

THE NAVAL SAFETY CENTER'S AVIATION MAGAZINE

approach

January 2000

**LOOKING BACKWARD,
LOOKING FORWARD:**

A Short Survey of Naval Aviation
As We Enter
The New Millennium

Bad Weather Ferry

Don't Rush Me!

The Naval Safety Center's Aviation Magazine

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features

2

Looking Back, Looking Forward, Part II.

Peter Mersky

A Short Survey of Naval Aviation As We Enter the New Millennium.

In the last issue, we'd left the young naval aviators just after their return from Korea. Now, the story continues as we hear "Fearless Fred" say...

6

What Does Bingo Fuel Mean?

Lt. Chris Chamberlain

Carrying three COs is a heavy load for this Seahawk crew.

8

How Am I Doing So Far?

LtCol. Ben Hancock

A tale of tire troubles.

10

Rime-Ice Emergency

Lt. Eddy Ha

Flying into storms and collecting ice doesn't help the flight.

12

Bad-Weather Ferry

Cdr. Chris Chamberlain

Smoke in the cockpit makes this ferry flight a short one.

15

Hey, Who Turned Out the Lights?

Lt. Armen Kuridan

An E-2's back end goes dark, signifying a complete loss of electrical power throughout the plane.

16

Too Warm for Form?

Lt. Larry Paul

This IP struggles to keep his own composure when his student gets sick.

18

I Wasn't Planning on An Emergency Today!

Lt. Dave Souza

An FRS student's eighth flight in the Prowler becomes an in-flight emergency.



22

"Flying Inverted Is No Way To Go Through Life, Son"

LCdr. Karl Klopp

The IP shows off for his student and nearly plants them both.

24

Not the Way I Pictured a Homecoming

Ltjg. Tino de la Cruz

Bad weather mars a planned formation flight into home.

26

Don't Rush Me

Lt. John E. Dougherty IV

On his first night launch in a Hornet, this nervous FRP lets the deck crew and the pressure push him.

29

A Lazy-8 Shutdown

Lt. Geoff Hicks

A fire on the flight deck makes an S-3 crew's night launch even more interesting.

30

Stuck Stab

Ltjg. Gary Lazzaro

This on-going problem in the H-60 community also makes for sloppy crew coordination.

departments

Pop-ups

- Dry-Suit Season: Are You Ready?
- Tomcat Ergonomics

ORM Corner:

A Tale of An ORM Convert

LCdr. Doug Blackburn

Using the score sheet puts the program in perspective for this skeptic.

Brownshoes in Action

Looking Backward, Looking Forward:

A Short Survey of Naval Aviation As We Enter the New Millennium

Part II

by Peter Mersky

In Part I, we discussed the birth and early developments of naval aviation, including the appearance of carriers and their associated launch and recovery operations. It was a time of great experimentation, successes and failures. By the Second World War, naval aviation was firmly established, yet there were so many areas that remained to be explored and experienced.

By the early 1950s, flight-deck developments included steam catapults and the mirror-landing system. The steam cats gave a smoother, more even shot than the WWII hydraulic devices. The new landing system soon replaced the traditional and admittedly more colorful LSO with his paddles and curious body movements. The LSO was still a vital part of the landing sequence—and of course, he remains so today—but the approaching pilot could now focus on a set of lights.



An S2F Tracker, its MAD boom and detection radar bowl deployed, overflies a diesel sub in the early 1960s.

Two HNS-1s in the late 1940s. The tiny Sikorsky was the Navy's first operational helicopter. (via NMNA).





The HAC of a Shufly helo, 1stLt. H.C. Brown, is relaxed but alert as he watches the unloading of his UH-34D. Note the door-mounted light machine gun below him.

A third innovation on aircraft carriers was the angled deck, which was developed in England. Until 1952, all carriers used axial decks, which meant that all approaches, waveoffs, and bolters had to be flown right up the deck. Crashes were especially costly because of the regular practice of stowing aircraft at the bow in clusters of as many as a dozen planes. If a landing aircraft could not go around, had mechanical problems, or another failure kept it from getting back into the air, its pilot's only course was to continue straight up the flight deck, into a barrier, or more tragically, into the pack of planes. Fires, terrible damage and loss of life were often the result.

The angled deck established a separate landing area that offered its own takeoff portion, free of the crowded bow, and probably did more

to reduce the deck-landing mishap rate than any single device or design.

Existing carriers were modified to take the new deck design, and new ships immediately benefited from the angled deck. Other modifications included reduction of the 12 to 14 landing cables to just four, and the deletion of bow-mounted cables on the axial-deck ships. Edge-mounted elevators replaced the center-deck lifts that could be damaged or rendered hors de combat by enemy action or mechanical failure, stopping all flight operations.

All these new developments, designs and devices came at a fever clip in barely a decade, 1945 to 1955. New aircraft poured from manufacturers' factories. Design and development took a fraction of today's laborious process. Some succeeded

and enjoyed long careers; others served only a few years and vanished, with few mourners. Missions changed. As always, politics, both inter-service and international, played big roles in the introduction, use and deployment of aircraft, ships, and systems.

One other development concerning the flight deck came about in the late 1950s: hazardous duty pay for junior members of the flight-deck crew. There was a limited number of "skins" available, and they usually went to the chiefs and senior enlisted members. The strikers and third-classes went without.

The omission was on the mind of then-LCdr. (later VAdm.) Donald Engen, who had watched many young people spend 15-hour days on the deck, or had seen people killed or maimed. Bucking his idea for increased pay up the chain, Engen was gratified to see his plans implemented.

The mid-'60s saw a mix of equipment and new machines entering service. Lockheed kept hold of the Navy's long-range maritime patrol mission by introducing its P-3A Orion

The carnage was unbelievable on *Forrestal* in July 1967.





The LSO, 1962. A VT-6 T-28 CQs aboard the *Antietam*. The T-28 offered high performance reminiscent of WWII fighters.

Marines in the field unload supplies from a CH-46, whose pilot keeps the nose gear in the air because there is no suitable place to land. It was a scene all too common in the rugged jungle areas of South Vietnam.

to replace its long-serving P-2 Neptune. Using the company's 188 Electra turboprop airliner, which had a short career in the civilian world, Lockheed came up with an ASW aircraft that has served for nearly 40 years in the U.S. Navy, and has also enjoyed a long career in 15 other countries.

Long-serving types of the period included the Douglas A-3 and A-4, two of the largest and smallest jet aircraft to serve aboard carriers, both designed by the redoubtable Ed Heinemann. These two aircraft were respectively intended to be strategic and tactical nuclear bombers; how-

ever, disputes with the Air Force soon altered the roles for the A-3 and A-4. The big, twin-engined A-3 quickly evolved into an ELINT platform and aerial tanker, and the A-4 became the premier light-attack bomber. Both planes served long and hard, especially in Vietnam, and many a hard-pressed pilot of a battle-damaged A-4 had reason to thank the crews of the A-3 who might have found him just as his fuel gauges were bouncing on empty.

Grumman produced a family of carrier-borne early warning, ASW and COD aircraft, beginning with the E-1/S-2/C-1 family, which also saw considerable service wherever the Navy sent its carrier fleet. By the mid-'60s, the design



had evolved into the turboprop E-2 and C-2, which still serve.

The 1960s also saw the introduction of nuclear-powered aircraft carriers. The USS *Enterprise* (CVAN-65) was the pride of the fleet. On station during the 1962 Cuban Missile Crisis, the latest “Big E” soon entered combat operations in Southeast Asia in 1965. (CV-6 was the WWII *Enterprise*, considered the most decorated ship of the war. In action since Pearl Harbor when it had been at



A Vought RF-8G prepares to launch during the Vietnam War.

sea and escaped the devastating Japanese attack, it served in many of the Pacific campaigns.) That perplexing war in Vietnam occupied military and civilian policy makers for more than a decade. It gave the Navy and Marine Corps their first prolonged test since Korea.

As in Korea, there was a mix of technology. Carrier air wings included several prop-driven aircraft, which shared the deck with the Navy’s newest jets, like the big, powerful McDonnell F-4. Throughout the bloody conflict, an ancient enemy stalked the vulnerable carriers—fire. Three times during the war, major fires erupted in three different ships, two during combat operations.

The old *Essex*-class carrier *Oriskany* was badly damaged in October 1966 while on Yankee Station (see “Fire on the ‘O-Boat,’” Sep-Oct ‘97). In July 1967, the big flattop USS

Forrestal had been on the line only a few days when a flight-deck inferno resulted from ordnance cooking off before a mission. In January 1969, during a pre-deployment exercise off Hawaii, *Enterprise* erupted in flames.

Hundreds of people were killed, and many more injured. Millions of dollars in repairs and new fire-awareness and fighting procedures came from these tragedies. New emergency breathing hoods entered service.

We have been talking mainly about fixed-wing operations, but, of course, another, unique type of flying machine served with the Navy, Marine Corps, and the Coast Guard. Helicopters have served perhaps only half of the overall period we think of when discussing naval aviation, but the helo’s several important roles and demonstrated adaptability have made it one of the most vital types in the inventory.

From its first missions in April 1944 as a rescue vehicle with the USAAF in Burma—yes, that’s right, the first Sikorsky YR-4B (the Navy’s HNS-1)



VF-96 F-4Js unload during a 1972 mission. This squadron became the high scorer against MiGs, and also featured the Navy’s only aces during the Vietnam War.



The combat direction center of USS *Kitty Hawk*.

combat missions were as early as that—through its first major, sustained use in combat during the Korean War, the helicopter has offered its employers operational qualities unmatched by other aircraft. From Korea and through Vietnam, the story of the air war flown by U.S. forces was, in large part, the story of vertical flight and its mission development.

No conflict after Vietnam occurred without major participation by helicopter squadrons. They flew from the small, confined decks of frigates, and the more expansive decks of nuclear aircraft carriers. Whether plucking moon-walking astronauts from the sea, or avoiding North Vietnamese small-arms fire to rescue downed jet aviators, Navy and Marine Corps helicopters were in the thick of the battle. They kept tabs on contraband sea lifts in the Gulf, delivered pin-point missile and rocket fire against Iraqi Republican Guard positions, and scrambled from any one of a number of Coast Guard Air Stations to grab storm-tossed boaters or merchant sailors from icy seas. Helicopters and their crews have provided some of this century’s most colorful and heroic stories.

What Does

PH 3 Corey Lewis



by Lt. Chris Churchill

Bingo Fuel Mean?

I was scheduled for the second event of the day. We were to head to the carrier to pick up our ship's CO and the CO of a CG and return them to their respective ships. The crew that had dropped them off in the morning told us the Air Boss would be unable to refuel us aboard the carrier when we arrived that afternoon. I thought it strange, but since we were dealing with the COs, I figured the ships would accommodate and stay close enough to the carrier to fly the mission without worrying about having to refuel.

During the preflight brief in CIC, the no-fuel condition aboard the carrier was reiterated over Navy Red. My first question was, "How far away is the carrier, and where is it headed?"

"Sir," our briefer said, "the carrier is fifty miles away, and we're both headed toward each other." The CG, which was our first stop after the carrier, was keeping station 5 miles from our ship. Everything sounded good to me, so I got the card of the day and went to the hangar to brief the crew. We discussed

bingo fuel, as well as the SOP concerning ship-to-ship distance limitations of 80 miles. The VIP kits were installed, and we were ready.

We spun up and asked for pigeons to the carrier. Combat responded that the carrier was 65 miles away. A red warning light went on in my head.

We had 1+50 fuel. We launched and climbed so we could contact Strike as soon as possible. The HAC conducted training by asking me questions and evaluating our contingency plans.

With 1+30 fuel, we finally got TACAN lock on the carrier at 50 miles. We checked our ship's TACAN and determined that the ships were actually 70 miles apart. At 140 knots, we'd be at the carrier in less than 25 minutes. If the ships stayed this far apart, our bingo fuel was 0+40.

Now, we had 1+15 fuel, and within 10 miles of the carrier, we were told to enter port delta, and the Air Boss reiterated the unavailability of fuel. The carrier was facing us as we approached, indicating that they were closing

the distance with our ship. As we entered port delta, the carrier began to turn to obtain the best winds for a recovery cycle. Reassessing our bingo fuel, we decided that if we weren't off the carrier's deck with at least 50 minutes of fuel, we'd have to ask the Boss for fuel. The Boss proved how quickly he wanted us on and off his deck by then telling us to hold close aboard the ship, inside the downwind leg of the fixed-wing landing pattern. So, we held and waited as the jets landed.

With 1+05 fuel, we were cleared to land on Spot 3. As we waited for the COs, I called Strike for pigeons to the CG and to mother.

Now, 0+55 fuel, and still no COs and no updated pigeons from Strike.

With 0+52 fuel, the skippers came out and got on board. Besides the two original captains, we now had to take a destroyer captain back to his ship. We got an immediate green deck and departed on the reciprocal course from which we came. Strike finally gave us pigeons to our ship, four minutes later, 75 miles from the carrier. We now had 48 minutes of gas, and it would take about 38 minutes to get to our ship. We decided that if we didn't get a TACAN lock on our ship or the CG by 35 miles away from the carrier, we would turn back. To add to our stress, our ship's CO stayed on ICS and listened to all our discussions.

Zero +35 fuel, we finally got in touch with our ship at 30 miles out from the carrier and 45 miles from our ship. During the preceding 12 minutes, I tried calling the cruiser while the HAC tried our ship. The HAC asked our ship to set flight quarters, so we would have a reachable and safe deck to land on for fuel. He also asked them to contact the CG on Navy Red and tell them to monitor their land-launch frequency. Finally, he asked them their course and speed. They replied they were headed away from us, but only at 5 knots. He told them not to go any faster since we had their CO and were approaching a fuel-critical state.

Now with 30 minutes of fuel, we finally heard from the CG on their land-launch frequency. We asked them for an immediate

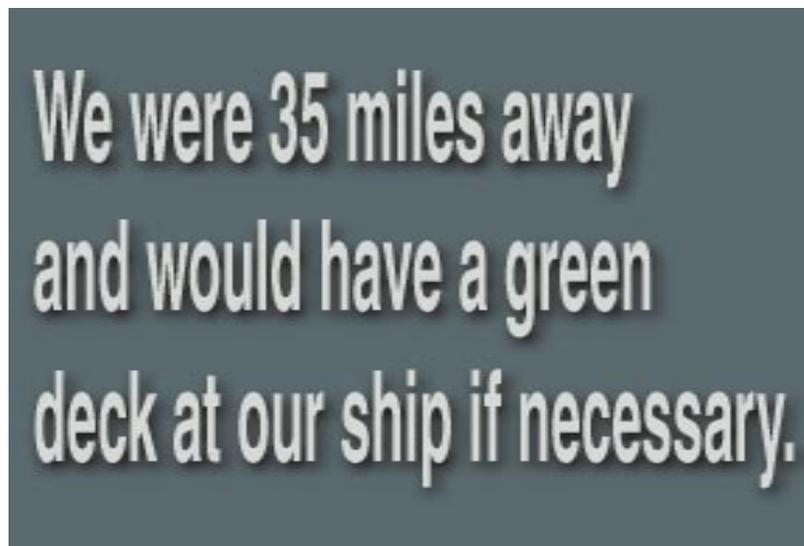
green deck on arrival with their CO and fuel as soon as we landed. For the first time during the flight, we enjoyed a warm and fuzzy feeling. We were 35 miles away and would have a green deck at our ship if necessary. The CG was only 5 miles from our ship, so we would most likely make it there without using our ship as a leapfrog.

With only 15 minutes gas, we passed our ship and the CG gave us a green deck so we continued on. Twelve minutes of fuel. We landed on the CG and off-loaded the passengers.

After the flight, we debriefed and tried to come up with things we did right and wrong. First and foremost, we felt that we should have been more vocal with the people in CIC about closing the distance between our ships and the carrier. After all, we were going to be picking up the COs of all three ships that were ultimately going to be together. During the brief we could have found out if the ship conducting plane-guard duty would have been available to give us fuel. The burden of carrying three COs also added to a dangerous feeling that we had to get the job done. Overall, though, we felt our crew had done everything in our power to adapt as conditions changed. We constantly reassessed our situation and made contingency plans.

Although we were pushed to our limits, we never painted ourselves into a corner and always had a way out. I left the flight feeling that I had learned more about being an aircraft commander than on any other flight. 

Lt. Churchill flies with HC-11.





by LtCol. Ben Hancock

The two most unforgivable sins an aviator can commit are to run out of gas or make an unintentional gear-up landing. I've avoided those, but I have also experienced and observed lesser sins that are, at the least, professionally embarrassing, such as blowing tires because of pilot error.

When I was flying A-4Ms with a reserve squadron at NAS Willow Grove, we had a reserve pilot coming down from another East Coast base for the drill weekend. His unit was

being deactivated, and he was “rushing” us, hoping to get one of the last flying jobs left. We knew he was coming, and he called us on our base frequency to give us a five-minute heads up. We were all watching from the second-story, ready-room windows as he came in for a high-speed break and landing. On rollout, he tried to make the first taxiway and was on the brakes pretty hard.

Well, he made the taxiway, but blew his left main tire. As he slowed to a complete stop, his aircraft started to lean over on the flat tire. I figured this poor guy had just literally blown his chances of getting into the unit.

He opened his canopy, leaned way out and looked back at the flat tire. Then he looked up directly at us watching from the windows.

“How am I doing so far?” he called loudly for all to hear. It broke us all up and he got the job.

Unfortunately, not all blown-tire stories end humorously. It wasn't long after that I found myself on a single-ship cross-country from Willow Grove to Davis-Monthan AFB in Tucson to deliver an A-4M to the bone yard. It was my first long, single-ship trip, and I was determined not to screw up.

I flew straight to a midwest Air Force base and broke to land. Tower turned me inside a USAF C-9 coming straight in. I flew a fast approach and landed pretty hot. On rollout, tower asked if I could make the next available left turnoff.

I said, “Sure, piece of cake.” I jumped on the brakes and made a hard, left turn and immediately felt my left tire start to shred. Damn! Tha-thump, tha-thump, tha-thump. I stopped and looked at it. It was still holding air. It was just badly bulls-eyed on one side. I taxied into parking with one ugly, deformed tire. The taxi director stared at the tire and

shook his head. I jumped out and couldn't believe that it was still holding air. I thought, "Maybe I don't have to call home and tell them that I screwed up and need a rescue party in Dumptruck, Illinois."

So, to avoid the inevitable professional embarrassment and humiliation from the former East German judges who are my squadronmates, I figured I'd fly this jet to where I could get a tire and nobody would know. I called a Navy base in Texas that had A-4s. They told me they could help me. Now all I had to do was take off then land once on this thing that used to be round on my left landing gear.

As I started up and taxied out, the flight-line guys also shook their heads in disbelief. OK, so it looked stupid, and it was stupid, but I was a young Marine aviator, and I was going to make it happen and not get a new call sign in the process.

I taxied out, tha-thump, tha-thump all the way. I got on the runway and figured if I put in right stick right away and got most of the weight on the right tire on takeoff, I could make it. I clobbered the power and started down the runway. The noise and thumping was loud and very disturbing. I got airborne, looked at the tire—it was still holding air—and I put the gear up and thought, "Man, this is a good plan."

I got to the base in Texas and made the sweetest landing I could, holding right stick all the way, but still a lot of tha-thumping going on. I taxied to the Navy line and got the same stares and head shakes I saw from the Air Force boys. I found a chief who was willing to help me, out of kindness and two cases of beer, and within an hour, I was ready to go.

I got to Tucson and delivered the A-4 to the bone yard with one brand-new tire. I was proudly telling all the bone-yard guys that the tire only had one takeoff and landing on it. I felt like I had just pulled off the crime of the century and called back to Willow Grove and reported an uneventful trip.

What did I learn from that? Always hope there is some beer-loving chief out there willing to come to your aid? No. I could have blown that tire big-time on takeoff or landing at high speed and could have risked damaging the jet.

First of all, never try to expedite a landing rollout or turn off unless you are at a controlled and safe speed. Second, if you screw it up, confess and make the right call.

I was always extra careful about tires after that trip. But after many successful years of good tire "management," I screwed up again big time.

Back in AV-8B's, this time in the Persian Gulf. My Harrier det had just taken four jets out to HMS *Invincible* for a couple days of ski-jump operations and ACM with British Royal Navy Sea Harriers. I was going to fly one of the jets back into a Kuwaiti Air Force Base because I was the guest speaker at the "grand opening" of a USAF dining facility that had been feeding our Marines. It was important to the facility manager, and I had promised that I would do my best to get there on time.

We launched and I peeled off to race to Kuwait. We always fly around the ship with our anti-skid braking system off, and we always brief that if going to a runway, someone remind everyone airborne to turn the skid system back on. Being on my own, I didn't make or get the call.

I came in to the field smoking. I broke and did my landing checklist, but as we normally see when landing at the boat, I saw the "skid" caution light on and ignored it. I double-checked that my gear was down, (avoiding cardinal sin number one) and landed. Then what did I do? I tried to make the first available turnoff and stepped on the brakes. Boom-boom. Just like that. I knew immediately what I had done and saw that skid light looking right back at me. I even thought I heard the aural warning system say "Yes, you knucklehead, you just blew your tires." This time, there wouldn't be any air left to limp in on. And no thirsty chief to bail me out. The Kuwaitis in the tower sounded unimpressed.

It all boils down to two things: complete landing checklist, and don't get rushed by anything waiting on the ground or in the air. Unlike my buddy back at Willow Grove, I couldn't key the mike and ask the world, "How am I doing so far?" No one would have laughed that time.



LtCol. Hancock is the XO of VMA-214.

Rime-Ice Emergency

by Lt. Eddy Ha



No matter how good a brief sounds, or how nice it seems when you walk to the jet, weather can always take a rapid turn for the worse. And how many times have those forecasts been wrong? Toss in some weak UHF radios, and your relatively mundane hop can swiftly become intense.

We were on the last leg of a cross-country flight returning to Whidbey from the East Coast. After being an airborne spare for a sister squadron on their way across the pond,

we began our return via Wright-Patterson AFB and Buckley ANG. Buckley was one of the few bases open on the Friday before the July Fourth weekend. After a bite and a quick turn, we rushed to get back and depart before the airfield closed.

Immediately after takeoff, things began to go wrong. After we took off on runway 14, approach vectored us to the west. The climb to the filed FL240 was held down to below FL180 while the controller handoff progressed

slowly. Seeing clouds ahead, I saw that penetration wouldn't be a problem. The weather brief indicated that our filed flight path would just skirt some thunderstorms located to the west. It looked like we would be above the thunderstorms once center let us climb to FL240...or so I thought.

Right after a radio switch, center directed another climb via an unfamiliar fix before we could continue along our flight plan. I copied it down and started scrambling through my charts to find the fix. Unfortunately, the area north of Buckley is where the High Northwest and Southwest charts meet. As I searched for the fix on the charts, the controller recommended a northwesterly vector toward the fix. At this point, we entered the goo.

My salty pilot expressed his concern when the windscreen frosted over with ice and snow. He had pimped me earlier to use the radar to look for thunder cells, but I was late in tuning it up. Now, it was a little too late.

I was still counting on being on top at FL240, but as we were passing through FL230, it was obvious this was not going to happen. I glanced over at the right wing's leading edge, drop tank, and jammer pod, which were coated with the thickest layer of rime ice I had ever seen.

The pilot told me to ask for FL350. I got the request out, only to hear a lot of static as a reply. (The Prowler possesses notoriously weak UHF radios, which are sometimes prone to static buildup in clouds. We did manage to pick up a garbled clearance to FL260 and to expect FL350. The radios had become so bad that the only way to respond was with the ident feature on the transponder. Frustrated with UHF No. 1, I switched to UHF No. 2. No joy.

With the icing getting worse by the minute, we needed to climb quickly. This was becoming a very uncomfortable situation because of the high traffic volume in the nearby Denver air space. We were NORDO, IMC, and in heavy icing conditions. The mission commander in the back seat chimed in at the right moment, "This is an emergency, squawk Seventy-seven hundred, and climb!"

After an expeditious climb, we managed to find clear air and leveled off at FL310. After five minutes, I regained radio contact with center and explained to them what had happened. We returned to Whidbey Island uneventfully.

All the way home, I thought about our experience. The first lesson learned from this hop was that I should not have rushed. I should have studied the charts in more detail before walking. This would have alleviated some of my struggles in the cockpit.

The second lesson was that I should have prioritized better, remembering our early lessons from the training command to aviate, navigate, communicate. Flying into imbedded thunderstorms and icing was not a good way to aviate or navigate. I should have told center I didn't know the fix location, and I should have been more concerned about staying out of the clouds.

The final lesson was that I should not have hesitated to squawk emergency, when called for. I should not have been struggling on the radio when it was more important to get out of the icing ASAP. It's better to declare an emergency and apologize for it later than to risk losing lives or a jet. 

Lt. Ha flies with VAQ-134.

The radios had become so bad that the only way to respond was with the ident feature on the transponder.

Bad-Weather



by Cdr. Chris Chamberlain

Ferry

I had to ferry an F-5 from Oceana to points west. It was an ugly morning in Virginia Beach. Bands of showers were moving through the area, and more bad weather loomed in the west. Both Oceana and Norfolk were briefed to be workable during my departure window, though, and my first destination was forecast VFR, so during a break in the rain, I decided to launch.

At about 3,000 feet, I went into the goos and headed southeast on the Kitty Hawk Departure. I was soon cleared direct to the Raleigh-Durham VORTAC, and turned west

as I continued my climb. Climbing through 14,000 feet, the ECS turbine under the cockpit floor failed.

I felt a massive thump, accompanied by a strong vibration that shook the instrument panel and made it hard to read the gauges. At first, I thought an engine had failed, but indications seemed normal. Pulling each throttle back to idle did not ease the vibrations.

As I manipulated the throttles, I realized the cockpit temperature had gone full hot, and the cockpit was filling with an oily, white smoke. I selected full-cold, with no effect.

The temperature in the cockpit quickly got uncomfortable, so I reached up to close the air vents. I'll admit that I was not wearing my gloves, and the metal valves were already so hot that I burned my fingertips. Fortunately, my gloves were in my G-suit pocket, so I quickly donned them and closed the vents.

I received clearance to level off at 16,000 feet, secured the ECS (which stopped the vibrations but left a cloud of hazy smoke in the cockpit), and began to negotiate a return to Virginia Beach.

At this point, I began making mistakes. I had been climbing through dense clouds, with my visor up, and (too late) I realized that the smoke and particulate matter still seeping through the vent were getting in my eyes, which began to water and sting. I lowered my visor, then realized (again, too late) that I hadn't selected 100-percent oxygen instead of the diluter-demand setting we normally fly in and which mixes ambient air (in this case, smoke) with oxygen from the aircraft supply.

I was coughing as I learned that NAS Norfolk now had a half-mile visibility in heavy rain. Oceana was slightly better, with a measured ceiling at 400 feet and one mile in rain as a band of showers moved overhead. The wind was gusting to 30 knots, about 30 degrees off runway heading.

I paused to consider my options, but the temperature was becoming increasingly uncomfortable, even with the ECS commanded "off." I needed to get on deck, so I asked for vectors to Oceana.

Norfolk Approach initially gave me a heading to intercept the localizer, but when I told them I didn't have the right equipment onboard, they cleared me to intercept the TACAN final.

After several seconds of flailing through my approach plate—no autopilot to help out in the F-5—I talked them into issuing me vectors to the PAR final to Runway 5. I was heavy,

still full of gas, with a high approach speed and resulting high rate-of-descent to remain on the glide slope. By this time, the cockpit temperature was unbearably hot, my vision was blurring, and I was growing more and more frustrated.

However, the first three words on any emergency checklist should be "Fly the airplane." With all the other problems I was having, ultimately, it was my incredibly bad PAR that almost killed me. While I was absorbed with small corrections to my heading, I inadvertently picked up a large rate-of-descent at about the half-mile point on the approach. My PAR controller's urgent call of "Now going well below glide slope!" startled me.

I looked outside in time to see the tops of pine trees emerge from the misty undercast, perhaps a hundred feet below me. Heart racing, I clobbered the power to level off, powering my way over the treetops. For a split second, I seriously considered jettisoning the canopy, just to clear the crushing heat, the smoke, and the soot in my eyes. Fortunately, I looked out in front of the airplane, picked up the runway lights, and landed.

Lessons learned? First, I was eager to get out of rainy Virginia Beach and back to the sunny high desert, but you always have to be ready to return to your departure airport, whatever the weather. Also, my gloves, mask and visor are truly pieces of safety equipment, and without their protection from the superheated air coming out of the air-conditioning vents, I might not have been able to land the aircraft.

Next, I never declared an emergency, because I was being immediately cleared for everything I needed. Declaring an emergency, though, is an important part of building the picture for ATC, and in my case, would have eliminated several minutes of negotiations about an approach clearance into Oceana. Most importantly, when the operational (or material) situation deteriorates, it becomes even more critical to concentrate on flying the airplane. A moment's inattention can be lethal, particularly in a single-seat aircraft. 

Cdr. Chamberlain is the CO of VFC-13.

POP-UPS

Dry-Suit Season: Are You Ready?

The entire dry-suit ensemble consists of several sub-assemblies that should be worn to provide cold-weather and cold-water protection. Depending on the area of operation, omitting items could lead to serious injury or death. Know how to wear your dry suit correctly, as per NA13-1-6.7 and NATOPS. The four basic components of the dry-suit are outlined below:

Underclothing. The CWU-43/P and CWU-44/P aramid (Nomex) cold-weather undergarments are the first level of temperature protection and must be worn in combination with the assembly when required. In some cases (below 50 degrees F), you should wear two sets of this underwear.

Inner Liner. Either the CWU-23/P or CWU-72/P liners must be worn over the undergarments and under the coverall. The 23/P (100 percent cotton and an outer layer of polypropylene netting) or the 72/P (100 percent olefin micro-fiber) is the next phase of temperature protection.

Anti-Exposure Coverall. A one-piece garment with rubber neck and wrist seals and sized socks attached. This lightweight coverall prevents water from entering the assembly while allowing body moisture to escape.

Flyers Coverall (flight suit). The first line of defense for flame retardency, but it is not often worn. Without a flight suit, the undergarments can provide some flame protection, but if the anti-exposure coverall is burned away, there will be no protection from cold-water immersion.

Dry-suit season is here. Brush up on how to wear and maintain the ensemble. Ill-fitted coveralls or those beyond normal inspection intervals also increase your risk of injury. If you have any questions, check with your PRs.

Tomcat Ergonomics

A recent physiological hazard report from COMFITWINGLANT, based on clinical and historical observations, cited that a significant number of F-14 aircrew (about 25 to 30) have experienced mild to severe neck and lower-back pain. Though the reported problems are not limited to pilots, most pilots said a large reason for their discomfort was because of poor body positioning while looking through the HUD during high-G maneuvering.

The hazrep also cited poor ejection-seat ergonomics, such as backpads providing no lumbar support as a daily problem for aircrew. Neck and back problems are reportedly exacerbated by most pilots flying with their seat in the full-up position to provide a better view over the canopy rail, but then having to lean or hunch over to see through the HUD tunnel. This body position adds stress to the cervical and lumbar areas of the spine, especially during maneuvering.

Generally, the aviator cited as most susceptible to these problems had 1,000 hours or more in aircraft type, and the degree of debilitation ranged from lower-back and neck pain to herniated-disc disease (which requires surgery).

COMFITWINGLANT's suggestions to correct this problem included increasing ergonomic support and improving future HUD FOV design so pilots will no longer have to look directly through the center of the HUD while maneuvering.

Edited by LCdr. Mark Enderson. Contributors can contact him at (757) 444-3520 Ext. 7245 (DSN 564). E-mail address: menderson@safetycenter.navy.mil

Cold-Water Survival

without anti-exposure suit with anti-exposure suit



Lethal 100 percent expectancy of death
Marginal 50 percent expectancy of unconsciousness, which will probably result in drowning
Safe Zone
Attack Hazard

Great Danger
Marginal
Safe Zone

We had planned for a morning departure from Fallon. I was sitting ACO, with my CO as CICO, and a pilot in the RO seat for a non-tactical transit flight home. We launched at 1100, and the pilot made a nice climbing turn to altitude. About two minutes from takeoff, things changed.

It started innocently enough with the failure of one of our multi-function display units. But they had been doing this on a regular basis, so I didn't think too much of it. We didn't need it for this hop. However, 30 seconds later when my scope flickered, it got my attention.

I automatically looked forward at the other scopes in CIC. The light in UHF-3 was out. This unit is one of two radios available with emergency electrical power. E-2 radios fail every once in a while, but they just don't die like that. I tried telling the skipper, but he didn't respond to my calls.

Figuring I wasn't talking loud enough to trigger my interphone amp, I spoke loudly, to no effect. Then, I started shouting but soon realized I couldn't hear myself because the ICS was dead. I tried emergency ICS—nothing. The pilots didn't respond, either.

By now, every light, switch and display in the tube was switching off. I tried to unlock my harness and grab the CO, but he had already seen the problem. The RO looked into the forward equipment compartment for any sign of fire but couldn't see anything. I vigorously pointed down with both hands, the universal signal for shutting down the weapons system in the back. The three of us in the back secured power.

We still had no communication with the pilots. I knew there was no way this problem could not also be affecting cockpit systems. As if to confirm that thought, I felt the plane turn back toward the field. Soon, all electrical power in the plane dropped, and 15 seconds later, I heard the familiar whine of the emergency electrical generator. We confirmed the pilots' intention to land immediately. They declared an emergency and landed.

We would find out later that an access-panel retaining pin on a chain inside the star-board nacelle had backed out of its fitting and



was dangling above the generator, shorting two terminals. Although there was no fire, the area around the bolt was severely scorched.

We discuss emergencies in every brief, how we should handle them and each person's responsibilities. One of the hardest to plan for is the loss of internal communications. Yet, even then, each crew member should know what he is supposed to do. We did, as seen from the pilots' returning to the field without being able to tell us what was wrong. We knew there was a problem, but we didn't let it rule us, and we each did our part. 

Lt. Kurdian flies with VAW-113.

On an unusually warm day in February, we were scheduled for a form flight, followed by VFR nav, touch-and-goes, then RTB. The form flight went well, and as my student called for proceed-to-route, he requested the control change and even followed up with a heading to proceed to our break-off point. That was about the last thing I heard from him, except for an intermittent “Yes, sir,” whenever I asked him if he saw key identification marks on the ground and if they corresponded to the map.

We passed our first check point and after a minute, I asked if he knew where we were. I anticipated his negative response, so I snapped the helo into a 60-degree bank, turned back toward the check point, slowed down, and climbed an additional hundred feet without telling him my intentions. I began to point out intermediate landmarks and continued describing techniques for navigating. Once we reached check point A, I circled overhead so my student could see it and began to point out areas of interest along our track.

By check point C, it became quiet in the cockpit, a sure sign of “Boy, am I lost.” I kept asking him if he saw other distinct identification marks on the map and the ground and received the customary “Yes, sir.” I noticed his pen (which can be used as a technique to monitor our track) was about four clicks off, so I pointed out where his pen should be and what we should be seeing next. Again, I heard, “Yes, sir.”

After not receiving any other replies by check point D, I gave him the controls and began a more detailed demonstration of nav techniques while directing us back to check point A.

We continued along the route, and when we reached check point D, I asked if he understood what his responsibilities as navigator were. He replied, “Yes, sir.”

We exchanged controls, and I immediately rolled into a 60-degree bank, slowing down from 100 to 60 KIAS



by Lt. Larry Paul

so he could regain his thoughts, determine our positions on the map, and begin navigating. Things were still relatively quiet during the next four checkpoints. Any question I asked elicited the same reply. I was basically on autopilot, hoping he would start interjecting nav cues. Shortly after check point H, he said, "Sir, I don't feel so well." In what seemed like minutes but was only matter of seconds, I determined my options.

Being that we sit shoulder-to-shoulder, in a poorly ventilated cockpit, with a broken air conditioner, and the greenhouse effect producing what felt like 110 degrees, I determined that if I watched him spew, I would only be a wafer-thin mint away. My choices were: Remain straight-and-level so when he felt better we could continue the route. Or, continue along the

route and find a suitable field and land before he let it rip. Or, wrap it up and land near the check point we had just passed, realizing

that any rapid change in attitude might set him off.

We were flying over a heavily wooded area and the next area I thought to be suitable for landing was about eight long miles away. Also, we were straight and level and had not exceeded 30 degrees of turn or 20 AOB for 10 minutes.

Seconds after his statement he started to arch his back and my answer came quickly. If I gave a courtesy puke, then who would be flying? Turning the helo around, I told

Dash 2 of our position and intentions and said that we would reassess the remainder of the flight as soon as things settled down.

While watching my student quickly remove his glove and fill it until it overflowed into his hands, lap and seat, I somehow managed to refrain from joining in and began to wonder how I could have prevented this from happen-

Shortly after check point H, he said, "Sir, I don't feel so well."

ing. Seconds that seemed like minutes later, we were on deck in a field. After 15 minutes on deck, he cleaned himself and the cockpit as best he could. I asked a few times if he wanted to continue, hoping he would call it a day, but he replied, "Yes, sir. It must have been the food at the squadron, but I feel fine now."

As our flight suits and the aircraft reeked something awful, conditions were not favorable for us to continue. Nevertheless, since he said he wanted to continue, I agreed. We continued, but with the aromatic reminder of the previous event, I was having trouble concentrating in the OLF pattern.

I didn't realize it then, but I know now that our crew coordination diminished at check point A. What could we have done to prevent this? I should have taken his lack of conversation as a clue and questioned not only if he knew where he was, but also if he felt OK. As the instructor, I should have put that aside, realized the learning curve was going down, and terminated the instructional portion of the flight, then told Dash 2 to join up and RTBed. Also, had my student taken upon himself to tell me he was feeling queasy upon initial onset, I wouldn't have flown as aggressively and limited the AOB. 

Lt. Paul flies with HT-18.

I heard the student ECMO's
voice in lead's jet call,
"You've got white smoke
coming out of the left engine."



I Wasn't Planning
on an Emergency
Today!

by Lt. Dave Souza

As a student in the Prowler FRS, I was starting a day that couldn't have been any better. I was scheduled to fly an ungraded, day-form, warm-up hop, to be followed by a syllabus night-form event with the same crews. Plus, because we were in El Centro, only the pilot and ECMO 1 were required for each flight.

The lead briefed the section and some training objectives he expected out of me and the student ECMO flying with him. Then we broke up into individual crew briefs, where my instructor reassured me about this hop's easy requirement and told me not to put any undue pressure on myself. I rogered and pressed on with a standard NATOPS brief, followed by the questions of the day. The EP of the day was single-engine failure. I read through the PCL, and we talked about a few what-ifs, but I didn't pay much attention to their possibility.

We launched and began the long trek around all the restricted areas to get up to the Turtle MOA. I settled into perfecting my form work.

When we got to the MOA, my lead started right in on break-up and rendezvous. After a couple to the right, he made the third one to the left. I worked hard on the ABCs, which are hard in the Prowler when doing a port rendezvous. I was on altitude, driving out to bearing line with—*whoa!*—25 knots of excess airspeed. I pulled the throttles to idle and started slowing down. My instructor ECMO saw what I had been doing and started calling out airspeeds.

"Three twenty, three fifteen, three ten..." I was acute at this point, so I decided to get about 10 knots slower than lead (who was at 300) and work the angles until I was on bearing line. My instructor stopped calling airspeeds when he saw it was back in my scan. I brought the power back up and started to work altitude and bearing. A quick peek at airspeed showed me at 280. I increased power to mil to get my airspeed back, and my instructor told me the left generator had dropped off-line. I acknowledged and said we'd get it after the join-up. He concurred and continued to monitor my join-up.

I checked airspeed again, and it showed 275. I thought, "Man, this thing is a pig." I made sure my speed brakes were in and gear and flaps were up. We were now below 270 and definitely not getting any closer to lead.

My instructor said, "Hey, the left motor's not running." We called lead and told him of the problem and asked him to join on us. I triple-checked my instruments and rolled out on a heading toward home. Lead started to look us over as we broke out the PCL.

Just then, I heard the student ECMO's voice in lead's jet call, "You've got white smoke coming out of the left engine." As I felt the pucker factor increase, I looked down and realized the left engine's fuel master-switch was still on. I turned it off, securing fuel to the engine, and asked if they still could see the smoke. They couldn't, and I breathed a small sigh of relief.

We went through the PCL, determined the problem wasn't mechanical, and decided to air start the left engine. It started and indicated normal. We then told Yuma Approach about our problem. For some reason, my instructor decided not to declare an emergency, and this being my eighth flight in the Prowler, I wasn't going to question him. Furthermore, the engine was running again. They gave us direct El Centro and told us to switch LA Center for priority handling. We let LA know what our situation was.

We were about 75 miles North East of the field and could nearly see it. I detached lead to RTB as singles, and we started talking about our game plan.

As I started to bring up the idea of landing flaps 20, in case we lost the engine again, my instructor said in a somber tone, "I wasn't planning on an emergency today." A million things went through my mind, but confidence wasn't one of them.

"I have the field in sight," I said. "Cancel IFR, and we'll get set up for a straight-in."

"No, I want to keep talking to center to get priority," he responded.

The thought passed through my mind that center didn't have radar coverage below 4,000 feet, and we would have to cancel anyway,



At 2 miles, passing 1,500 feet, the left motor quit again.

Ted Carlson

coming into El Centro. I didn't say anything, probably because of "student-itis."

We were still heavy on gas, so I notified my instructor that I was turning on the dumps. Nothing happened. After trouble shooting as much as we could, we determined that we would not be below max trap upon return and would have to min-rate our touchdown.

I switched my concentration back to flying when I realized we were about 25 miles out and still at 14,000

feet. After some haggling with center, we found ourselves starting our descent at about 15 miles. I didn't want to pull the left motor to idle for fear that it might flame out on us again. I pulled it to about 65 percent and put out the boards.

At the initial, we were still at 6,000 feet, so I had to make a 360 to get down. I rolled out on centerline at 4 miles and still at 3,000 feet—undesirable, but workable if I pulled the motors to idle.

At 2 miles, passing 1,500 feet, the left motor quit again. I mashed the air-start button and concentrated on working it to on-speed plus 5 knots when I saw the rpm coming back up. When we were at a mile, another Prowler pilot at the 45 asked if he could full-stop in front of us. My instructor said he could. I thought it was a little close, but my bag was full, so I didn't say anything.

At touchdown, I noticed we were going to catch the plane in front of us unless I got on the brakes. My instructor told them to increase their rollout. I got the plane slowed to a taxi about a thousand feet behind them.

The taxi back was quiet until we were pulling back into the line. As soon as the plane captain gave me the hold-brakes signal, the left motor quit for the third time. The ground crew gave us dirty looks.

After talking to maintenance and all other interested aircrews, we finally sat down to debrief. My instructor said he hadn't even realized that the motor had died again on final and that he should not have let the other Prowler land in front of us. He gave me my grade sheet and told me I did a great job handling an emergency on only my eighth Prowler flight.

Looking back, I should have been more thorough in my debrief of our conduct as a crew. The reason neither of us initially noticed the left motor had died is that I had already been using left rudder to make the port rendezvous. The additional yaw caused by losing a motor did not register in our inner ears as we were padlocked on rendezvous essentials. When he told me he wanted to keep talking to center for as long as possible, I should have told him that was stupid.

At the time, I was unsure who was actually responsible for the safety of the aircraft operations—the student pilot or instructor ECMO. I had done countless emergency procedure simulators as a stashed pilot and was comfortable handling the emergency. But I let student-itis and his apparent inability to grasp our unfortunate circumstances impede my own decision-making. I also should not have let myself get wrapped up in trying to trouble shoot the fuel dump and get driven in so close that I had to do the 360 turn-of-shame with a questionable engine.

When you look at all the little detractors leading up to the landing, it tends to play like a mishap report with myriad causal factors leading up to two aircraft hitting the runway. I am glad maintenance discovered that the left motor's fuel control was misrigged to register shutoff if the throttle stayed at idle too long. I am also glad that the EP of the day wasn't spin recovery. I would have hated to have that one come up instead. 

Lt. Souza flies with VAQ-131.



CORNER

by LCdr. Doug Blackburn

A TALE OF AN ORM CONVERT

Two FRS instructors, no students, a night proficiency hop, and no grade books to complete; it doesn't get any better. We chuckled when the duty officer handed us an ORM preflight worksheet. The FRS was one of the first squadrons to use worksheets to assign a point value to risks that we might encounter on the flight. The sum of the points indicated the forecast level of risk for the flight. In our squadron, a typical day FAM flight with a nugget FRP scored around 15 points, night FAM was around 18, and on the other end, night DLQs scored around 25.

Like most of our peers, we had more than a little disdain for the new ORM program. It seemed a little touchy-feely—and let's face it—it smelled a lot like that other three-letter program. Hey, good pilots like us brief their flight, fly their brief, look hard at the aircraft during preflight, and don't do stupid stuff. Besides, how risky could a 1.5-hour instructor-proficiency hop be? We had more than 4,000 hours between us pilots, and another 2,000 hours in the back seat. We were in our own back yard, and all we were doing was basic FAM, a little SAR, and maybe an approach or two.

If there had not been another aircrewman in the brief (with students), we might have blown off the worksheet.

"Let's see," I began, "Weather: typical winter SOCAL stuff, kind of dark and murky. We'll take a couple points there.

"Crew day: Well, I came in a little early today, and so did you... add a couple more points.

"Currency: I'm not night current...couple more.

"Aircraft: AFCS (flight stabilization equipment) on this aircraft is notoriously quirky...couple more.

"Personal factors: I'm in escrow and hopefully moving, and, oh yes, you are expecting your first child in the next ten days or so...couple more."

And on it went. Because of circumstances, we took an extra point or two on practically every category, and scored a 35.

The bonus for such a high score was an interview with ops or safety, but they had gone home. Naturally, the only adult supervision left in the squadron was the skipper. We assured the boss that our ORM total was an absolute worst-case scenario, that we all felt great and were ready to fly, and promised that we would fly a most safe and conservative hop. He believed us, and away we went.

We kept our promise, and our flight was uneventful.

Would things have been different if we had blown off the ORM sheet? It's really not the point. On any other night we could have scored a fraction of our total. On that night we were fooled. We were confident that we couldn't have less risk and still go flying, but the numbers showed otherwise. Our ORM-point total (and the trip to the front office) alerted us to this fact, and we approached the event with a different mindset, which made us more careful.

We all naturally ramp up when we do something different or clearly riskier than the daily routine. But the daily routine may have some inherent risk that can go unnoticed until it is too late. A good ORM program will combat this situation by alerting crews to hidden risks and changing the way they approach an otherwise mundane flight.

LCdr. Blackburn flies with HSL-45.

ORM Corner is a bi-monthly department.

Please send your questions, comments or recommendations to Mr. John Mahoney, the ORM coordinator at the Naval Safety Center, or to Capt. Denis M. Faherty, Director, Operational Risk Management. Mr. Mahoney's address is: Code 70, Naval Safety Center, 375 A St., Norfolk, VA 23511-4399, or call (757) 444-3520, ext. 7243(DSN 564).

E-mail: jmahoney@safetycenter.navy.mil

Write Capt. Faherty at OPNAV Code N-09K, 2000 Navy Pentagon, Rm 5E-816, Washington, D.C. 20350-2000, or call (703) 614-8430 (DSN 224).

E-mail: faherty.denis@hq.navy.mil

“Flying Inverted

by LCdr. Karl Klopp

Is No Way To Go Through Life, Son”

I was a new ensign on my fifth flight in the Navy. It was an introduction to aerobatics, spins, and stalls in the nimble T-34C during the basic stage of the NFO pipeline. During these flights, instructors took pride in how they could make their students sick, but the real purpose was to give you a feel for maneuvers and how to recognize a spin. As we walked to the plane, I didn't realize how soon I'd be called upon to put spin recognition and recovery procedures into practice for real.

We flew VFR to the operating area along the southern Alabama coast and completed the maneuvers, stalls and spins. During the spins, I watched the ground rotate around the nose and counted the prescribed number of rotations before each recovery. I also saw the AOA gauge go off the top as we entered each spin and watched the altimeter unwind as advertised. It all seemed so controlled, almost boring

after the third spin. Everything went exactly as expected.

I wasn't the least bit air sick, and the instructor asked if there was anything else I'd like to see. After a couple of barrel rolls and other maneuvers, we still had some time and fuel, and again, the instructor asked for request. Not wanting to push my luck and risk making a mistake on an otherwise great flight, I replied, “No thanks, unless there's something you want to try.” Big mistake.

The instructor piped up, “Hey, I've always wanted to try flying inverted.”

After a quick mental scan of prohibited maneuvers, of which inverted flight was not one (inverted spin yes, but not inverted flight), I enthusiastically agreed. To save time, we climbed just high enough to enter the bottom of the maneuvering block 5,000 feet AGL. During the climb, I double-checked that all loose gear was properly stowed and my seatbelt was tight.

The instructor started the maneuver with, “Are you ready?”

“Yes, sir.”

“Here we go.”

The trainer rolled inverted, but something was not right. I half-expected we would roll back up right and try again, but instead, we instantly pulled several G's. The horizon was instantly replaced with a distinct white strip of slowly rotating beach. The rotation was similar to a spin, but without the rapid oscillations. What really got my attention was how fast the altimeter was unwinding.

Students had to call out each 1,000 feet of altitude when below 5,000 feet AGL. The hundreds needle was a blur. Believing we had entered a spin, I assumed my faithful instructor was putting in the necessary corrections, and we would recover shortly. Somewhere between "four thousand, three thousand..." I started to doubt my instructor's ability to recover from the spin. I was vaguely aware that we were going very fast.

Rapidly running out of altitude, and with no sign of recovery, it was time to start bail-out procedures. I did not really believe we could bail out in time, but I had to try. As if to reinforce my impression that all was not going well, the wheels warning sounded and the master, caution and gear-handle lights started flashing.

Just as I put my hand on the emergency canopy-open handle and opened my mouth to announce, "Bail out!" three times, the rotation stopped and I felt positive G's being applied to the aircraft. We pulled out with just over 1,000 feet to go. At first, I thought I had overreacted until the pilot uttered his first words, "Man! That was close!"

"Yeah? What happened?" Military courtesy briefly forgotten.

"I grayed out. Are you ok?"

"Yes, sir."

"I've never been so scared."

After regaining some altitude and his composure, the pilot figured out what had happened.

"I screwed up the start, and tried to save it by pulling through, only I blacked out in the middle. Good thing you were calling the altitudes. That was the only thing that kept me alert enough to pull us out."

"Sir, I thought we were in a spin."

"Oh, really? What was our angle of attack?"

"Uhh-h, I was just amazed at how fast the altimeter was unwinding, and then the alarms started going off."

"Oh, yeah, we exceeded two hundred and seventy knots, and I pulled the throttle back to avoid an overspeed. Well, we are OK. Wow, let's just head back. We don't need to tell anyone about this."

"No," I agreed. No moral dilemma, I thought. We didn't do anything wrong. We started within altitude limits, and the maneuver was not specifically prohibited. Everything appeared legal. The instructor just learned a valuable lesson on his abilities, and I learned a lot about angle of attack and crew coordination.

I do not remember anything specific about the debrief other than it was brief. He appeared relieved to be back unscathed, and I was thinking about my next hop. As I recall, the telltale on the G-meter did not exceed limits, so there was no need to report it to maintenance. If there was one on the air-speed indicator, I'm not aware of it, but I doubt that we had oversped the airframe. Since I did not write the MAFs, I just figured it was the pilot's responsibility to report it if we had. It never crossed my mind to report the GLOC to anyone. I figured it was a physical limitation to be expected by tall, lanky P-3 pilots, and that he would be more careful about inadvertently pulling G's in the future.

Having the benefit of experience, I can now say that we should have reported the incident. The ease with which the pilot was able to screw up something presumably simple like flying upside down, and how quickly we got into trouble in his recovery would be valuable lessons to any T-34C pilot. Pilots who suffer GLOC are a hazard to themselves and everyone else if they don't receive the proper training. As a student I should have known to report the incident, and not worry about the consequences of ratting on an instructor.



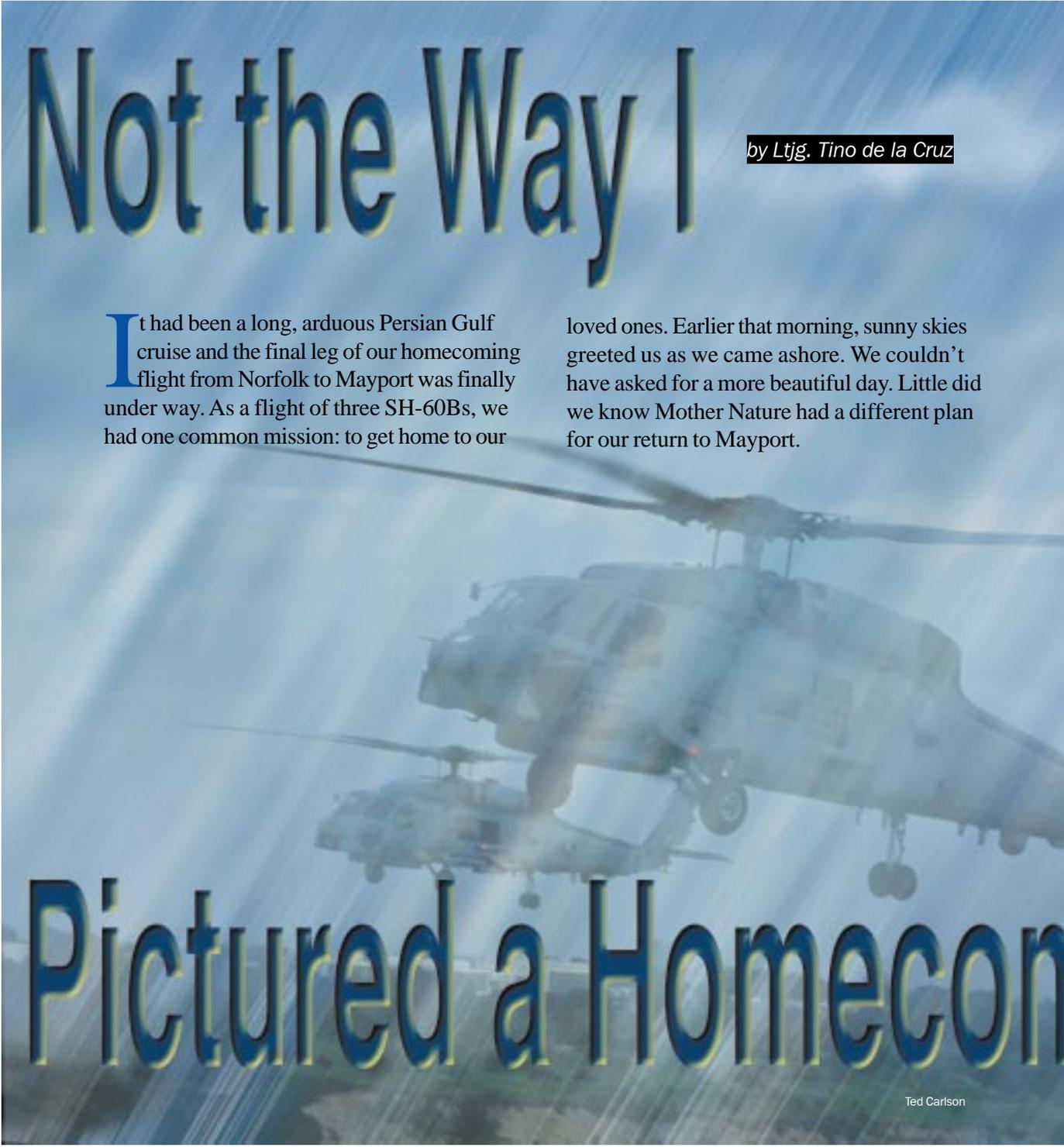
LCdr. Klopp flies with VAW-124.

Not the Way I

by Ltjg. Tino de la Cruz

It had been a long, arduous Persian Gulf cruise and the final leg of our homecoming flight from Norfolk to Mayport was finally under way. As a flight of three SH-60Bs, we had one common mission: to get home to our

loved ones. Earlier that morning, sunny skies greeted us as we came ashore. We couldn't have asked for a more beautiful day. Little did we know Mother Nature had a different plan for our return to Mayport.



Pictured a Homecom

Ted Carlson

Before leaving Norfolk, we briefed a homecoming formation flyby. The trip would begin at Norfolk with a flyover of USS *Nicholas* and USS *Thorn*, the two ships in which we had been embarked, just as they were mooring pier-side.

After the flyby, the formation would break up, head south on IFR flight plans, then cancel IFR before reaching Mayport. Once there, we would rejoin the formation and fly in together

just as we had left six months prior, in Proud-Warrior fashion.

The flight went as planned, even though the weather deteriorated with heavy showers. We expected the same at Mayport, which was a big problem, because we'd not flown in bad weather since deploying to the Gulf.

We all arrived as planned, cancelled IFR just north of Mayport and started to rejoin. The weather began closing in as we called for the



formation to rendezvous. We formed up about 15 miles north of the field and continued on our final leg.

The flyby quickly became questionable. Conditions deteriorated rapidly as the ceiling dropped and we lost sight of the field. Just then, Mayport Tower reported the field IFR and began sequencing special VFR entries. Moments later, Dash 2 had an automatic flight-control system (AFCS) malfunction because water was leaking into it. This formation flyby was not going to happen. Dash 2 immediately broke off and picked up a GCA. The conditions worsened, and we soon began to lose sight of Dash 3; they lost us, too.

As briefed, we called for inadvertent IMC procedures and broke off. Dash 3 cleared the area while we tried a special VFR entry. Our attempt was unsuccessful. Tower lost sight of our aircraft and arranged

for us to be picked up for a GCA. While we were getting set up, Dash 2 called that they'd wait for us on the ground. They were safe on deck and parked on the parallel taxiway. I guessed since we could not fly in form, we could at least taxi and park in formation.

Now it was our turn with GCA; the weather was getting worse. I was at the controls and all I could think about was how long it had been since I'd flown an actual

instrument approach. I was a little nervous. I knew all I had to do was stick to the basics and fly the instruments, just like I'd done so many times before on much clearer days. My ace in the hole was my copilot, a seasoned aviator with more than 4,000 hours, backing me up and looking out for the field. Our crewman, a crusty one himself, was doing the same. Many times throughout the approach, I couldn't help wondering why wasn't my copilot flying this approach. How could he be so calm? The closer we got to decision height, the more I wanted my copilot to tell me he had the runway in sight. It seemed like an eternity without a call, as I concentrated on my instrument scan.

"I have the runway," my copilot finally said, as we broke out somewhere around 400 feet.

"Yes!" I thought, as I transitioned to an outside scan. How quickly the anxiety turned into relief! We finally broke through and proceeded to our position behind the patiently waiting Dash 2.

"Good job, great approach," my copilot said as he turned with a relieved smile. Dash 3 soon followed and parked on the taxiway just behind us. We could see the families waiting by the hangar through the pouring rain. It wasn't exactly like we had pictured it, but we were home.

Receiving clearance to taxi, we moved forward in the current order and turned simultaneously onto three reserved spots on the front line. After shutdown, we got out of our aircraft and hugged our families. Mission accomplished.

I will never forget that day, not only because it was the homecoming of my first LAMPS cruise but because of what I had learned. You have to be prepared for anything at any time. The weather came in quickly on us, and it was something we had not seen in quite some time. The key is to keep up with your training. No matter what you're doing, your training will get you through tough situations. We made it home that day, but it took the three of us coming together with all our training to turn a bad day into a day to celebrate. 🦅

Ltjg. de la Cruz flies with HSL-42.

Don't Rush Me!



by Lt. John E. Dougherty IV

I had just finished my first day of FRS carrier qualifications in the FA-18 Hornet. After the initial jitters of going back to the boat for the first time in a year, my day landings had smoothed out nicely. I was sure I could consistently fly the Hornet to safe “fair” passes. After a quick debrief and some chow, it was time to brief a new milestone in my naval flying career: the night carrier landing.

The brief was thorough, covering every aspect of this new adventure. I was very nervous but ready to perform. Being a squared-away class, we knew well in advance there would be no moon for our first night traps. (The typical scud layer at 1,000 feet off San Diego wasn't helping, either.)

Along with all the usual aspects of any CQ brief, the instructors emphasized to stick to the basics and not let the deck operators



Brian C. McLaughlin

rush us. The brief finally ended, and I was ready to discover what being a carrier aviator was really about.

To my surprise, when I walked to my jet, it was a lot darker than I would have imagined. My Hornet was spotted over the stern near the landing area, and the deck lighting was not doing much to help my preflight.

I went through my normal routine and hopped into the jet. After startup, my heart-beat settled as I watched my buddies cross the

ramp and trap. Typical of any CQ, I had about 45 minutes in the cockpit to get squared away before it would be my turn to launch. It was weird, but I almost felt relaxed as I went over my procedures again. I reviewed everything including configurations, weight and radalt. The yellowshirt finally turned on his wands, and it was show time.

The relaxed feeling of the past 45 minutes was suddenly gone. My heart raced as I pulled forward and followed the yellow wands as they taxied me forward toward the catapults. I wanted to take things slowly so that I felt on top of things, but it became quickly apparent that the deck operators had other things to worry about than just my jet.

Because of the spot I was in, I had to taxi through the landing area quickly, and the yellowshirts let me know I wasn't going fast enough by the body motions every carrier aviator has seen. I was only taxiing, yet I was already feeling rushed, operating on brain-stem power, exclusively.

I proceeded directly to cat 2 and was trying to accomplish all the necessary tasks before crossing the JBD. Flaps were at one-half, trim set, radalt at 40 feet, and everything looking good. The weight-board operator was to the side of my jet showing me a gross weight of 34,000 pounds, which I knew was considerably less than I needed. Before walking for my flight I had determined that I would need a 38,000-pound shot, based on my aircraft weight and fuel load.

I raced to find my flashlight while trying to follow the taxi director, who already seemed to think I must be the slowest pilot in naval aviation. I finally got the flashlight, gave the weight-board operator the increase signal, then directed my attention back to the taxi director. Once again, I felt as though I must be holding up the entire carrier, because it was taking me forever to get into the shuttle.

I looked back at the weight board and gave another increase signal. I thought, incorrectly, that two increases of the weight board would give me the correct gross weight. For some reason, on this black night, my brain thought that each signal would give me an

increment of 2,000 pounds, not the actual 1,000 pounds.

Thinking I had the correct weight board and feeling really rushed to get off the deck, I gave the OK signal to the weight-board operator. I proceeded into the shuttle.

As I followed the director's signals, I started to get a funny feeling about the whole weight-board issue. I thought I had the correct weight set, but I was not 100-percent sure.

I called the Boss. "Tower, confirm cat two, thirty-eight thousand pounds." There was no answer. I tried again, "Tower, Three Oh One, confirm thirty-eight thousand pounds on cat two."

Immediately after my second call, the cat officer gave me the run-up signal. In about one

millisecond, my brain had to come to a decision; do I launch or suspend?

I thought I had rogered the correct weight board, and was pretty sure the operator had moved it up on my signals. With all of my 15 cat shots, I also figured there had to be some slop in the settings. If it was off a thousand pounds, it really

shouldn't make a big difference. I also knew that at my current aircraft weight, I had the option of taking the shot at mil power or striking the burners as I went down the stroke.

With all of these calculations swirling in my brain in that millisecond, I ran up the power, went through my checks, and turned on my lights.

I immediately lit the burners and went down the track. The sensation of the shot seemed the same as during the day. I tried to scan all of my numbers, but I don't remember registering any of them. I only remember that it seemed as though there was a little settle as I left the bow, and I reached for the stick a lot

quicker than during the day. I put in back stick as the sight picture in my HUD seemed different from what I was used to and climbed away into the night.

The rest of my first night-trap experience was uneventful, and I was satisfied with my "fair" 4-wire. After my trap, our squadron rep called me on the radio and asked if there was some confusion with the weight board. I gave him a one-sentence version that I had rogered the correct weight since the stroke felt fine to me. He came back with some motherhood about not getting rushed and sent me to the cat to finish my initial night traps.

I entered the ready room after my flight with a smile on my face, relieved that I had crossed another hurdle in my career, only to find out how close I came to ending it. After talking to the LSOs, I found out that my entire aircraft had disappeared below the carrier deck on that first shot. I couldn't believe it, yet, in retrospect, based on all of the bad decisions I made, it seemed so logical. After a night's reflection, I took the lesson I had learned and qualified the next day.

The key lesson is to never let yourself get rushed on the flight deck, or in any realm of aviation. I was no slower than any of my classmates, yet I allowed perceived pressure to get to me and ultimately made a bad decision.

Another lesson is that you shouldn't place confidence in the decisions you make if they are based on assumptions. I assumed that if I had rogered a weight board within a thousand pounds, it would not make a great deal of difference. I found out later that I had actually launched with the weight board about 2,500 pounds less than desired, and it made a huge difference.

Finally, I learned that if something doesn't feel right, it probably isn't. Everything was telling me to call the tower to make sure I had the correct weight setting, which I did, but I didn't follow it all the way through when I received no reply. I made a bad decision on my first night shot and am lucky to talk about it today.



Lt. Dougherty flies with VFA-147.

The key lesson is to never let yourself get rushed on the flight deck, or in any realm of aviation.

A Lazy-8 Shutdown

by Lt. Geoff Hicks

We had spent three hours orbiting overhead just in case somebody had a hard time getting aboard and got low on fuel. Finally, it was our turn. We were tired and mentally drained, and I was in the hot seat. I couldn't wait until we trapped.

The approach was like any other night approach--on the gauges from the start. As I watched the DME click down, I knew it was almost time to start thinking about ball flying. The next thing I knew it was a little this and a little that and presto--right into the 3-wire. I had the throttles at full power at the end of the pullout.

A couple of seconds after I came to a full stop, I instinctively pulled back on the throttles. Suddenly, I had a sinking feeling. The throttles wouldn't come back, and the aircraft was shaking violently as if it were trying to spit the wire. I had my COTAC pull on his throttles as hard as he could, but they still didn't move. There is no boldface procedure for stuck throttles, and all I could think of was PLAT tape of an aircraft that dribbled off the angle after trapping.

In every emergency procedure for shutting down an engine, the first step is "Throttle-off." Step 2 is "Fire Pull Handle." I did both steps but I was baffled by not being able to get either throttle to come off. I was reluctant to use the Fire Pull Handle first because it was not the way I was trained. Eventually, I decided to go for it and pulled the No. 2 handle.

As the No. 2 engine wound down, my COTAC started the APU. Feeling good that the left engine wound down without incident, I pulled the No. 1 handle. As the No. 1 engine spooled down below 53 percent, the cockpit suddenly went silent. I looked outside the cockpit to try to see what the problem was, but something caught my attention. The 30 flight-deck crewmen who had surrounded my aircraft

to chock it were all waving their flashlights in a lazy figure eight. Fire! The problem was, I didn't know what was on fire. Was it one of the engines? The ECS compartment? I couldn't ask the Boss...we were NORDO! I couldn't talk to my crew...we had no ICS! I immediately yelled out for my crew to safe up their seats and get out.

After the APU came on line and picked up the electrical load, the Boss called, "Seven Oh Four, tower."

I answered, "Boss, we're getting out," and with that, I unplugged and exited the aircraft. As I bolted away from the jet, I was met by one of the directors, who said, "The fire's out. I need you to get back in so we can tow you clear of the landing area and park you. By the way, you left the APU running."

I stared at my aircraft and reluctantly climbed back into my seat. I was a little embarrassed that I had not secured the APU. I was even more embarrassed when I learned that the fire was a tailpipe fire in the No. 1 engine, not uncommon when shutting down the engine with the Fire Pull Handle. I have had only one other tailpipe fire in my S-3 career during an engine start, and an S-3 plane captain had been pointing directly at the affected engine signaling to me that I had a tailpipe fire.

This particular night, I did not have a plane captain in front of me. I had a sea of people all waving their wands. As it turned out, both ATS servos that control the auto throttles had failed during the arrested landing and kept the throttles from coming back to idle.

I always look forward to the moment when I'm safe in the wires after a night approach. That incident proved to me that the flight is not over until you are chocked and shut down. 

Lt. Hicks was with VS-29 at the time of this story. He now flies with VS-41.

STUCK STAB

by Ltjg. Gary Lazzaro

During another hazy, black night in the Northern Arabian Gulf, the only available light came from the many oil-refinery platforms around the area. We were in the second month of the sweltering desert heat, patrolling for rogue merchant vessels in support of UN maritime-interdiction operations. Two and a half hours into the night mission, the seas were empty of merchant traffic.

We decided to put the final hour of the hop toward maintaining our currency by practicing emergency low-visibility approaches (ELVAs) to homeplate. To minimize the risk, we raised our approach minimum-descent altitude of 50 feet to 200 feet. We briefed to stay well above safe single-engine airspeed since the ELVAs were for proficiency training.

Everything was proceeding normally as the ASTAC (homeplate air controller) guided us through the ELVA pattern for the first approach. He turned us onto final at four miles, and we could see the ship off the nose. The wind was slowly pushing us right of lineup, and I wondered if the ASTAC would notice the drift on his radar scope. He gave us a correction to arrest the wind drift, but we were still right of centerline as we approached the stern.

The HAC commented, "Looks like he'll need to give us a more aggressive cut next time for the winds."

We were wondering just how close we would be at the end of the ELVA. As our controller was calling, "On centerline, two hundred yards," the HAC asked, "How far are we off to the right?"

As I glanced toward the left window, I noticed the airspeed indicator slowing to 35 knots. I reported, "You're a little slow." The

HAC acknowledged my call, and I could immediately feel the nose pitch down a little. I assumed he was beginning his acceleration to wave off, but he wasn't.

Suddenly, I saw the master-caution warning light come on. As my eyes darted over to the master-caution panel, I saw the stabilator caution light and began to hear the associated aural-warning tone, which tell when the fly-by-wire stabilator doesn't program properly, usually because of air-speed. The stabilator was indeed incorrectly programming full down, thus causing us to accelerate and more importantly, descend..

The HAC quickly ran through the bold-face action items of the stabilator-failure emergency procedure. He froze the collective and adjusted the cyclic to stop the downward pitching movement, which was forcing us toward the water. I reached over and depressed the auto-control button, but it wouldn't reengage. When I heard the warning tone again, my hand instinctively went for the manual slew switch and moved the stabilator to zero degrees.

The HAC declared an emergency, and the ship maneuvered to give us the best winds for recovery. Because of the stabilator's fixed position, our approach for landing was a little nose-high but not uncomfortable, and we recovered without further incident.

After shutdown, the HAC and I debriefed the emergency. Our preoccupation with judging the proximity to the ship accounted for the breakdown in scan and slow airspeed. Our modified ELVA at the end of a long hop (200-foot hard deck and safe single-engine airspeed at all times) probably prevented a deadly mishap.

After we saw the stabilator caution light and heard the warning tone for this stabilator failure, our excellent crew coordination and operational risk management ensured our safe recovery from this emergency.



Ltjg. Lazzaro flies with HSL-43's Det 6.



The flight deck of a P-3 shows the close coordination of the two pilots and the flight engineer. (Ted Carlson)



The day before Desert Storm, laser-guided bombs are ready to be loaded on a VA-75 A-6E aboard the carrier *Kennedy*.



A Hummer leaves the *Theodore Roosevelt* during Desert Storm. After a somewhat rocky start in the 1960s, the E-2 has become one of the major players in the carrier air wing. During the Gulf War, as well as other combat situations, most recently in the Balkans, as well as at home during the hurricane floods of 1999, E-2 crews have controlled hordes of aircraft, sorting out congestion and helping others to accomplish their missions.



Unsung, but vital, the Naval Air Reserve's C-9 squadrons moved people and supplies in and out of theater during the buildup of Desert Shield. This VR-57 C-9B unloads in Saudi Arabia.

The post-Vietnam period has been a time of brush-fire wars, the largest of which have been the 1991 Gulf War and the recently concluded NATO foray into Yugoslavia's fragmented provinces. In between these conflicts, which included thousands of sorties by a wide variety of Navy and Marine Corps aircraft, there have been what can best be called after-shocks—the one- and two-day campaigns in the Gulf, or the 2-to-3-week mini-wars in Yugoslavia.

With the retirement of most of the conventionally-powered carriers, the *Nimitz*-class of super nukes has taken most of the responsibility for power projection all over the world. These imposing ships have included several changes in conformation, such as the deck bubble from which the cat officer can now launch aircraft.

Gone are the evocative gestures as the shooter twirls his fingers and touches the deck. He can now launch aircraft in any weather, comfortably protected from the elements. Only the LSO remains relatively unchanged, although his movements have changed dramatically, especially since

the early 1950s. Consoles and several sets of phone receivers keep him in contact with approaching aircraft and the Air Boss.

Sandwiched between the rotary- and fixed-wing communities is the VSTOL AV-8 Harrier. The AV-8A came directly from England and the enthusiasm of a few senior Marine aviators who saw great potential in the new technology. The small, noisy Harrier could provide at-the-front, up-close air support for those Marines on the ground who needed it most. But the Harrier is not the most forgiving aircraft. It demands a lot of attention as long as its engine is turning. (Indeed, in FY99, we lost seven AV-8Bs.)

There are other communities, less glamorous perhaps than the fire-breathing tactical jets launching from pitching carrier decks, but all just as vital in the overall mission and history we consider as the new century arrives.

Trainers, heavy props, unusual-mission aircraft and squadrons, and theater transports are a big part of naval aviation. The eight decades of naval air include major developments in the student-oriented types. Not just

the specifically designed trainer—the SNJ, the T-34, the T-2 or the T-45—but those aircraft which, even though they became obsolescent, still had an important role as advanced trainers to new generations of aviators. What served as the fleet fighter of one decade became the next step for aspiring student naval aviators approaching gold wings. Examples include the F-9 Cougar and F-11 Tiger, and more recently, the A-4/TA-4.

The Navy's transports cover the globe at all speeds in all weather. The seminal R4D, the Navy's version of the Douglas C-47, took the Navy to its first ice base in Antarctica and flew through Vietnam. Its various stablemates were many. The big, graceful Lockheed C-121, the military version of the Constellation airliner, spanned oceans and carried the Blue Angel maintenance crews to one show site after another in the 1960s.

The king of the transports, the Lockheed C-130, bids fair to remain in service, indeed in production, well into the 21st century, constantly racking up new destinations and services.

The mid-'90s brought a major change in carrier air wings, indica-

tive of the economic and political times. The F-14 community found itself involved in the attack mission, which has extended the Tomcat's value in today's air wing, even with the reduction of Turkey squadrons in a wing, from two to one.

The stalwart A-6 also departed the scene, and the Navy added a third FA-18 Hornet squadron—usually a Marine unit—to a carrier's wing. Single-seat light-attack was alive and well, but the Hornet's task-saturation levels were high. The A-6, of course, had a two-man crew, but the FA-18 relies on HUDs and computers to permit its single crewman to handle missions.

There were other folks in the other planes around him, and coordinating with them become a high priority. The arrival of the enlarged, improved FA-18E and F promises increased range and load.

Along with the new airframes, new ordnance has also appeared, increasing both capability and tasking. AMRAAMs and JASOWs perform, but system-knowledge and understanding is the key to this performance, as much as

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A VFA-86 pilot climbs into his Hornet aboard USS America during Desert Storm.

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Operation Desert Fox in December 1998, and subsequent Southern Watch missions, demonstrated the importance of knowing how to operate the JASOW. Besides contending with their first combat missions, some first-tour FA-18 aviators from USS Carl Vinson faced using one of the



The Harrier saw its first combat during the 1982 Falklands War, flying with both the RAF and Royal Navy. America's Harrier force had to wait another nine years before seeing its first action—the Gulf War. VMA-331 AV-8Bs prepare to launch from USS Nassau in February 1991.



Star Wars Canyon...the view from an A-7, Desert Shield 1990. (John Leenhouts)

military's most important pieces of new ordnance for the first time in combat operations.

A much longer and involved operation, Allied Force, lasted for 77 days, two-and-a-half months. It saw some of the most intensive, continuous bombing of another country since Vietnam and the Gulf War. Coordination between countries and

NATO headquarters was complicated. American carrier aircraft were somewhat late in starting operations, but after the first missions on April 6 (day 14) crews from the *Theodore Roosevelt* quickly won their spurs.

There's so much on the horizon as we change centuries—the oncoming FA-18E/F and the innovative V-

22, as well as major upgrades to existing aircraft like the UH-1 and AH-1. We can't always tell what's going to be on the flight plan, especially as the world continues to adjust to ever-changing political and cultural situations that may require Navy and Marine Corps presence anywhere on the globe. One thing's for sure: it'll never be dull. 🦅

On Cat 1

Coming Attractions for February

- Rescuing the People at Home
- My First Blue Angel Landing
- TomHawk or SeaCat



BROWNSHOES IN ACTION COMIX

"The kind real aviators like"
by Cdr. Ward Carroll

Y2K-OMIX

One night at a morale-building new year's eve AOM...

And so, as the clock strikes midnight, I wanted to take this opportunity as your commanding officer, while we're here in these potentially hostile waters far from our loved ones, to say I think...I think...I think...

What's wrong with the skipper?

Somebody do something!

Hold on, gentlemen. As you may remember, besides being a face in the crowd of first-tour lieutenants, I also hold a doctorate in artificial genetics.

Aha! Just as I thought. The skipper is actually a vintage 1980's cyborg—and he's not Y2K compliant!

I think...
I think...
I think...

XO see pay
1st mess bill of
millennium tsa?

I think...
I think...
I think...

Does somebody in your squadron seem a bit out of sorts? Check him for Y2K compliance! And while you're at it, check your computers!