencing state 6.3, altimeter 29.87."

"300. Radar contact 22 miles. Fly the CV-1 for the expected final bearing 309. Current final bearing 108. Mother's in a slow port turn.

At 6,000 feet, I was switched to approach and reported, “Approach. 300 checking in platform.”

“300. Approach. Final bearing one one five. Mother in a port turn for the expected three zero niner. Stay clean; I’ll call your dirty.”

On the descent, I was concerned with making sure my checklists were done, double-checking my altimeter warnings, getting on the final bearing, and leveling off at 1,200 feet. I also was keeping an eye on the airplanes that had pushed before me.

The next call on approach was directed to the Tomcat immediately before me. I heard, “115. Traffic launching off the bow.”

I thought the launch must have been delayed, and the call just was informative. The next thing I knew, I was looking at eight miles on the TACAN. I wondered how I had gotten to eight miles so quickly without realizing it and berated myself for being so far behind the jet for a night trap.

I dropped the gear and reported, “Approach. 300. Eight miles.”

Approach replied, “300. Dirty-up. Fly heading 240.”

I felt a huge thump as I passed well within 500 feet of another Hornet that just had launched off the ship’s bow and was climbing out.

Photo composite

Although the 70-degree cut to the left didn't make sense, one look at my HSI showed me right of course. I guessed CATCC wanted an aggressive correction early. I turned to 240, but, as I approached my programmed course line, I heard nothing from approach. Finally, I corrected back to 309 without waiting for a call. I overshot the centerline and was heading 020 to get back to centerline.

Shortly after I began the turn, approach called, "300. Right to the downwind 310. 300. When out of turn, traffic 12 o'clock four miles, Hornet your interval."

As I corrected to centerline, and with the ship still in sight, I had no needles, bull's-eye, or laser lineup. These problems didn't necessarily bother me because we'd had issues with all three systems on the ship. We had been shooting self-contained approaches at night during the cruise. What did bother me was being close to the ship without getting at least a CCA, and it seemed like more lights were in front of me than there should have been. The distance counted down much too quickly, and I found myself at two miles, at 1,200 feet, and feeling unable to make a safe approach.

"Approach. 300. I'm going to need a right 360."

"Calling approach, say again."

"300 is going to need a right 360."

"300. Negative. Fly the downwind heading 310."

"300. Continue left turn 260."

As my brain processed the question, "Did he just say turn downwind?" I caught a flash of a large form and position lights, and I heard the roar of engines at mil. I felt a huge thump as I passed well within 500 feet of another Hornet that just had launched off the ship's bow and was climbing out. I never saw him, and I had no time to react. How our jets didn't collide was simply dumb luck.

Part of my brain still was flying the airplane. I put in a break turn to the left in full blower just to get out from in front of the bow. As I got my wings level and tried to sort out what just had happened, I heard from the Tomcat in front of me, "99. I think the departure reference radial and the marshal radial are synonymous."

"300. Fly heading 270. We're launching off the bow."

"OK. 99. This is climax. You are correct. The ship is heading about one four zero. Listen-up for the final bearing. We're turning departures out to the right, so you're going to be entering downwind and then hooking in—so heads up."

Finally, my situational awareness (SA) kicked in. I turned downwind and managed to get aboard with some help from CAG paddles. Once I got the jet shut down, it took 10 minutes for my hands to stop shaking enough to undo my straps and climb out.

Obviously, a tremendous breakdown in SA had occurred, a breakdown that got me two miles in front of the bow during a launch. During the investigation, we listened to the tapes of departure, approach A and B, and marshal. The problem started somewhere between the bridge and CATCC. The bridge had passed to CATCC they were going to turn for a final bearing 309 at the time the ship was heading 110. Instead of turning left to make the expected final bearing, the ship actually turned right to head 140. While this change was going on, CATCC had assumed the ship would turn. Shortly after I switched to approach, marshal had the rest of the marshal stack delta four, so they could sort out what was going on.

Finally, marshal had announced, "99. We are doing a bow-on recovery; expect vectors to downwind."

Having already switched frequencies, I never heard this call. On departure, another Hornet had a close pass with aircraft 115, the Tomcat in front of me. He had reported to departure control that the departure and marshal radials were almost the same. Departure started giving traffic calls to the pilots launching off the bow.

Although some SA was out there (that never made it to my approach frequency before the near-miss), there potentially was enough SA for me to avoid the situation altogether. Approach gave me a turn to 260 and then a "right to the downwind 310" call. I had heard exactly what I expected to hear, and my brain interpreted the call as "Turn right to the final bearing 310." Perhaps the biggest lesson I took away from this entire incident is to listen carefully to every radio call and to make sure I am hearing the information correctly.

As pilot in command, I ultimately am responsible for the safe operation of the aircraft, and I need to take independent action if something doesn't seem right.

Lt. Sproge flies with VFA-82

ORM Corner

Mother Nature's AAA

By Lt. Matthew Bogue

During tactical training, we're taught about the combat losses we've suffered as a result of anti-aircraft artillery (AAA). We're shown graphs and statistics that outline how AAA, despite being low tech, has posed a significant threat to aircraft. We're taught techniques for avoiding AAA, and we practice evasive maneuvers. One night, we learned how Mother Nature's AAA (hail) can damage aircraft.

We had briefed for a flight in support of Operation Iraqi Freedom. From the outset, we knew the weather was bad. Our weather brief indicated thunderstorms and cloud tops to FL470, with bases starting in the 20s. A milky soup bowl was below us, from the surface to the upper teens, and our only refuge was in the lower 20s. We stayed on profile, and our wingman managed to stay aboard.

ORM Corner

Please send your questions, comments or recommendations to:

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The lightning again picked up, and soon we were rocked with hail.

I made certain our engine anti-ice was on as we penetrated the first line of thunderstorms. We encountered turbulence, lightning, and a spectacular amount of St. Elmo's fire emanating from our refueling probe. As we cleared the first line, we found some clear air and caught sight of a section of aircraft to our south and 1,000 feet above us.

Before entering the second line of thunderstorms, we tried to use radar to help pick our way through the storm. Unfortunately, our radar didn't work—neither did Dash 2's. As we continued west, we found ourselves back in the goo. The lightning again picked up, and soon we were rocked with hail. Simultaneously, we noticed significant windshear (evidenced by rapid airspeed fluctuations), and the turbulence became severe.

Our wingman decided enough was enough and detached. He immediately descended 2,000 feet and missed out on the icing. In the blink of an eye, the windscreen totally was iced over, and our pitot instruments went stupid. As soon as Dash 2 detached, we came up on air-to-air TACAN to monitor our separation and knew it was safe to descend. We descended to warmer air, and the ice quickly melted away. We heard a rush of air that quieted once we were back in clear air.

A little shaken but no worse for the wear, we pressed on with the mission. The weather to the west was clear.

This was combat, after all, and other pilots were depending on us for their safety.

We continued westbound and coordinated our tanking. Thanks to an exceptional controller, we rendezvoused with the tanker and filled up. We reviewed our timeline, then pressed north to our station. As we turned at tactical airspeed, we heard an incredibly loud

rush of air and felt a vibration. I immediately checked the engine tapes, and I was relieved to see two good motors. The crew took a minute to assess any battle damage and quickly decided we hadn't encountered enemy fire. We knew it was time to go home.

Although we didn't know exactly what had happened, we knew being over enemy territory was no place to be with probable hailstorm damage. When we were back in friendly territory, and I felt safe, I broke out the damaged-aircraft checklist. We had enough gas to reach the boat, and we headed that direction while reading through the checklist. We had considered diverting, but our divert fields were beneath the thunderstorms. By returning to the boat, we could have the recovery tanker look us over before configuring for landing.

We climbed to FL370 to get on top of the storm lines we'd initially encountered, and we returned on a more southerly track to avoid the storm. On the descent, we reconfigured the jet for red lighting, and we found the first of many "snakes" in the cockpit conspiring to make our RTB as painful as possible. When we rigged for red, the green cockpit lighting extinguished, but only the red lights on the pilot side functioned. I had no red lights and was reduced to using my flashlight. We were directed overhead to find the recovery tanker, and, unfortunately, the weather overhead significantly had deteriorated since our launch.

The weather was marginal VFR, in rain and broken clouds. We couldn't find the recovery tanker for a quick damage assessment. So, we did a quick risk assessment and decided, if we configured normally, we could come aboard and stop the insanity. We put down the flaps and slats and got a normal slat indication, but we got a barberpoled vertical stab and flaps. After what seemed like an eternity, we finally got a good wing configuration via normal methods. When

we lowered our landing gear, only the left main indicated normal. The right main eventually came down, but the nose gear was hung. We had several indicators in the cockpit that the gear was indeed hung, including a transition light that flooded the cockpit and felt like a flashlight pointed directly into our eyes. Using our "dirty" bingo fuel as a guide, we realized we needed gas to work through our gear problem and still make it to a southern divert field.

CATCC gave us a vector and steered an S-3 to rendezvous on us. By this time, our state was 5.0; we were below ramp fuel and rapidly approaching a dirty-bingo profile. The S-3 found us and said our gear appeared to be three down and locked. As we worked our unsafe-gear-down checklist, we faced the prospect of tanking in poor weather while dirty.

What more could go wrong? The S-3 put the basket out, and, with an exceptional display of piloting skill, we were plugged and receiving fuel.

I reported our status to the crew over the ICS. The next call I heard from the back was, "Are we taking gas?"

I replied, "We're 4.0 and taking gas."

Again, I hear, "Are we taking fuel or not?"

Adding insult to injury, ECMO 1's ICS was now receive only. With one hand on the windshield-air switch, to keep the rain from obstructing the pilot's view, and the other hand holding my flashlight on the fuel indicator to monitor our state, I managed to troubleshoot my ICS. The only way I could communicate with my crew was to transmit on our squadron tactical frequency. They only could hear my sidetone.

Mercifully, while tanking, our nose gear finally indicated down-and-locked. We were state 6.5, normal configuration, and ready to come aboard. As we turned inbound on final bearing and reached seven miles, the controller reported, "503, seven miles, lock-on, say needles."

I replied appropriately, and, despite not seeing the boat, the approach was proceeding normally. Then our ACLS dropped lock several times, and we instead decided to fly the bull's-eye. To help matters, the ship put in a hard turn to starboard as we passed five miles. Inside of three miles, we tipped over and started our descent. I barely had started to make out the ship when paddles asked us to turn on the taxi light; it was just like driving through fog with your high beams on. At a mile-and-a-half, I no longer could make out the ship, and I couldn't evaluate our lineup. The pilot was inside at this point and could not make his normal needles-to-ball transition. At three-quarters-of-a-mile, I saw the deck, picked up the ball, and made the call. We caught the 3-wire on an OK pass. Finally, our nightmare was over.

As we were shutting down, we knew by the ground crew's reaction something was worth seeing. A small crowd had gathered in front of our jet. We unstrapped, jumped out, and saw an imploded radome, a missing probe light, and an absent lower anti-smash. Our leading-edge vertical stabilizer (the football) was destroyed, and numerous punctures were on the pylon-leading edges. Our refueling probe was nicked and delaminated, our intakes were punctured, and the wing-tip leading edges had taken a beating. Also, our wingman had suffered some damage, although not quite as severe. Six other aircraft from our airwing diverted to the beach that night, and some of them had suffered hail damage.

Crew coordination played a crucial role throughout the flight. While we were fighting the "snakes" up front, the backseaters took care of some essential comms—one of the benefits of a four-seat aircraft. They talked to our rep and monitored instruments. We reviewed our options and made a plan; we each took a part of the situation and evaluated it, then decisively dealt with it. Unfortunately, operational necessity sometimes dictates that we drive ourselves into situations we normally would avoid. When that occurs, crew coordination and communication are essential.

Lt. Bogue flies with VAQ-131.

Live Strong, Ride Safely

By LCdr. Kirk Volland

This year, millions of Americans tuned their televisions to the Tour de France to watch Lance Armstrong race to his sixth victory in this century-old event. Whether he was charging up the Alps or rocketing along on a solo time trial, Lance's exploits likely will motivate many Sailors to head out for a ride.

Cycling is great, but it isn't without danger. Six hundred sixty people died in the United States in fatal bicycle accidents in 2002. Even a casual Tour viewer probably can recall several spectacular crashes that marred the first week of this year's race, including one that briefly brought down the man from Texas. Whether you're a pro or a novice, everyone wins if you follow these safety tips:

Bicycles are vehicles, not toys. Sure, you can buy a bicycle at a toy store, and there may be ones for kids in the toy section at the NEX, but bicycles are transportation. Don't believe me? Ask any one of the millions of Chinese who get from point A to point B by bike. OK, so you're an American. One of the Federal Highway Administration's (FHWA's) goals is to double the percentage of trips made by bicycle to reduce traffic congestion.

Ever get miffed at some guy on a bike for slowing you down—the one you couldn't get around because he was taking up space in *your* lane, instead of riding on a sidewalk? Stop and imagine how absurd, not to mention hazardous, it would be if Lance or one of his U.S. Postal Service teammates tried to ride 18 to 25 mph on the sidewalk, dodging pedestrians, kids, and joggers. It would be a disaster.

Distracted by talking on cell phones, wearing headphones for MP3 players, enjoying the scenery, or engrossed in conversation, people on the sidewalk just aren't attentive enough. Neither are they expecting to need to dodge vehicles like a bike. That's why traffic laws grant cyclists the same rights to use the road as motorists, while requiring they abide by the same laws governing other vehicles.

While many people innately fear bike-vs.-automobile collisions, studies have shown that 70 percent of bicycle accidents don't involve cars at all. Rather, they are the result of falls or collisions with pedestrians. The FHWA's bicycle-injury study of emergency-room visits shows that 60 percent of bicycle-pedestrian crashes occur on sidewalks, which isn't surprising because that's usually where you find pedestrians. Bottom line, bicycles belong on roads, where they are less likely to run into pedestrians and safely can maintain higher speeds.

Don't ride on the sidewalk. Riding on the road reduces the potential for pedestrian-vs.-bike collision and avoids one of the frequent car-bicycle collision hotspots: driveways. It's easy to see how this kind of collision could happen; just think about how you leave your driveway at

home or pull out onto a street. You look left for approaching traffic as you pull out because you're driving a car and don't want to hit another one.

Wham! Didn't see that guy on the bike on the sidewalk, did you? Of course not; you were looking in the direction of the oncoming cars, not to the right for someone riding the wrong way on the sidewalk. Why do bicyclists go the wrong way? Early education provided to children to walk facing traffic translates into wrong-way bicycle riding as they grow and take up cycling. It's well-intentioned guidance but dangerous. Driveway accidents like this account for two-thirds of the car-bike injury accidents that occur off-road.

At some point, sidewalks end—when they cross a street, for example. That's when sidewalk riders ride across crosswalks. A driver making a right turn at an intersection has little time to brake to avoid hitting you because he's likely scanning left, again looking for oncoming cars.

Ride where you'll be seen—in the street, where motorists look for what matters to them: cars. Riding in the same direction as traffic on the right side of the road improves the odds that motorists will see you before they pull out of a driveway.

Don't drink and drive (or ride). Even though Lance may hoist a ceremonious champagne toast while cruising to victory on the Tour's last day, cyclists never should ride under the influence of alcohol. Amazingly, 23 percent of the 660 fatal cycling injuries nationwide in 2002 involved bicyclists who were legally drunk (blood alcohol concentration at or above 0.08). A Johns Hopkins study of bicycle accidents in Maryland backs this finding, while showing that only 5 percent of intoxicated cyclists wear helmets.

Intoxicated cyclists also are likely to be repeat offenders, with a history of automobile DWI infractions—that's why they're riding a bicycle and not driving anymore. Even if you're not riding under the influence, be alert for drivers who are. In one-third of fatal cycling accidents, either the cyclist or the driver legally was intoxicated. Ride defensively. Whenever you expect more intoxicated drivers out on the roads (e.g., evenings and weekends), be especially wary.

Avoid riding at night; use lights if you do. Injury rates climb in the late afternoon and into the evening, with the peak fatal-injury rate occurring between 6 and 9 p.m. Why? The

These bicyclists are enjoying a ride in the country. But, what's wrong with this picture?

increased traffic volume during rush hour may cause the peak, or it might be due to decreased illumination as dusk turns to night. State laws like those of California require not only side and rear reflectors but also a white headlight when riding at night. Without lights, you're virtually invisible, so don't be surprised if some S.O.B. in an SUV turns left across your path; chances are, he really couldn't see you.

Ride defensively, always. A left turn across oncoming traffic, where the motorist fails to yield the right of way to an oncoming cyclist is one of the classic and most frequent bicycle-vs.-automobile accidents. It accounts for half of car-bike collisions. Alarmingly, 21 percent result from motorists who fail to yield at a traffic signal, often when they simply violate the law and ignore the sign or light (e.g. they run a stop sign). What can you do?

First, if you're riding, stay alert. Never wear headphones. Ride predictably, just as if you were another vehicle, albeit a slower one. Make eye contact with drivers, but be prepared to react. At intersections, scan left and right, and never assume that, because the light is green for you, a car approaching the intersection from the right will actually stop at the red light. Obey traffic laws and signals. If you don't, you'll look pretty hypocritical on the pavement after you expected a motorist to obey the law.

If you're driving, slow down, relax, put down the cell phone, and appreciate the speed and power you have under your control. Once you've ridden a bicycle somewhere, you'll instantly appreciate just how fast you can get anywhere by car. A 45-mph speed limit seems pretty fast, compared to the 12 mph you could manage on your mountain bike. Driving safely is a huge responsibility; that's why there's a licensing process.

Although none of us mortals likely will approach the cycling greatness of Lance Armstrong or his supporting cast of U.S. Postal Service teammates, each of us can enjoy it at our own pace. Setting out on the road, under your own power, lets you experience life and your environment in a way that's impossible from within the confines of an automobile. Regular bicycling is a great way to fight obesity, a far greater danger to Americans than anything associated with riding a bike.

LCdr. Volland flies with HSL-47.

From FY00 to FY04 Sailors and Marines had 76 bicycle mishaps, six were fatalities.

The author is an avid cyclist, who frequently commutes by bicycle and logs an average of 4,000 miles per year. He's been involved in two accidents in eight years, both of which happened when he fell over after failing to unclip his shoes from his pedals.

Here are a couple more safety items, as recommended by the Bicycle Helmet Safety Institute, National Highway Traffic Safety Administration, and National Safety Council, to think about when it comes to riding bicycles:

- *Riders should wear reflective clothing during low-visibility conditions (e.g., rain, fog, at night). Other times, you should wear light-colored clothing.*
- *Although there is no federal law in the United States requiring bicycle helmets, states and localities started adopting laws in 1987. Parents should remind their kids always to wear helmets, and, if you're out pedaling with them, wear one yourself—to do otherwise is an example of poor parenting.*

Head injury is the leading cause of death in bicycle crashes; it's also the most important determinant of permanent disability. Bicycle helmets have been shown to reduce the risk of head injury by as much as 85 percent and the risk of brain injury by as much as 88 percent. Non-helmeted riders are 14 times more likely to have a fatal crash than bicyclists wearing a helmet.—Ed.

Don't Ever Miss Your Fifth Wedding Anniversary

By LCdr. Michael Tsutagawa

It was Feb. 20, and I was spending my fifth wedding anniversary as a geo-bachelor forward deployed in Japan. My pregnant wife was in Monterey, Calif. Sound familiar?

I was a department head in a squadron that just had completed day and night carrier qualifications (CQs) for 10 of 11 pilots on the first day of flight ops—a rare occurrence.

In a one-week period, I had single-handedly hard-downed four Hawkeyes for various reasons, and I was beginning to be known as the black cloud. But this night was going to be different. I was flying with the ComAEWWingPac pilot of the year, who was in the left seat; I felt comfortable. He was our last remaining pilot to finish CQ for VAW-115—little did we know.

The night started off uneventfully, as we launched into the moonless dark waters off Tokyo. I noticed a quick, white flash off my right side. I checked my windshield quarter panel but saw nothing. The flash must have been a white strobe from another airplane. About 20 minutes later, another white flash came from the same side. I again used my white light to check on the windshield. I saw nothing wrong; the flash must have been a thundercloud underneath us. A third white flash continued into an arcing fizzle and confirmed the flash definitely was in the copilot's windshield quarter panel.

The pilot instinctively turned off the windshield heat, and I opened the pocket checklist (PCL). We went through the emergency procedures and donned our oxygen masks. The next step of the procedure had us pull the windshield anti-ice circuit breaker (CB). After I slid back my seat and looked for the CB, the mic cord to my oxygen mask disconnected from the ICS adapter—another unwanted distraction. Another check of the quarter panel revealed a five-inch crack. Even though the crack was determined to be on the outside pane (the inside pane is the load-bearing member),

we played it safe and headed back to the ship with our masks still on for an early recovery.

After going through strike and marshal, we eventually wound up at 1,200 feet and eight miles on final. Thinking we were close enough to landing, we dumped down to 200 pounds above max trap and dirtied-up. As we ran through the landing checks, I stared at the landing-gear indicator. The right main-landing gear indicated unsafe, with light in the gear handle, flashing wheels light, and no AOA indexers—great. We now had a gear emergency, along with a cracked windshield; I sucked oxygen from my mask. We cancelled the approach and requested angels two for troubleshooting. "Deferred emergency. No rush," or so I thought.

I went to the landing-gear-handle-down-with-any-unsafe-indication procedure of the PCL and executed the items while my pilot kept flying the aircraft. The combat-information-center (CIC) crew in the back inspected the right mainmount; it appeared to be down. After checking the hydraulic pressure, the procedure called for resetting the wheel-and-flap-indicator CB. Again, I slid back my seat, leaned back to find the CB, and, for the second time, my mic cord to my oxygen mask disconnected. After I told my pilot of this problem, we decided to put away our oxygen masks because they were causing too many complications.

We used ORM techniques and decided not to put positive and negative Gs on the aircraft while dirty, at night, and during CQ. We also decided not to cycle the landing gear to avoid aggravating the situation. I felt confident blowing down the gear would fix the problem, or so I thought.

The ship's combat-information-center officer (CICO) maintained situational awareness and crew coordination regarding our fuel state of 3.6. He also calculated the dirty bingo numbers for 135 miles to Atsugi, with 40 knots of wind in the face at 10,000 feet. As I tried to proceed with the emergency blowdown procedures, the CICO said our fuel state was at dirty bingo. I fumbled back to the bingo table and confirmed we were right at our dirty bingo of 3.6. Time was of the essence.

Counting on my past experience with a successful, main-gear blowdown, I made the call first to go through the blowdown procedures before we decided to bingo. This action only would take a few moments, and, if the gear came down, all my problems would go away. My pilot, meanwhile, used good judgment, kept flying the aircraft, and began a slow climb toward Atsugi, our primary divert. I continued to work the PCL. Though not a memory item, "20, 20, 120" was what I always used to remember this procedure. As we went through the PCL, we put down the gear handle and the emergency-landing-gear handle.

Nothing. Great. Now we really were at dirty bingo, with an unsafe landing gear and a cracked windshield. After reviewing our configuration requirements, I recomputed the numbers for gear down, flaps up (previous numbers assumed gear down, flaps down). We flew a textbook dirty-bingo profile, climbing at 155 knots, minus 1 knot per 1,000 feet. We cruised at 155 knots and caught our breath.

Meanwhile, the CICO coordinated with the boat while I raised Tokyo Center and dialed the transponder to emergency. The time was about 2230 on a Friday night, and we still had a cracked windshield quarter panel. I did not want to climb any higher because of this fact, but I had to stay at 10,000 feet for dirty bingo profile to maximize our gas.

After reaching that altitude, we had time to go over our situation. I declared we were emergency fuel, with an unsafe right main-landing gear, and I requested the short-field gear rigged for the Atsugi north runway. Because of the language barrier, I did not solely rely on this controller; I asked for the tower frequency to be put on the back radio. I raised tower from over 100 miles out (to our surprise) and passed the same info and request. Now that the divert field was informed, we could formulate a game plan.

The next step for unsafe gear was the emergency-landing-gear matrix. It called for dumping excess fuel, making a field arrestment, possibly securing the engine on the same side as the gear failure, and making a single-engine approach. After a thorough crew discussion, we decided to secure the engine on short final and to set up for a single-engine field arrestment. If we had kept the prop running and the gear had collapsed, we would have caused more damage to the prop and fuselage with exploding fiberglass going everywhere.

A lot of radio chatter was on our tac freq. Apparently, a Prowler was single-engine behind us and also was diverting. The boat told us that we had to go to Yokota AFB, 20 miles farther north—great. I had a cracked windshield, unsafe gear, an emergency-fuel profile, a communications barrier, and now the boat is telling us to go to a field farther away—negative.

The back-end crew already were in comms with the emergency Prowler. I told the Prowler pilot of our situation: emergency fuel, and we needed to go to Atsugi for the trap. When I asked for his fuel state, he said he had 13,000 pounds and could make Yokota. Afterward, I learned that single-engine Prowler procedures call for ejection if any secondaries are noticed on the good engine—this drove his decision to go to Atsugi. We also learned that Yokota was closed, and they had to land in the opposite direction on the south runway to get the only rigged arresting gear. Keeping good situational awareness and communications outside the aircraft was critical to minimizing our risks of going where we did not want to go and without the gas to do it.

As we headed inbound, one of my concerns was that the short-field gear would not be rigged because of miscommunication with the Japanese controllers. I was relieved when we were told to contact Yokota Approach, and an English-speaking controller responded. I repeated, for the third time, our request for the short-field gear to be rigged on the Atsugi north runway. I even requested he contact our base beach detachment. Good communication was critical to controlling our risks. Events finally were falling into place.

As we approached the beach, we saw a low, broken layer at about 2,500 feet—not optimum, but we decided to get below the layer and stay VFR. Our let-down-point on our bingo profile was eight miles from the field. Our plan was to descend at flight idle from 10,000 feet at eight miles, get below the layer, and set up for a straight-in for the north runway. We would do a single-engine landing and keep the right gear off the ground as long as possible. If the gear collapsed, we would be ground looping.

My pilot's situational awareness of the field's location was great as we penetrated the low layer. Once below it, we set up for the straight-in and engine shutdown at five miles. Events happened quickly in the final stages of our flight.

We briefed the engine shutdown in depth, covering "power, gear, feather, fire, flaps, max rudder." I used the condition lever to feather the prop. The right prop feathered as advertised, and my pilot flew a great single-engine landing, keeping the nose high as we caught the field wire. The gear did not collapse—no need to worry about ground looping.

Once in the wire, we put a ground lock on the unsafe landing gear to prevent it from collapsing. We decided our aircrew, instead of the Japanese fire-rescue crew, would pin the landing gear. While still in the arresting gear, we also had the radar officer pin the right mainmount. Because no tow tractor was available at that hour, and a Prowler possibly was behind us for the trap, I taxied off the active runway to the line, single-engine, with the gear pinned. Later, we found the mainmount was unsafe because of a mechanical problem.

The single biggest CRM point that saved the day was the CICO's query of our fuel state. The communication of the dirty-bingo number resulted in the time-critical decision to bingo shortly after getting the unsafe-gear indication. The max trap weight of 601 just happened to be near our dirty-bingo number that night.

From the cracked windshield, to wearing our O2 masks, to an unsafe gear indication, we had many distractions in the cockpit. Good situational awareness and communication from the back-end crew recaged our heads to the correct mission analysis and the decision to bingo dirty. We rapidly had adapted to deteriorating conditions in the final phases of flight to the boat. Once we were bingo, good communications made sure the arresting gear was set for our arrival. Good situational awareness kept us attuned to the Prowler's emergency; this fact was critical because two emergency aircraft requiring arrested landings were going to the same single-runway airfield. The ship wanted us to divert to Yokota and the Prowler to go to Atsugi. Assertive communication reinforced our need to go to Atsugi, instead of the Prowler, and avoided a conflict.

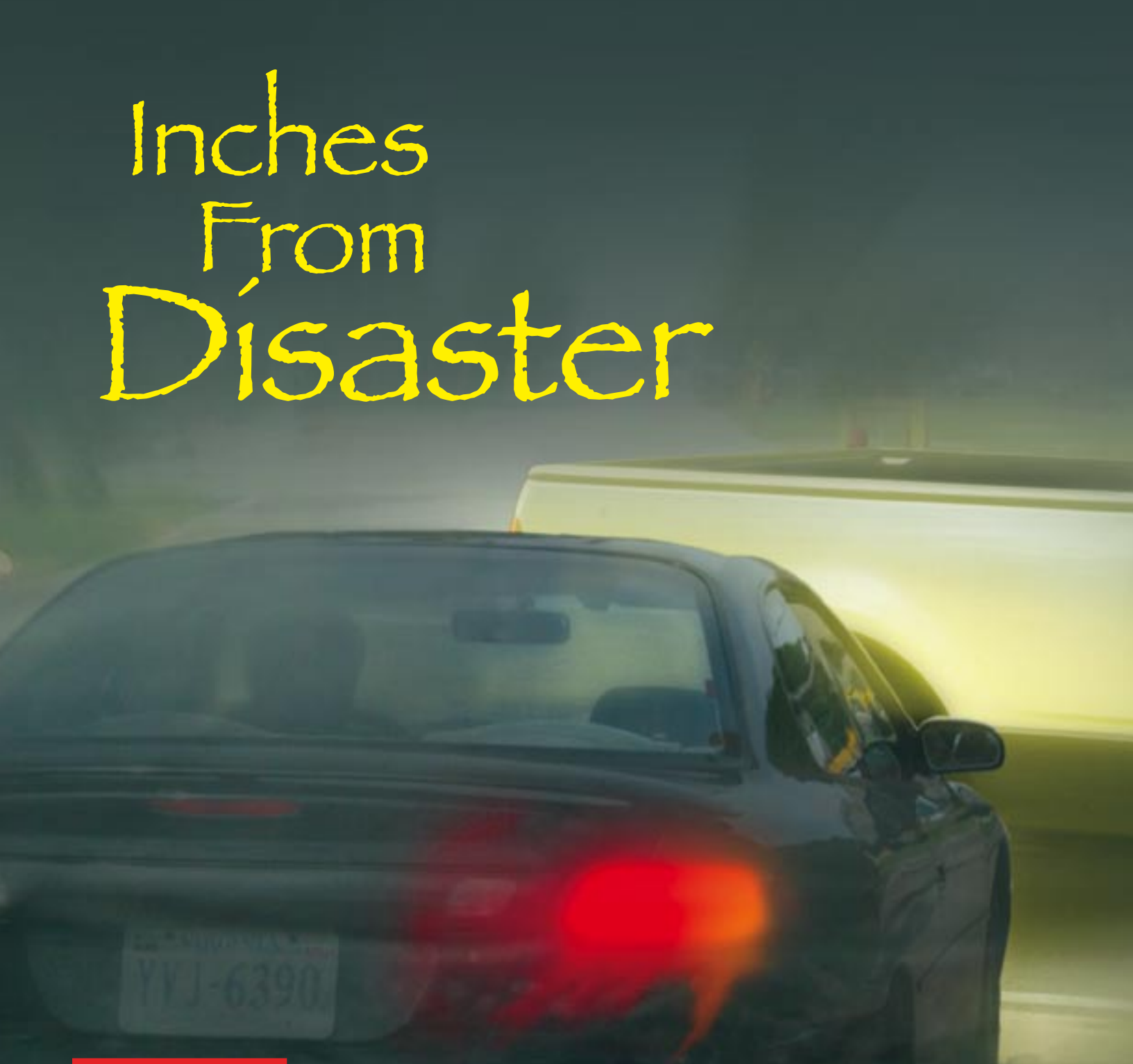
The decision to make a single-engine approach to an arrested landing was influenced by a junior radar officer. A junior aircrew's assertiveness contributed to our making a better decision. We briefed our plan, maintained situational awareness below the overcast layer, and executed the shutdown and single-engine field arrestment.

Finally, never miss your fifth wedding anniversary, or bad things will happen to you—besides your wife getting mad. Great ORM and CRM saved the day so I can see my next anniversary. This story is another testament to the pilot-of-the-year's skills, but he still didn't finish getting night-qualed.

I called my pregnant wife that night. She was surprised but happy I would call on our anniversary because she thought I was out to sea. I wished her a happy fifth but did not tell her what it took for me to make that special phone call. And I don't think I ever will.

LCdr. Tsutagawa flies with VAW-115.

Inches From Disaster



By Ltjg. Nate Anderson

As an aviator, I've been taught ways to avoid a near-miss while flying. Thankfully, I have yet to experience anything close to a near-miss in my short career, and, if I'm careful and smart enough, I never will.

When it comes to near-misses while in my car, I haven't been so lucky. Even with 14 years of experience under my belt, I've had two razor-thin close calls in the last few years.

The first such incident occurred while my family and I were driving to Orlando, Fla. We were southbound on a major interstate, completely oblivious to the fact that, within a matter of seconds, another vehicle nearly would broadside us. Other than having several of my family members in the car, I recall no other major distractions that particular day. I wasn't using my cell phone, wasn't fumbling with the radio, and wasn't trying to eat or drink like so many other

people on the roads today. Instead, I was minding my own business, obeying the speed limit, and staying in my own lane when, out of the blue, I caught a glimpse of a car careening across the grassy median.

This wildly out-of-control vehicle passed in front of our car, missing it by mere feet. If I had been traveling just a smidgen faster, or if the ruts in the median had affected the other driver's course of travel even slightly, I may not have been here today to tell this story.

The out-of-control vehicle wound up in the thick Florida foliage, with its rear wheels still spinning at max speed. I never did learn the root cause of this near-miss, and I'm sure I never will.

My most recent near-miss happened while I was attached to VT-27 in Corpus Christi, Texas. The roads that evening were wet from rain. I recall driving at or maybe a little faster than the posted speed limit—definitely unsafe for the environmental conditions. I was on my way home after a hard day's work as a flight student.

While approaching an intersection, where there was a green light, I sped up to ensure I made the light. At the same time, I noticed a pickup truck in the intersection start forward, turning directly across my path. I immediately slammed on my brakes and laid on my horn. Because of the wet pavement, the braking action was poor. By sounding the horn, I hoped the other driver would realize the imminent collision and speed up to avoid it. Most likely, though, it just scared the crap out of him.

As my car continued its uncontrollable slide toward the rear of the turning pickup, I quickly calculated my options. I couldn't swerve to the right because I then would T-bone the truck. If I swerved to the left, I would have a head-on collision with oncoming traffic. Option three looked better than anything else: Brace for the pending collision.

At the instant the two vehicles should have collided, there was nothing! Somehow, I had avoided hitting the rear of the turning pickup. The distance between our vehicles couldn't have been more than an inch.

I learned several lessons from these near-misses:

- Always wear your seat belt because you never know when a random driver will appear just to ruin your day.
- Always maintain a safe speed, especially on wet surfaces. Being able to stop in a timely manner can be a priceless commodity when you least expect it.
- Last but not least, I'd rather be in the air than on the roads any day of the week.

Ltjg Anderson flies with HSL-47.

Photos by John Williams. Composite.

BRAVO Zulu

The crew of Night Owl 01 conducted an initial night-landing qualification of the RQ-2B unmanned aerial vehicle (UAV). The flight followed a day-night reconnaissance event at MCAS Cherry Point.

Sgt. Jarad Demster (external pilot-under-instruction) had set the throttle to cruise on the downwind leg when Cpl. Matthew Nation (internal pilot) observed engine rpm drop to zero and the engine-cut light illuminate. Cpl. Nation reported the engine problem over ICS, and SSgt. Ward (external pilot instructor) took control of the aircraft. A dead-stick landing would be necessary because the RQ-2B cannot restart its engine in-flight.

While Capt. Daniel Reber (mission comander) told tower about the situation, SSgt. Ward abbreviated the base leg to make sure the UAV cleared the tall trees bordering two sides of the runway. Buildings and personnel were on the other side. The winds approached NATOPS limits. With only altitude and airspeed calls from Cpl. Nation, SSgt. Rembert Ward maneuvered and landed the aircraft, using only the aircraft position lights for visual reference. The cause of the engine cut is under investigation.

VMU-2

Cpl. Matthew Nation, SSgt. Rembert Ward, Sgt. Jarad Demster, and Capt. Daniel Reber

Marine Captains Andrew Miller and Joe Beals were flying their AV-8B Harrier II aircraft on a mission over southern Afghanistan in support of Operation Enduring Freedom. After refueling from a KC-10, at 260 knots and 25,000 feet, Capt. Miller pulled up to the starboard reform position to wait for his wingman to finish refueling. The tanker had started an easy left-hand turn when the canopy on Capt. Miller's aircraft simultaneously depressurized and shattered.

Capt. Miller immediately descended to 14,000 feet and broadcasted a Mayday call. Capt. Miller's wingman, Capt. Beals, disengaged from the tanker and provided navigational assistance. On the trip back to base, Capt. Miller determined the engine and the aircraft's control surfaces still were in good working order. Capt. Beals assisted with ATC and cleared the airspace in front of the flight. Having just come off of the tanker, Capt. Miller had 10,000 pounds of fuel on board, and he decided to dump 7,000 pounds to effect a safe landing. This process took five to 10 minutes.

Capt. Miller arrived at the airfield and circled overhead to complete the fuel dump. He then settled into downwind, executing a 105 percent, variable-nozzle slow landing (VNSL) with his wingman supervising.

The postflight maintenance inspection revealed no engine FOD or other damage to the aircraft. The canopy has been sent in for EI.

Capt. Andrew Miller and Capt. Joe Beals

Flying from USS *Thorn* (DD-988), the crew of Venom 502 was conducting routine escort support in the Strait of Gibraltar. Shortly after takeoff, 502's No. 2 engine-oil pressure slowly decreased below normal operating parameters. Lt. Schultz, the helicopter aircraft commander (HAC) told the crew of the pressure drop and executed NATOPS emergency procedures. He then contacted the ship's air-traffic controller and requested flight quarters.

They did a precautionary climb to 500 feet and circled the ship, awaiting a ready deck. When the engine-oil pressure continued to drop to near minimums, Lt. Schultz declared an emergency and requested emergency flight quarters. Three minutes later, a green deck was set, and they landed.

After shutdown, oil was seen draining from the underside of the helicopter. Postflight inspection revealed no engine oil remained in the No. 2 engine. The engine was removed and inspected; the No. 1 carbon seal had failed.

Attention to detail and situational awareness by the aircrew, coupled with *Thorn*'s well-trained crew, ensured a safe dual-engine landing, instead of a more dangerous single-engine landing on a small deck.

Ltjg. Elizabeth Griffiths (copilot), AW2 Trey Knight, and Lt. Bryan Schultz (HAC)

Crash Victim Thankful for PPE

I flew about 15 feet in the air and landed "like a rag doll."

By Lt. Scott Gardner

With dinner and a movie behind us, my wife and I had started home on our motorcycles. We both were in the right-hand lane of an access road to an interstate, riding in a stagger formation. I was in the right-hand part of the lane, and my wife was about a car-length behind, in the left half of the lane.

As we approached the interstate, the access road curved to the left, followed by a short, straight stretch and then an even sharper curve to the left. I realized I was running wide when we entered the sharpest part of the curve and instinctively applied the brakes to slow down. This action caused the bike to upright itself and straighten out, which, in turn, caused me to run even wider toward the outside of the lane. I leaned the bike back over to try and recover the turn, but I was in roadside gravel and debris by this time. I ended up sliding into the adjacent guardrail.

This guardrail was about two feet high, with two continuous beams of metal fastened to uprights every few feet. I almost was parallel to the guardrail when I hit it, so my right leg was crushed between the rail and my bike. I flipped over the rail into a grassy lot, and my bike bounced back into traffic. According to my wife, who had a perfect view of the whole incident, I flew about 15 feet in the air and landed "like a rag doll."

My wife called an ambulance to take me to the hospital and kept me from moving around and making my injuries worse. She had a good idea of my injuries as soon as she saw me, but I didn't find out until later. I had dislocated three bones in my right hand, torn the anterior cruciate ligament (ACL) in my right knee, sheared off the end of my right thighbone where it joined my knee, and sustained a dozen or so fractures between my right ankle and knee.

Several of the leg fractures were compound breaks that had penetrated my skin and my jeans. I underwent about eight hours of surgery after admission to the hospital and remained there for the next 10 days.

My days after returning home were filled with painkillers, doctors' appointments, and physical therapy. I spent the first month in a wheelchair, then progressed to a walker—one

just like my grandmother used. After four months, I was able to walk with the help of a cane. A month later, in January 2004, I was able to return to work and perform limited duties. I could teach students and grade simulator events, but it was July 2004 before a flight surgeon cleared me to resume flying duties. My command was very supportive throughout my rehabilitation, and their first priority always has been my recovery.

The good news is that I haven't required any more surgeries, and I should recover 95 percent use of my leg. As serious as my injuries were, I realize they could have been much worse. I believe that wearing the proper PPE saved my life—at least, it saved me from more serious injuries. I was wearing a full-face helmet, heavy motorcycle jacket, riding gloves, boots, and denim jeans. I especially was thankful for my helmet. It was damaged significantly on the top, sides and chin bar, and the face shield actually was torn off during the crash. Amazingly, after doing my "Flying Wallenda" impersonation over the guardrail, I didn't even have a headache.

Were I not wearing gloves, my dislocated bones easily could have penetrated my skin. I believe my boots helped prevent any ankle injuries. Being covered head to toe prevented me from getting any abrasions or road rash. Although denim jeans aren't really adequate protective gear, they were better than nothing. Had I slid along the road, instead of being thrown over the guardrail, my jeans undoubtedly would have shredded in the first 10 feet.

What would I have done differently to prevent this accident? I would have maintained awareness of my position within the lane. Because I was riding in the right half of the lane, I already had given up a large portion of maneuvering room. Also, I failed to recognize the decreasing radius in the left turn until I was running wide to the outside of the lane. The road where I had my accident also was poorly lit, which should have been a warning for me to be extra cautious.

Lt. Gardner flies with VAW-120

Mishap-Free Milestones

VAW-117	27 years	57,100 hours
VP-30	40 years	400,000 hours
VP-16	39 years	257,000 hours
VAQ-130	23 years	39,045 hours
VR-57	25.5 years	130,075 hours
VFA-136	11 years	47,151 hours
VFA-146	19 years	79,000 hours
VR-58	26 years	128,000 hours
VAQ-132	34 years	55,800 hours
VPU-2	22 years	56,391 hours
VQ-2	17 years	106,200 hours
VF-103	1 year	2,900 hours
VFA-131	17 years	70,000 hours
HS-10	11 years	58,000 hours
VP-45	35 years	222,000 hours
VP-26	42 years	301,000 hours
VAW-115	19 years	40,009 hours
HC-3	30 years	170,000 hours in the H-46 and 20,000 hours in the MH-60S

Letter to the Editor

The May-June 2004 edition included a picture (pages 1 and 16) of a pilot flying an H-60 with his flight-suit sleeve rolled up and not wearing gloves. With decreasing numbers of inflight fires or explosions, I realize this habit may have taken hold in some naval-aviation communities. However, I believe a publication dedicated to reducing the likelihood and consequences of mishaps should make sure, whenever possible, crewmen are shown properly wearing all required flight gear. To do otherwise reinforces unsafe cultural norms and undermines the hard work of naval aviation's life-support-equipment experts.

The "front line" for reversing the unsafe trend of flying without all required flight and safety gear is the daily diligence of each aircraft commander.

I acknowledge and appreciate all the great work that goes into making *Approach* such a high-quality and valuable publication—an awesome tool to advance naval-aviation safety.

—Cdr. Chip Strangfeld, Chief, Coast Guard Aviation Safety Divison (G-WKS-1)

Thanks for reading Approach *with a critical eye. You're right about the photo; the sleeves should be down and the gloves on (look closely and you'll also see a ring). The reference is OpNavInst 3710.7T, dated 1 March 2004, Chapter 8 (Aeromedical and Survival) p. 8-1. We used a file photo for the article.*

I also want to reference the statement on the inside front cover of this magazine. Doing any task right also applies to this magazine—that's what we strive for. In this case, we came up short.

Aviation is dangerous enough without taking shortcuts. Follow the rules, wear the protective gear, and let's get the job done right.—Ed.

There is a common misconception in many helo communities that flight gloves are optional when flying over water. This behavior is apparently justified by the belief gloves get slick and slippery when wet, hence decreasing the ability to egress during ditching. The pilot in the picture obviously is more concerned with personal comfort than following the rules.—Cdr. Chris Spain, aircraft operations division head, Naval Safety Center.

Photo of a gloveless pilot from our May-June issue that caught the eye of one of our readers.

Aeromedical and Survival

8.1 GENERAL

To improve the survivability of flight personnel, CNO (N78) has implemented the aircrew survivability enhancement program (ASEP). Sub-elements of this program are aviation life support systems (ALSS), CBRND, safety, human performance, and training. Guidelines and requirements contained here are considered minimum. Recommendations for changes or improvement in equipment, procedures, or training shall be addressed via the chain of command to COMNAVAIRFOR (N32) for evaluation and, if appropriate, implementation.

8.2 AVIATION LIFE SUPPORT SYSTEMS

The safety and survival equipment specified in paragraphs 8.2.1, 8.2.2, 8.2.3, and 8.2.4 of this manual are minimum requirements. Deviations shall be specified by the NATOPS flight manual for individual model aircraft. The latest available equipment, as authorized by aviation crew systems manuals, NAVAIR 13-1-6.1 through NAVAIR 13-1-6.10, shall be used by aircrew personnel and passengers for flight in all naval aircraft.

8.2.1 Aircrew Personal Protective Equipment Requirements

8.2.1.1 Aircrew

Note

Items marked * may be omitted by flight personnel flying in fixed-wing cargo/transport class aircraft if such flight does not involve carrier operations.

*a. Protective helmet — The helmet and visor housing shall be 100 percent covered with white reflective tape except as modified by approved aircrew system changes. Up to 30 square inches of light-colored reflective tape may be applied so long as the white tape remains visible from all directions. The use of reflective tape may degrade night vision device (NVD) performance. Temporary, nonreflective cloth covers may be worn over the reflective tape.

Note

Up to 65 square inches of nonwhite reflective tape is authorized on the HGU-64/P visor housing and a locally fabricated international orange cover is authorized for use on the HGU-64/P in Antarctic environment. Visor housings will be taped in accordance with previous paragraph and all covers removed while in CONUS.

*b. Aircrew safety/flyer boots.

*c. Fire-resistant (aramid) flight gloves.

*d. Fire-resistant flight suit (aramid) — Aramid or cotton-type undergarments shall be worn. Suitable fire-resistant unit issue clothing (aramid) may be substituted for the flight suit for flight personnel in fixed-wing cargo/transport class aircraft.

*e. Identification tags — Two tags on a chain worn around the neck.

*f. Survival knife — Do not wear exposed or attached to the life preserver.

*g. Personal survival kit — Appropriate to the area of operations.

*h. Signal device — Required for all night flights and flights over water or sparsely populated areas.

i. Survival radios and beacons

(1) Survival radios

(a) An approved voice-capable survival radio shall be carried by each aircrewman on all flights, unless otherwise directed by aircraft NATOPS manuals.

(b) A voice-capable radio shall be packed with all multiplace rafts.

Ready Room Gouge

Visit: www.safetycenter.navy.mil/articles/nsc04017.htm