THE NAVAL SAFETY CENTER'S AVIATION MAGAZINE

approach

April 2003

BASH

Let's Get Ready to Rumble

Wet & Wild **in San Diego Bay**

approach

The Naval Safety Center's Aviation Magazine

April 2003 **Volume 48 No.4**

On the Cover An S-3 Viking from VS-35, on board USS *Abraham Lincoln*, during Operation Northern Edge, off the coast of Alaska. Photo by Ltjg. James Pupplo

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Mission Statement

Mishaps waste our time and resources. They take our Sailors, Marines and civilian employees away from their units and workplaces and put them in hospitals, wheelchairs and coffins. Mishaps ruin equipment and weapons. They diminish our readiness.

This magazine's goal is to help make sure that personnel can devote their time and energy to the mission, and that any losses are due to enemy action, not to our own errors, shortcuts or failure to manage risk.

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

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Features

BASH

April Thanks

Thanks for helping with this issue...

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Lt. David Cisneros, HC-5
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Lt. Gregg Gray, VT-6
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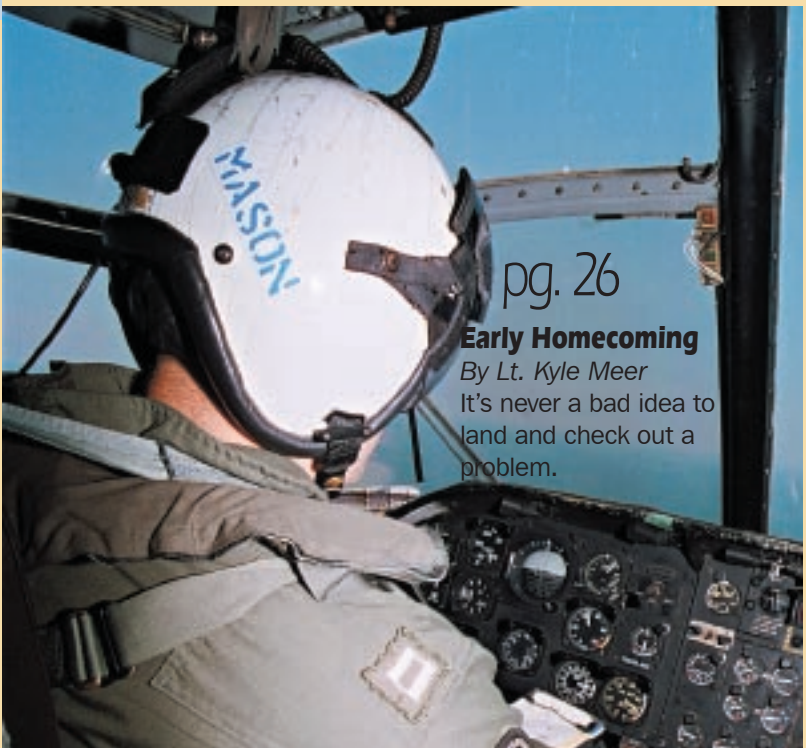

Departments

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www.safetycenter.navy.mil

Bird/Animal Strike Hazard

By Ted Wirginis

For many of us, spring is the time to depart the confines of our home after a cold and blustery winter and enjoy outdoor activities. We are more active, energetic and mobile. Our fine-feathered and four-legged friends behave the same way. Unfortunately, this fauna activity creates more hazards for aviators.

A 150-pound deer can total an SUV going 55 mph—something I recently experienced. The deer-in-the-headlights look still is imbedded in my memory. What damage could a deer, moose, turkey vulture, or seagull do to a 150-knot aircraft, or worse, a 450-knot aircraft? Damage can be extensive, or even catastrophic.

Bird and animal aircraft strikes cost lives and millions of dollars a year. Since 1990, the Navy and Marine Corps have had two fatalities because of bird or animal strikes. In this same time, the Naval Safety Center has recorded 13 Class A, nine Class B, and 83 Class C mishaps.

Although wildlife poses a hazard year round, the risk increases from April through October. In this issue, we hope to raise your Bird/Animal Strike Hazard (BASH) awareness and encourage you to use our wildlife reporting and management tools.

As defined in OPNAVINST 3750.R, paragraph 417, a Bird/Animal Strike Hazard is the term for incidents involving collision between any of nature's creatures and a naval aircraft, although "bird strike" is the category into which most of these reports fall. An animal strike occurs anytime a naval aircraft collides with a wild or domesticated beast, and the damage is below the threshold of a naval-aviation mishap (currently set at $20,000), alpha damage to the critter notwithstanding. The Naval Safety Center has expanded BASH reporting to include all military and civilian aircraft and airfields. The OPNAV instruction is the guide for ASOs to report hazards and mishaps.

This issue opens with an article by Matt Klope, the Navy and Marine Corps BASH program manager, who gives an overview of the program, management tools, technology, policy and local initiatives. Then, Derek Nelson updates you on the Naval Safety Center's new reporting system and its increased capabilities. Petty Officer Joaquin Juatai's article describes the NAS Whidbey Island BASH program from conception to implementation. We've added several "There I was" articles to round out our BASH segment.

We urge you to review your BASH program, to mitigate the risk associated with the increased wildlife activity, and to brief hazard areas to your aircrews. Using the Naval Safety Center's BASH reporting system will enable near real-time BASH updates, but it's only as good as the data input. Your timely inputs and information updates will enhance its effectiveness.

For those safety officers and petty officers who do not have a BASH or Web Enabled Safety System (WESS) account, apply for your username and password at: **https://simsweb.safetycenter.navy.mil/.**

Ted Wirginis is the BASH report administrator at the Naval Safety Center. LCdr. Mark Persutti is the Center's BASH program analyst.

Other links of interest:

- The University of Puget Sound bird identification resources site: http://www.ups.edu/biology/museum/wingphotos.html
- The Air Force BASH site: http://safety.kirtland.af.mil/AFSC/Bash/home.html)
- The Bird Avoidance Model (BAM) site: http://www-afsc.saia.af.mil/magazine/htdocs/marmag98.htm
- The Bird Strike Committee USA site: http://www.birdstrike.org/commlink/links.htm

BASH

By Matthew W. Klope

I have been a civilian wildlife biologist for the Navy for the past 24 years. Most of that time was spent protecting wildlife and habitats on Navy lands. I am currently the Navy and Marine Corps BASH program manager. Since taking over the Naval Facilities Engineering Command's BASH program in February 2000, I have grown to appreciate the relationship between wildlife, habitat, and the naval aviator.

Managing wildlife and natural resources on Navy and Marine Corps lands is a complex, full-time job for natural-resources managers. We must be aware of the environment but must stay focused on supporting the military mission. Doing both is not always easy, since most naval facilities are located near coastal areas associated with wetlands and other habitats. These areas attract various wildlife species, migratory and non-migratory. Many facilities were built in the early 1940s and were located in areas considered out of the way and low-cost, such as coastal wetlands, woodlands, and habitats not desirable for industry.

Today, many of our facilities are now islands of pristine, natural habitats, surrounded by human encroachment. As more and more wetlands and coastal estuaries become developed for human habitation, these islands of natural habitats—naval facilities—become more important to wildlife.

Unfortunately, this situation presents a big problem. Since the 1970s, many species of birds have increased their numbers dramatically. Combine this growth with shrinking habitats, and you're on a collision course with naval aviation. Since 1980, the Naval Safety Center has recorded over 12,000 wildlife strikes. I say "wildlife strikes" because BASH events have occurred with many species, including birds, deer, moose, cows, coyotes, dogs, cats, bats, snakes, and fish. Only 20 to 25 percent of all damaging and non-damaging strikes are reported.

Aviation-mishap reports show strike events have caused the death of two naval aviators, 14 crashed aircraft, 17 ejections, 36 injured aircrew, and 243 Class A, B, and C FODed engines. These reports also indicate the top four wildlife species involved in mishap events are gulls, vultures, waterfowl, and deer. The cost to the Navy because of these mishaps is over $313 million. This expense does not accurately reflect the total cost, since it doesn't include the damage estimates found in the thousands of hazard reports.

What can be done to prevent future wildlife-strike events? First, and foremost, is awareness and communication. All players in the aviation and natural-resources communities need to communicate with each other. The installation's natural-resources manager is one set of eyes and ears monitoring the wildlife populations around an airfield. The second set of eyes and ears are the operations personnel and aviators using the airfield environment. The natural-resources manager can discuss wildlife issues, identify peak movement periods, offer migration information, and help identify strike remains.

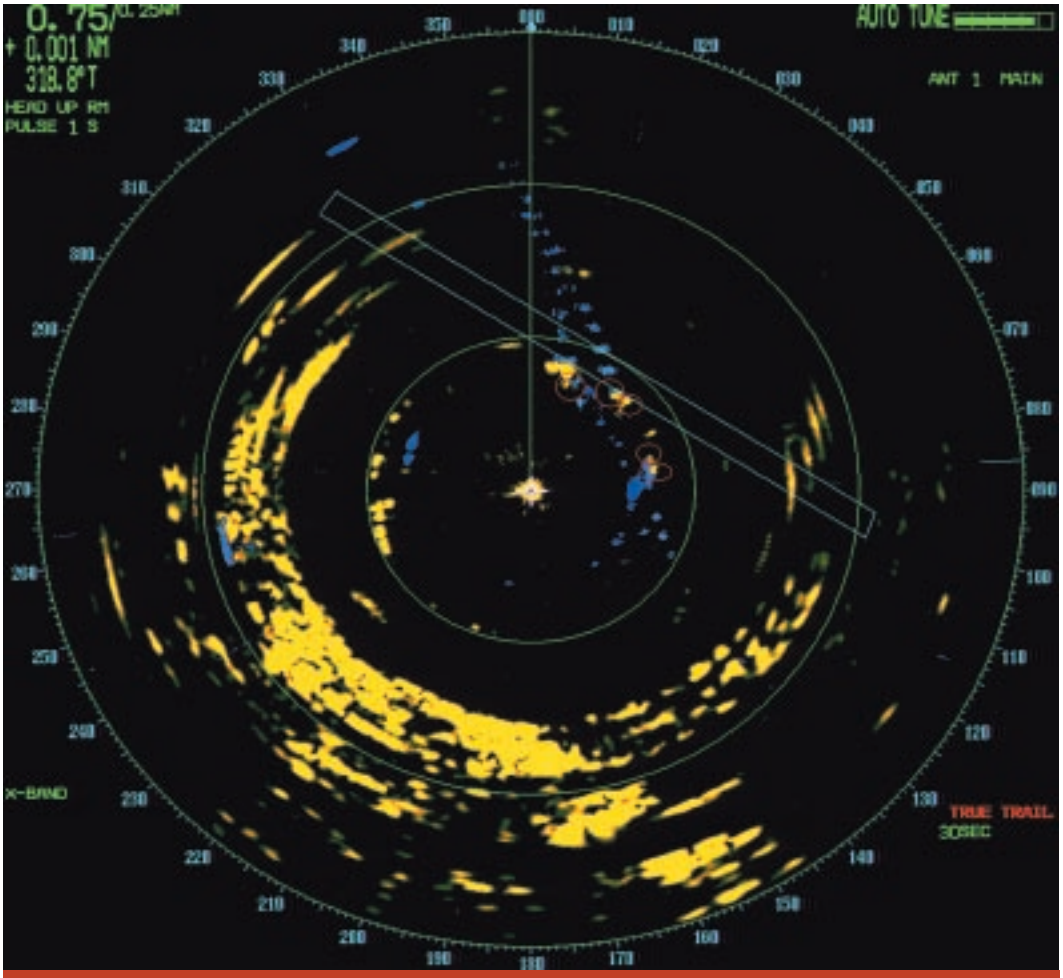
Aircrews and airfield workers should report wildlife activity to the tower and other aircraft. Wildlife sightings reported by aircrew could save the lives of aviators on later flights.

BASH should be a topic at all safety standdowns and aviation-safety-council meetings because of the seasonality of wildlife populations and migrating habits. There is a BASH interactive multimedia-training module available through the Distance Learning Program of the Civil Engineering Corps, Officers School (CECOS), Port Hueneme, Calif. This training program is in a CD format

and covers all aspects of the Navy and Marine Corps BASH program. It is available, at no cost, through CECOS. The point of contact is Ms. Jacqueline Francis, (805) 982-2822 (DSN 551), or e-mail francisjr@cecos.navy.mil.

The most important component of the BASH program is reporting wildlife-strike events and identifying the species involved in each event. It is not realistic to control or to eliminate all wildlife on an installation. In fact, many wildlife species associated with an installation do not pose a threat to aviation. It's the few problem species that need close attention and management. The only way to determine which species are creating the problem is to document strikes.

All damaging and non-damaging strikes must be reported to the Naval Safety Center. The Safety Center recently upgraded their website (see page 7) for reporting wildlife strikes. The revised website includes a query capability for squadrons and natural-resource managers to obtain data for management purposes. This new site also allows you to report non-damaging strike events. The number of "Oh&^%$*! How did we miss that one?" far outnumber actual strike events. If these types of events are reported, imagine the database that could be used to manage an installation's BASH program.



This BIRDRAD image shows five flocks of mallard ducks that flew into a ponded area on the infield of NAS Whidbey Island, WA. The ducks had arrived just after dusk and their activity lasted for 15 minutes. The flocks are indicated by yellow dots and circled in red. The blue dots are the 30-second echo trails of where the birds came from. This image was sent to the NAS operations officer and air wing safety officers at Whidbey and then to all squadrons with a bird advisory for the following evenings.

Strike data also can be used to locate problem areas around the airfield and training areas. If a group of strike events and the species are identified at a specific location on an installation, then measures can be taken to modify the habitat. It might be a wetland, ponded water from a rainstorm, an agricultural outlease, a bird-roost area, or a coastline. Problem areas can be avoided by modifying flight operations. For example, if a known flight of birds cross the airfield in the evening just after sunset, then flight operations might be delayed. Another possible option would be to use another runway, away from the local migration.

Through the Natural Resources Division of the Naval Facilities Engineering Command, a process has been established with the Smithsonian Institution to identify bird-strike remains. The Navy's procedure is for the installation's natural-resources manager, university, museum, or birding group to locally identify strike-event remains. If this procedure is

not possible, or if the remains are too small or fragmented, then they should be sent to the Navy's BASH program coordinator for cataloging and forwarding to the Smithsonian for identification. All identification information and remains will be returned to the squadron after they are identified. It is important to collect and turn in for identification the smears on the canopy that look like a big bug splat. A splat will contain feather fragments that can be identified. When more strike events are identified, the installation's program will improve.

Research and study of bird movements within the local vicinity of an installation and across the nation is progressing. Technology is advancing in the area of radar ornithology through the funding of the Department of Defense Legacy Program. The Navy's BIRDRAD (bird radar) program, through the Clemson University Radar Ornithology Laboratory, is developing a modified marine radar to document bird activity at local airports.

Five BIRDRAD mobile units are deployed around the country at Navy, Marine Corps, and Air Force installations. Five more units will be built with FY03 Legacy funds. Once all 10 units are deployed and operating, a website will be created to centrally locate activity images. Pilots can view the avian activity at their local installation or their destination during preflight planning. The Legacy Program also is funding Clemson University to research using the National Weather Service's Weather-Surveillance Doppler Radar images to study national bird activity associated with weather patterns. This data will be used to predict national movements of birds. Current information available for national movements and concentrations of birds is available through the U.S. Air Force's Bird-Avoidance Model (BAM) website (see page 2). A website tool for

Wildlife sightings reported by aircrew could save the lives of aviators on later flights.

This white pelican is one of 17 pelicans hit by a single FA-18 flying over the California desert.

flight planning is the Avian-Hazard-Advisory System (AHAS), www.ahas.com.

Another research tool being looked into is partnership between the Navy and the Partners-In-Flight Initiative. This program is dedicated to preserving migratory birds on Department of Defense lands. Research is ongoing to determine the habitat requirements for avian species that do not pose a threat to military aviation. This program will assist installation managers in directing their limited funding away from the species that do not pose a threat to those that do.

A comprehensive BASH program requires communication between all players in the installation's aviation and natural-resources programs. Information regarding problem species or problem areas must be related to the aviators in a real-time scenario to provide the safest possible flying environment.

If you have any questions or comments on the Navy's BASH program, contact:

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Collecting and identifying strike-event remains provides important information for BASH program coordinators.

BASH Reporting

By Derek Nelson

Aviators have always had to watch out for birdstrikes, and the term BASH has been familiar for a long time. But huge changes are coming to the BASH system. For one thing, the program isn't limited to birds, but includes all animals. The occasional deer or alligator can be included (a wild-dog strike was reported recently). More importantly, the technology for reporting and querying has undergone a major upgrade.

When you start using the new BASH reporting system on the Naval Safety Center website, you will be applying the efforts of a development team: Louise Hyatt (lead programmer), Dianne Renn and Patrice Lilley (programmers), Carleen McAndrews and Yvonne Drummond (database administrators), and Laura Bishop (systems administrator). Typically, these teams are unrecognized, and even when their efforts are appreciated, the average user has no clue as to the amount of work required. Ideally, the forms, screens and reports are simple, "like a first-grader could have done it," Hyatt says. But, she adds, that's how you recognize a good program.

Hyatt started on the new BASH system in October 2001 and worked steadily through August 2002. Lilley started on the query feature last summer. The previous system did offer an on-line form to use as a starting point for a bird-strike report, but after you filled it out, you had to submit it via message as a text file. It included very few mandatory fields or validation, and as a result, it didn't produce very good data. A Safety Center staff member then hand-coded the reports into the database.

The new system offers "select lists" (pull-down menus) to choose from (for aircraft type, for example), which makes reporting easier, quicker and more accurate. You can add records and edit existing ones. Using the old system, you could produce some canned reports of various types, containing a few fields. The data was usually at least a few months old and somewhat unreliable. Using the new system, you'll be able to query by location, time, aircraft and airfield, in a much more interactive way. The resulting data will be much more useful to aircrew, base operations and wildlife managers.

BASH is the first part of the Safety Center's on-going WESS (Web-Enabled Safety System) project, which will eventually allow fleet users to report all hazards and mishaps on-line, and to do custom retrievals of real-time data, as well.

Derek Nelson is the head, media department, Naval Safety Center.

The BASH at NAS Whid

By JO2 Joaquin Juatai

NAS Whidbey Island serves as the proving ground for many of the initiatives promoted by the Navy's BASH program. The BASH program manager, Matthew Klope, is located here and has helped institute many of NASWI's BASH procedures. The base is located in an area of abundant wildlife, which also means wildlife strikes are an issue. The surrounding area is a haven for shorebirds, raptors, herons, deer, coyotes, and other wildlife. Each of these animals plays a part in airfield operations. The flight routes routinely used by Whidbey's aircraft allow wildlife to become a factor in flight operations planning. Here are some of the ways NAS Whidbey Island minimizes the risk of a wildlife strike:

☛ On the airfield:

1. NASWI's BASH program began with the removal of perches from the airfield. Derelict equipment, unnecessary gear, and everything that could be perched on was removed from flight areas.

2. Anything that couldn't be removed was covered with spikes, wire octopuses, and other perch-deterring devices. "If it doesn't move, it has spikes," said Klope.

3. Trees and shrubs used by wildlife to perch on or hide in are being removed.

4. NAS Field Facilities operates a Bird Deterrent Dispersal Team, known as the BASH team. This team responds to wildlife-problem situations on the airfield. They are trained in using pyrotechnics and have authorization to fire live rounds. The authorization that allows the shooting of problem wildlife is from the base CO, under a U.S. Fish and Wildlife Depredation Permit. The BASH team is notified whenever there is the possibility wildlife could impede safe-flight operations.

5. Random deterrent devices, such as noisy propane cannons, are used.

☛ In the area surrounding the airfield:

1. Hangars are a prime place for a bird to perch and nest. Whidbey's BASH program participates in ongoing studies to deter nesting birds from flight-line facilities.

2. A BASH orientation is part of the airfield driving-indoctrination brief for everyone working on the airfield. Wing and squadron safety stand-downs include BASH training. BASH is promoted at every level as everyone's responsibility; it's not just the pilots' or the facilities crews' responsibility.

3. All hands are actively encouraged to participate. "If you see a problem on the airfield, such as a flock of ducks, call the tower. If you find a dead bird on the apron, pick it up and report it. The retrieval of a dead bird has led to the discovery of aircraft damage in the past," said Klope. "If you see it, report it," is the phrase of the day, he added.

Never hesitate to report a strike, a find, or the possibility wildlife might interfere with flight operations.

4. BASH program updates are presented monthly at the base aviation-safety-council meetings. Current wildlife trends are discussed, past wildlife trends are reviewed, and BASH warnings are issued, based on those trends. If shorebirds tend to be a recurring problem in January, then the BASH team will brief the council of the high bird-strike probability for that period. BASH personnel would outline their abatement plans accordingly.

☛ Administratively:

1. NAS Whidbey Island's commanding officer signed a BASH instruction, detailing the NASWI plan. This plan includes a standard-operating procedure for the use of pyrotechnics and live ammo.

2. NASWI and its tenant commands are encouraged to keep detailed strike records using the Safety Center's database. The BASH team can use these records to determine what species are a recurring problem and take steps

Program
bey Island

to remove or eliminate them. As Klope put it, "Why waste time on birds that aren't a problem?"

☛ Research:

1. "We are taking data from BIRDRAD, a bird-tracking radar, and posting warnings to the pilots," said Klope. BIRDRAD enables the Whidbey BASH team to make flight-operation recommendations, based on trends shown by radar images of bird activity at the airfield.

2. Reporting strikes and keeping detailed records are essential. Using the data collected from wildlife-strike reports, BASH personnel can analyze trends and predict wildlife activity. Detailed records have shown the tendency of recently fledged red-tailed hawks to stray into the flight path in the late spring—a recurring problem. With the data provided by strike records, we can predict problem areas and take action to relocate or eliminate problem species.

The bottom line is if you are not proactive in your approach to BASH, you are not effective in abating wildlife-strike hazards. BASH always should be in the thoughts of every individual on the airfield and the surrounding area. Never hesitate to report a strike, a find, or the possibility wildlife might interfere with flight operations. The lives of the pilots and aircrew working on the airfield are at stake. NAS Whidbey Island's BASH program is striving to create an environment friendly to wildlife and flight operations, and it is an all-hands effort.

JO2 Joaquin Juatai works in the NASWI public affairs office.

Birdstrikes can occur anywhere. The griffin vulture in these two photos was struck by a VQ-2 aircraft in Rota, Spain.

Third Times

By Ens. Christopher King

It was, without a doubt, the clearest day I had seen since starting primary at NAS Pensacola. As we climbed out into area one, I was in awe; we had at least 30 miles or more of visibility, no haze, and not a cloud in sight. The only exception was a thin-scattered layer at 1,000 feet in the working area. This was my second warm-up checkride before my fam-solo flight, technically making it my third checkride. I thought, "With the weather as nice as it is today, I'm sure to finally get to solo."

The flight was uneventful. As expected, this checkride was becoming almost second nature to me. Just as the IP and I had briefed, we first did high work, then shot a PPEL into Barin. We bounced in their pattern a few times, while dodging the large amount of other solo flights invading the pattern. Since the primary-solo field, Saufley, was closed, we headed to Summerdale for more bounces. We wrapped it up, got ATIS, and got established on course rules toward homefield.

On the way back, we were sardined between the copious amounts of solos in front of and behind us. Approach even diverted us off the rules a little bit and had us follow traffic off our nose, so tower could manage the pattern and keep us at proper interval. As we came off point C and onto two-mile initial, we must have been at least the sixth aircraft entering the pattern, with more aircraft behind us.

Because everything was so busy, I concentrated on keeping the traffic in sight off the nose, while we transitioned to 1,300 feet and 170 knots for the break on runway 05. I caught something out the corner of my eye and glanced up to see the silhouettes of two large turkey buzzards rise out of the tree line at 1 o'clock high, about 15 feet above us.

From that point, everything happened at once. In the instant I saw the birds, I remember seeing the one on the left begin to fold its wings. Then I saw a black flash as he dove over the prop. Then I felt it—all in less than a split second. There was no time to react or even to anticipate what had happened. It felt like someone had taken a baseball bat to my face. I guess I was quick enough to flinch and close my eyes, because I remember opening them after the impact—or, at least, I tried to. What I saw, though, was just a blurred dark grey. All I heard was a muffled, faint sound of a deafening 200-mph windblast hitting me in the bare face. I felt nothing but numbness from the blow, and that's when I thought, "This must be it, all my senses nearly are gone. I can't die this way. This really can't be happening."

For the next five seconds, more thoughts passed through my mind than I ever thought were humanly possible. Who knows, it might not even have been five seconds. When I later talked to other people about the events, it was evident my sense of time and space was distorted severely from the way I remembered them.

Suddenly, the vision in my right eye came back, along with my hearing and partial feeling in my face. The message relays in my brain must have been impaired from the shock of the blow to my head. The scene before me was like something out of a movie. In my disoriented state, I barely could focus on one thing at a time. I subconsciously knew the aircraft still was under control, because I didn't feel any unbalanced flight, and I noticed the stick was being manipulated from the back. The first thing I focused on, though, was the broken canopy glass in front of me. I then noticed my visor was missing, along with my mic. I couldn't hear anything in my helmet because of the wind, and I thought my helmet must have been knocked off. The IP later told me that I instinctively took off my helmet, at least what remained of it. The visor had been shattered, leaving only a small portion over my left eye; the left side of my face had taken most of the hit.

It felt like someone had taken a baseball bat to my face.

The next thing I noticed was the blood—it was splattered everywhere, all over the canopy and inside the

s's the Charm

cockpit. The blood was blown by the wind as it poured out of my face. I thought to look behind me to make sure the IP was OK. I saw him with his helmet on, dark visor still down and unscathed, but with blood splattered all across it. I saw him talking into his mic, and, although I couldn't see his eyes through the visor, he looked worried. The lack of a reassuring look made me think the worst about my condition, but I told myself I would be all right.

I gave him a thumbs up to communicate in some way I still was coherent. I turned around so I wouldn't distract him—confident he had the controls. He was taking it straight-in for final. We hoped they had heard his Mayday call over the windblast and had diverted traffic out of the way. I knew there had to be someone on at least every position in the pattern, the 180, and final.

That's when I thought, even if I lost an eye, at least I was going to make it out of this situation alive—I had the will. Then I remembered the story of the last bird strike that had happened about three or four years ago, in which the IP permanently lost his eye. I then felt enraged and almost in denial that something so unreal and freakish like this could have happened to me. A bird strike through the canopy always was one of those things that seemed almost like an urban myth: You never think it's going to happen to you. It's like walking outside and getting struck by lightning.

After shouting a few choice words, I calmed down and concentrated on trying to suppress the bleeding from my face. I leaned over to the right side of the cockpit to clear the view for the IP; I think that was around the time I noticed we were on final.

When we touched down, the blood running down from my forehead had started to blind my right eye. As we rolled down the runway and were coming to a stop at the holdshort line, I could see the fire trucks on their way. I took one of the rearview-canopy mirrors and looked in it; the person I saw looking back wasn't me. It was a bloody-red pulp of a face out of a horror movie. I reached up and forced the canopy open—it was jammed part open. The crash crew began to huddle around the plane and me.

LCdr. Pete Cecilia was the instructor pilot during a severe birdstrike in Florida.

The blood in my right eye was too much to keep wiping away, so I just closed my right eye and kept reassuring the crash crew I was conscious and still OK. I later was told it took the ambulance five minutes to arrive after we touched down, but, to me, it seemed like only one minute, at the most. They insisted on carrying me out of the plane on a stretcher, and I got a ride to the ER where they had fun patching me up.

I had several stitches in my face and a completely swollen eye, along with internal bruising of the eyeball itself. I came out fine—my vision and everything else is like new but I have some scars to remember it by. I am thankful this wasn't my solo flight, because who knows what the outcome might have been. Being blind and disoriented at 1,300 feet and 170 knots, coming into a full pattern, could've been a dangerous combination. At least now I can joke about how I already might have earned myself a call sign early in my career.

The most valuable thing I learned from this event is no matter how on-task and focused you are, you need to push yourself to be even more aware, especially outside the cockpit. If I had been scanning the rest of the sky, rather than primarily looking at the pattern and traffic off the nose, I might have seen the birds earlier. Maybe my incident will open up someone else's eyes.

Ens. Christopher King is an SNA in VT-6.

The In-Flight Snack Was Fresh Bird Parts

By Ens. G.W. Street

I never thought I would be writing my first safety article so early in my career. I didn't even make it beyond my first solo flight before disaster struck—really hard. It was July 20, 1999, and I was excited and elated after passing my safe-for-solo check ride. The weather was unusually clear for the middle of a summer afternoon in northwest Florida.

After the check ride, I relaxed during my required rest period between events and then reported to the flight-duty officer (FDO). I paid close attention to the solo-flight brief, was assigned a plane, and was told to go have a "good time." Part of me felt nervous, but the other part couldn't wait to get airborne and look back at an empty rear cockpit. The nervous part of me asked if I could stay out of trouble all by myself.

After I preflighted my T-34C, my nerves began to calm, and I strapped into the cockpit. Once I started to taxi, I settled down and began to enjoy a chance to fly solo. I headed for the southwest working area and took a good look at the scenery near the coastline. I proceeded to the outlying field (OLF) for my required number of landings and radioed my intentions to depart the pattern.

It was the RDO's turn to relax a little, because he now had one less solo aircraft to worry about. I departed the OLF pattern and flew west. I was making a routine departure 10 miles west of the outlying field when disaster struck. I just had caught sight of the water tower, which meant I could climb without entering Pensacola's Class C airspace. As I turned my head forward, I spied a large, white bird at my 1 o'clock position and closing fast. He must have grown complacent in his old age, because he didn't take any evasive maneuvers.

I made an instant control input to roll left, but it was too little, too late. I heard the crash through my helmet and felt the wind rushing inside the cockpit. Although the bird was in no pain, I never had been so terrified in my life. The feeling of sheer panic subsided after a couple of seconds, and I decided to quickly figure out what to do.

I only was at 900 feet, so my first priority was to avoid colliding with the ground. My windscreen and visor were covered in bird blood and bird parts. My left eye was swollen almost shut, and the vision out of my good eye was obscured. Avoiding a collision with the

ground was not going to be easy. I felt like I had been punched squarely in the nose by my on-wing. I only could hope the blood all over my face belonged to the bird. With one usable eye, I tried to focus on the attitude indicator and altimeter.

Once I was convinced I safely was maintaining altitude, my next priority was to tell the OLF RDO I was returning for an emergency landing. I wasn't too worried about using routine-entry procedures, but I thought it would be nice to let the RDO know the birdie-hearse was inbound.

Establishing communications was difficult because my boom mike was loose and swinging in the back of my helmet. It was time to improvise. I held the boom mike to my mouth with my right hand, keyed the transmit switch with my left hand, and flew the turbo-weenie between my knees. I screamed a Mayday call and hoped I had made the right impression to whomever was listening. It was difficult to hear radio transmissions because of the noise in my open cockpit. As I approached the runway and began to decelerate, I heard the RDO say he had me in sight. I felt better after hearing that call. I wasn't lost; someone had heard my Mayday call, and help was on the way. By now, the pattern was clear and I had the whole field to myself. My one and only straight-in approach had been three flights ago, and now I got the chance to do it with only one eyeball.

I touched down with my smoothest landing of the day. I should have tried the one-eye-landing technique much sooner in flight training—I could have saved the Navy a lot of rubber. I taxied toward the crash truck waiting for me at the departure end of the runway, and shut down. I slumped in the seat, trying to convince myself I still was alive.

> The canopy had been hit so hard it took two members of the crash crew to pull it open.

The damage was horrendous. The canopy had been hit so hard it took two members of the crash crew to pull it open. After I finally got out of the aircraft, my legs still were shaking too much for me to stand. As I cleaned up, I was extremely relieved to learn most of the blood was birdie blood. My only injuries were facial scratches from the canopy fragments and a big black eye. The bird, however, never was reconstituted and no longer is a threat in alert area 292.

I guess I was ready for my solo flight after all. When anyone asks about my memorable event, I tell them that, without all the seemingly endless, simulated emergencies and instructor feedback, I wouldn't have been able to land with all the degradations and my physical condition. That emergency-procedure practice paid off when I needed it.

Ens. Street was a SNA with VT-6 and now is training with HT-18.

The Hanging Chicken

By Maj. Noel Garcia, USAF

It was a beautiful day in south Texas, with clear, fall skies. I was flying lead on a two ship, tactical-formation training flight near NAS Corpus Christi. When we had finished our training, we departed the simulated drop zone and headed home. We climbed to 1,000 feet, contacted approach, and were cleared for a visual, straight-in approach to Corpus. My student and I were 13 miles from the field, level at 1,000 feet, at 180 knots, when he yelled, "Bird! Bird!"

I looked across the cockpit and saw a large turkey vulture dive for cover. As the bird disappeared above our windscreen, we heard a loud thump. I thought the bird had hit the top of the fuselage, just above and aft of the windscreen. My wingman had a front-row seat and witnessed the bird strike our aircraft. He saw a six-inch hole on the leading edge of my right horizontal stabilizer. It was impossible to ascertain the extent of the damage while in flight. I've had numerous bird strikes over the south Texas skies, so I wasn't concerned.

The aircraft continued to fly without any noticeable control problems. From what my wingman could see and what I felt, we thought the damage wasn't too bad. We were close to Corpus and headed straight home. My wingman assumed the lead and set us up for a visual straight-in to runway 13. Approximately five

miles from the field, while performing landing checks, the plane started to shake as we slowed through 125 knots. I added power, and, with increased airspeed, the vibration stopped. At 140 knots, I was comfortable with the stability of the plane and continued inbound. I maintained 140 knots until crossing the runway threshold, then slowed for an uneventful landing.

As I taxied to parking, one of my instructor buddies saw the damage and radioed, "Hey Grassy, did you just taxi by with a chicken hanging out of your stabilizer? I've got dibs on one of those chicken legs."

The bird almost had penetrated halfway through the stabilizer, stoping three inches short of the spar.

I replied, "Yeah, right, what a comedian."

After parking, I walked around the plane and was amazed at what I saw. The bird almost had penetrated halfway through the stabilizer, stopping three inches short of the spar. The inboard leading edge of the stabilizer also had pulled away from the fuselage, so the forward one-third of the stabilizer no longer was attached to the plane. Had the bird hit farther out on the stabilizer, the blow may have resulted in the stabilizer completely failing. The most amazing sight was the intact legs of the bird dangling from the gaping hole it had produced.

Maj. Garcia flies with VT-31.

Bingo With a

By Lt. Nick Good

After another failed try at landing on the boat in challenging conditions, I sucked up my gear and committed to a bingo profile. I yelled at myself for several miserable landing attempts and started working through the fuel numbers. I showed myself on deck with a little more than a 2.0; little did I know my night just was beginning.

After checking out with strike and trying to check in with area control, I went through the ship-to-shore checklist and settled in for a 120-mile bingo. After the fifth attempt to check in, I started to get a little nervous. As it turned out, another Hornet from my sister squadron was about 20 miles behind me on the same profile. I clearly could hear them, but I couldn't talk to them; my radios wouldn't transmit. I would be OK as long as I followed him through the frequencies. I swapped my squawk from 7700 to 7600 and tried to tell area control that another plane out there wasn't talking to them and was also on a bingo profile. Control never caught on, and we switched up approach, who knew there were two inbound radar tracks and tried to

I showed myself on deck with a little more than a 2.0; little did I know my night just was beginning.

Full Bucket

establish communications with both. Unable to transmit, I overheard the duty runway was 05, but they would clear runway 32 for landing.

Perfect, runway 32 was straight off my nose at about 20 miles. I planned a standard NORDO approach: flashing my taxi light and looking for ALDIS lamp signals. Everything seemed to be working out as it should. Too bad my luck would change drastically in the next 15 minutes.

I dirtied-up at 10 miles, flashed my taxi light, and rocked my wings. I planned to execute a go-around if tower was unable to ready the ALDIS light for my first pass. As it turns out, the tower saw me and tried to clear me to land with the lamp. Unfortunately, the airfield was building a new tower that should have been completed months earlier. When the tower supervisor got to the light, the uncompleted tower blocked my line of sight. I executed a waveoff and proceeded to the downwind for runway 32. On downwind, I looked toward the tower and received the much-anticipated signal: clearance to land.

Awesome! I still had 1,500 pounds of gas. I would have no problems stopping with a light jet, even with carrier-pressurized tires. In my exuberance, I dorked away the approach and landed long—between the lens and the short-field arresting gear. For those not familiar with the airfield, I landed with about 7,000 feet of remaining runway.

"No sweat…I'll just get on the brakes early and get this thing stopped in plenty of time," I thought. The pressure on the pedals was normal, but I wasn't slowing as fast as I should have. I was at 100 knots at the 6,000-foot board—faster than normal but still manageable. I was 80 knots at the four board and 70 knots at the three board. I was too fast and needed to stop, so I dropped the hook.

After dropping the hook, with 2,500 feet of remaining runway, I selected the emergency brakes. "I'll still catch the long-field gear, and I'll be set," I thought. I hook-skipped the long-field gear, and I was off to the races.

From what I remember, I had slowed to about 40 knots before I went off the runway. As I went off the end, I shut off both motors and moved my hands to the ejection handle. There weren't many lights at the runway end but still enough to break out a horizon. I decided to eject as soon as I felt a wing go down. Finally, the jet came to a stop about 150 feet off the end of the runway. Before the crash trucks got to the jet, I already was out kissing the ground, happy not to have ejected.

After composing myself, I thought about what had happened. I had made a handful of mistakes that were highlighted by some field-

maintenance issues. First, I was so busy trying to do the right thing and with being NORDO, that I didn't do the right thing for my emergency. I wanted to remain predictable and land on the same runway I had used for my initial approach. As I entered the downwind, I crossed over an intersecting runway that was much longer. I later learned it also was a duty runway. After executing the waveoff, I should have circled to land on the longer runway.

Next mistake. Although 1,500 pounds of fuel doesn't normally seem like much, it's plenty when dealing with an emergency at a VFR field. I had plenty of gas for two more approaches. When I noticed I wasn't slowing down like I should have been, it was time to go around.

Emergency brakes are free with two running engines. Once I made the decision to stay on deck and suspected the normal breaks weren't functioning properly, I needed to pull the emergency brakes and get on them. I put too much trust in the long-field gear. I discovered this trust was misplaced as we stopped by the gear on the car ride back to the hangar. It turns out the doughnuts that hold the wire off the deck were all out to the sides. The wire was flat on the deck where my hook had passed.

I did make one great save that evening. I shut off the engines as soon as they no longer were good to me. It would have been a Class A if I had FODed both engines. Thankfully, nothing was wrong with the engines, except some grass blades inside.

We only had been on the ship five days, and the same jet had prior braking issues. Just a week before, while coming back from a functional-check flight, the jet had had the same problem, and the pilot selected emergency brakes to slow.

Maintainers earlier had bled the brake system and signed off on the gripe. Before heading out to the ship, the brakes were checked at taxi speed and worked 4.0. So, what went wrong? The anti-skid control valve malfunctioned but didn't manifest itself at low speeds, below the anti-skid system's threshold airspeed. However, at speeds above taxi speed, the brakes badly failed. And, of course, when things are going downhill fast, you can count on something adding to the excitement, such as being NORDO.

Lt. Good flies with VFA-37.

Mishap-Free Milestones

VR-51	6 years (20,000 hours)
VAQ-133	7 years (10,000 hours)
VFA-22	7 years
VP-4	31 years (205,000 hours)
VFA-131	15 years (64,200 hours)
VRC-30	27 years (168,000 hours)
Marine Corps Air Station, Iwakuni, Japan	32 years (60,000 hours)
Naval Research Laboratory, Flight Support Detachment (NRLFSD)	40 years (62,000 hours)

4th MAW Units

HMLA-775	11 years (29,935 hours)
HMM-764	13 years (29,613 hours)
HMH-769	28 years (38,958 hours)
VMFA-134	7 years (23,485 hours)
VMFT-401	6 years (26,692 hours)
VMGR-234	27 years (107,943 hours)
VMFA-112	15 years (42,360 hours)
HMLA-775Det A	7 years (12,690 hours)
MASD	(48,205 hours)
HMLA-775Det A	3 years (6,452 hours)
VMGR-452	14 years (51,250 hours)
HMH-772	20 years (29,377 hours)
VMFA-321	6 years (15,537 hours)
MASD	22 years (55,568 hours)
HMM-774	33 years (62,693 hours)
HMLA-773	10 years (32,622 hours)
VMFA-142	24 years (65,317 hours)

LCdr. Roger Curry, AT1(AW) Bryan Perry, AT3 Lori Sturtz, and Lt. Andrew Strickler

The crew of Knight Rider 00, assigned to Helicopter Combat Support Squadron Five, Detachment Five, embarked on USNS *Flint*, was conducting a vertical replenishment between *Flint* and USNS *Kiska*. Lt. Strickler, piloting the UH-46D Sea Knight, was picking a 2,400-pound load of sonobouys. He transitioned to forward flight and transferred the controls to LCdr. Curry. At that moment, without any prior indications, the No. 1 engine flamed out. The aircraft gross weight exceeded 20,200 pounds, DA was in excess of 3,000 feet, and both ships reported rolls in excess of 10 degrees.

The aircraft's nose was positioned past the deck-edge-safety nets, and the rear of the aircraft and the external load were over the flight deck. As the aircraft-rotor speed rapidly decayed, LCdr. Curry aggressively positioned the flight controls to gain critical speed and preserve the remaining rotor rpm. In rapid succession, Lt. Strickler called for cargo jettison, selected cyclic trim to forward, activated both fuel-jettison switches, and started the APU. AT1 Perry jettisoned the external load, and the instantaneous release caused the cargo hook to snap back, hitting and lacerating his arm. He immediately closed and secured the rescue hatch, ensuring watertight integrity for the aft cabin.

LCdr. Curry traded altitude for airspeed and worked to regain rotor rpm. The generators dropped off-line, and the aircraft continued its descent to the water as the airspeed reached 65 knots. Lt. Strickler selected cyclic trim to auto, causing the rotor disks to level and increase lift, the aircraft began to climb, and rotor rpm built.

Lt. Strickler secured fuel jettison at 400 pounds per side and, with AT1 Perry's assistance, initiated engine restart; however, the engine would not restart. A check of the contamination indicator of the airframe fuel filter revealed the No. 1 indicator had popped. The crew suspected fuel contamination, and were concerned the No. 2 engine might fail. They declared an emergency and expedited the approach for landing. *Flint* immediately had increased speed after witnessing the failure and reported winds 40 degrees to starboard at 22 knots. Lt. Strickler was better positioned to make the approach from the left seat, so he took the controls and made a single-engine landing to the *Flint's* flight deck.

From onset to landing safely on deck, the evolution took less than three minutes. In that short time, the crew completed every emergency procedure and readied the aircraft for landing on a pitching, rolling flight deck.

Flying on My Wave Day

By Lt. Michael Bissell

We were two weeks into our spring at-sea period. I had soaked up a good-deal FCF on my LSO wave day. With a smirk on my face, I apologized to CAG paddles about missing a few recoveries, then made for ready four. By the way, I learned from my LSO buddies that my recovery would be MOVLAS (manually operated visual landing-aid system)—things couldn't be sweeter.

My hinge COTAC and I had flown many times before, so the brief and walk to the jet were routine. We went through start-up and final checks and taxied to the cat. I saluted, watched the shooter touch the deck, and saw the green shirt hit the button. I felt what seemed like a good shot and simultaneously noticed my AHRS had failed. Yes, we still are flying some old school non-CAINS II jets out here in Japan.

"No big deal" I thought. I'd seen this sort of thing before. I had lost a generator on the stroke and knew the other one should pick up the load in a few seconds. I focused on the airspeed indicator, then shifted my eyes to the horizon, since my attitude indicator wasn't doing me any good.

I yelled to my COTAC, "I've got it, and fire off the APU," as I climbed away from the water. By the time we got to pattern altitude, I had shifted my scan inside and had learned we lost both generators. I thought, "Why hasn't that APU started by now?"

My COTAC pointed to the only electrical indication in the jet, the APU RUN light. I double checked the APU-generator switch was on, and realized we couldn't get power to anything: no AHRS or INS, no engine instruments, no AOA, and no trim. I had nothing but

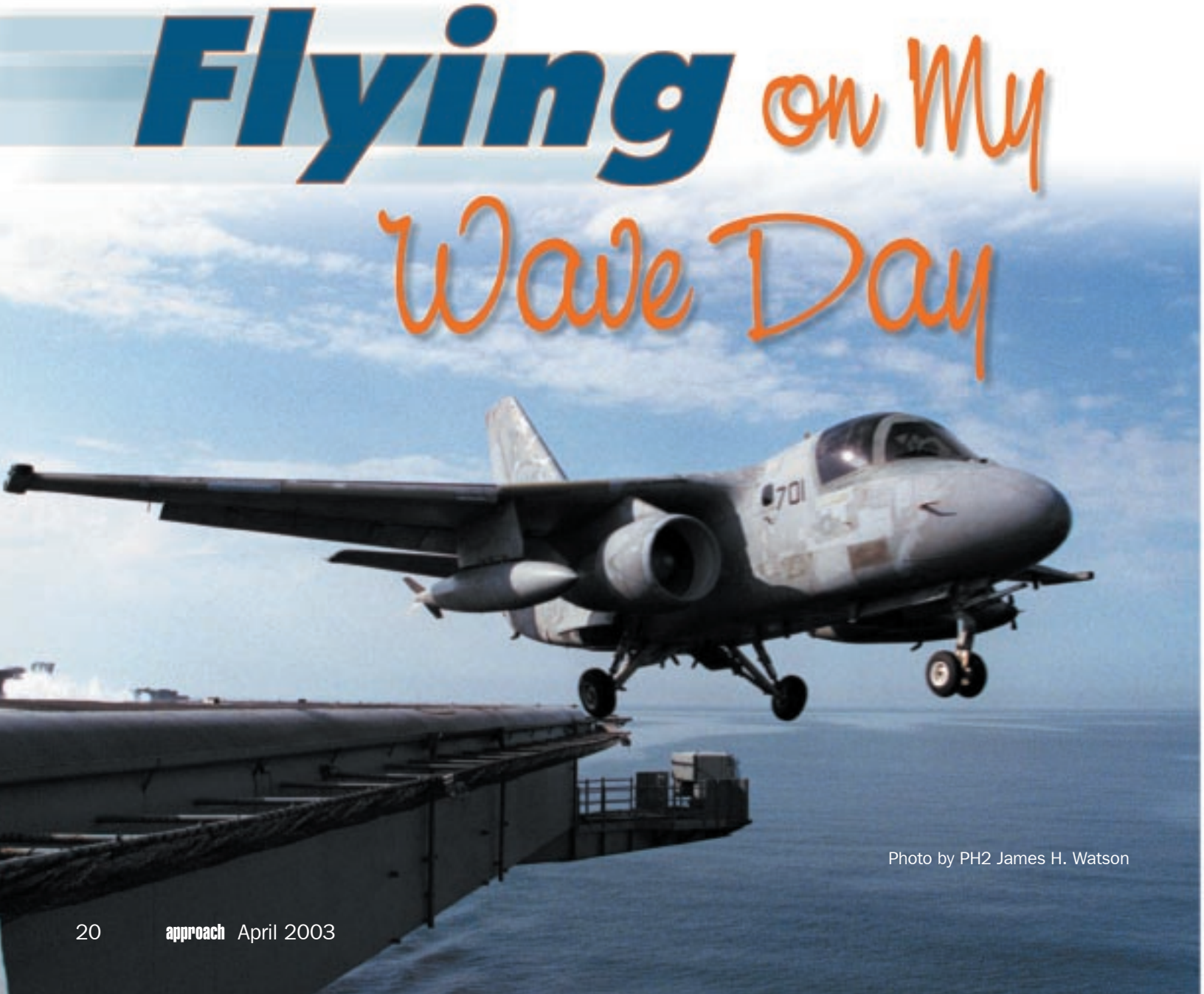


Photo by PH2 James H. Watson

pitot-static instruments and the good old peanut gyro, which already was starting to precess.

Before I go on, I need to mention it was our first day of blue-water ops, and the nearest divert was 400 miles away.

On the flip side of the problems, the weather was awesome. Who needs an AHRS when you've got the biggest attitude source in the world working for you?

I was a short cycle FCF and didn't have any gas in my drops. The bleeds fail closed with a complete electrical failure (yes, the air conditioner had cut out and it was getting hot), so even if I needed to, I couldn't get gas out of my drop tank or buddy store. I know NATOPS allows taking an arrested landing with any amount of fuel in the externals during an emergency, but, to the best of my knowledge, it had never been done before. Fortunately, I wasn't going to be the first guy to try.

I had given a CV NATOPS brief a month earlier on NORDO procedures around the boat. "OK, guys, not that you'll ever have to do anything as antiquated as this, but these are the procedures for communicating with the boat if you're NORDO," was how I had started my brief. Well, they didn't have to—I did.

I remained dirty—not that I had much choice—and flew close aboard the port side of the boat with my hook extended. My tower rep later told me the boss's first reaction was to ask why the idiot in the Hoov was making a dirty flyby. About the time I started rocking my wings overhead, the light came on, and the boat started to make a ready deck. My COTAC, bless him, had pulled out his PRC-90 and had tried to talk on guard frequency. It didn't work, but I give him points for resourcefulness.

Once the LA cleared, and I noticed the other jets in the pattern turn on their dumps, I decided to set up for my straight-in. Believe me, I was ready to come aboard. The heat in the plane brought out the Hoov's distinct aroma, and the lack of pitch trim started to wear out my arms.

I had to get rid of 2,500 pounds of gas for max trap, so I had my COTAC pull the dump handle and start his clock. Without power to the fuel indicator, we didn't have a way to monitor how much fuel we were dumping. The Viking dumps about 1,400 pounds of gas per minute. At that rate, we would be below max trap in two and a half minutes and still would have plenty of gas for a dirty bingo. I hadn't touched the gear handle or flaps after the shot, and, therefore, reasoned the gear and flaps still were down. If not, we were betting paddles would wave us off.

I selected emergency brakes and set myself up for an extended turn off the abeam. It was going to be a no-AOA approach. After consulting the charts and estimating our fuel weight, we came up with an airspeed equivalent and started down. My COTAC gave me airspeed calls, and I picked up the ball at a mile and a half. I guessed at the distance since we didn't have DME. We got "cut lights" and came in for an uneventful trap.

Round two of the goat rope started once we got on deck. Up to this point, the deck wasn't sure what kind of problem we had. They reasoned we were NORDO, but, beyond that, and for good reason, they didn't have a clue. I got the standard "hook up" and "fold your wings" signal from the yellowshirts. It wasn't until my rightseater held up a "no electrical power" sign that the tractor came over and towed us out of the LA. I kept glancing at the brake accumulator to make sure it was charged fully, but it worked as advertised, and we were chained down.

I yelled to my COTAC, "I've got it, and fire off the APU," as I climbed away from the water.

The maintainers concluded the loss of all electrical power was a single-point failure in the system where the cannon plug connects with the back of the electrical-control panel.

Looking back, I realize a couple of things. Good CRM procedures are essential. Off the cat shot, I kept the jet flying away from the water and conveyed this to my NFO, and, although we had to yell at each other, we communicated what the other was doing. Also, his backup made a no-AOA, no-trim, no-yaw, or no DLC approach a lot easier.

Finally, I know it's been said before, but a firm grasp of CV NATOPS saved the day. Once we assessed the severity of the problem, we fell back on these procedures and didn't have to come up with some "out of left field" idea to get the plane back on deck. Some of these procedures might seem a little old, especially for aircraft with lots of generators and radios, but they're simple and have worked since my skipper was an ensign and had all his hair (we're talking eons ago).

Lt. Bissell flies with VS-21.

Let's Get Ready

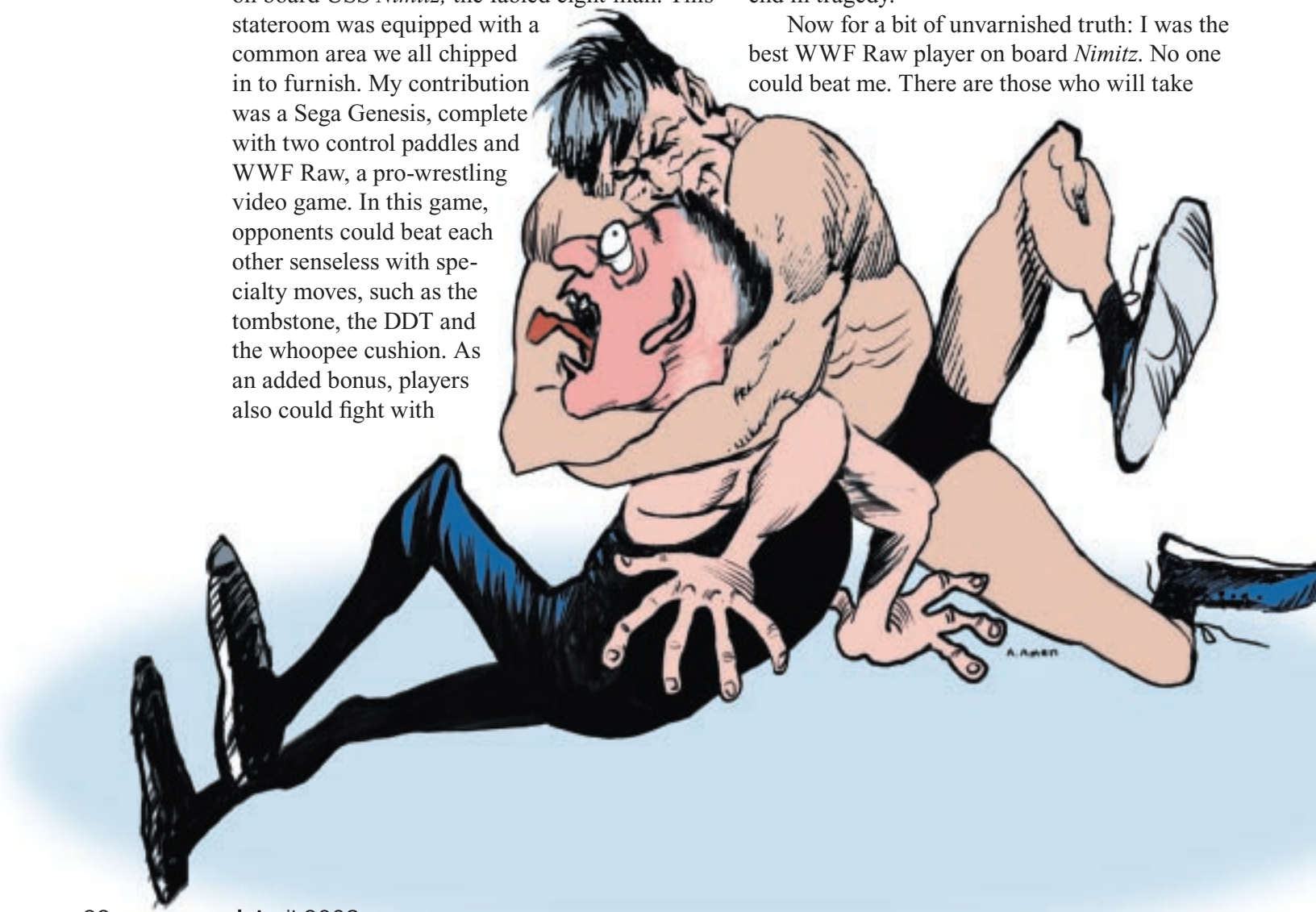
By LCdr. Will Mackin

Competition among squadronmates has long been a tradition in naval aviation. Debates over who is the best ball-flyer, who gets the most sleep, and who eats the most dog, can be traced to the origins of our profession. Competitiveness since has become part of our nature, an attribute, which, at its best, provides the fuel to drive us to our loftiest goals, but, at its worst, can lead astray our better judgment.

My story begins in compartment 03-64-8-L on board USS *Nimitz,* the fabled eight-man. This stateroom was equipped with a common area we all chipped in to furnish. My contribution was a Sega Genesis, complete with two control paddles and WWF Raw, a pro-wrestling video game. In this game, opponents could beat each other senseless with specialty moves, such as the tombstone, the DDT and the whoopee cushion. As an added bonus, players also could fight with pails, folding chairs, and sections of crowd-control fence. Life in the eight-man was a lot more fun, thanks to WWF Raw.

During the first weeks of cruise, 1 v 1 brouhahas on the Sega were nonstop. The entire squadron JOPA was involved. We played during deafening flight ops and evening prayer. We even played while sucking rubber at GQ. The natural byproduct of playing this hysterical WWF Raw was a healthy, competitive spirit. Little did we know we were headed down a path that would end in tragedy.

Now for a bit of unvarnished truth: I was the best WWF Raw player on board *Nimitz*. No one could beat me. There are those who will take



to Rumble

issue with that statement, but don't listen to them. Better yet, tell them to write their own article.

As CVN-68's crown champion of WWF Raw, I took on all comers. The most tenacious challenger was a fellow lieutenant I will call Brand X. He was the product of a division III school in beautiful, downtown Schenectady, N.Y., where he played football. I imagine he played by flinging himself around on special teams.

Although I handily could defeat him at the temple of WWF Raw, Brand X occasionally would succeed in throwing me out of the ring, then, by some trick of faulty programming, prevent me from reentering. The result would be what the WWF Raw instruction booklet refers to as a "time out," not a victory per se but more like an official interruption in play. Anyway, the fact Brand X was able to throw me out of the ring in the first place made him the second best WWF Raw player on board *Nimitz.* He therefore, was, my nemesis.

What began as competitive banter between Brand X and me at the Sega, soon degenerated into idle threats made elsewhere. We talked trash at chow, insulted each other's moms via sound-powered phone, and published disparaging POD notes. With Brand X and me locked in mortal combat, the rest of the JOs chose sides. Amazingly, over half of them—bleeding hearts mindlessly drawn to the plight of the underdog—backed Brand X.

Fast forward to Hong Kong, our first port call. After catching a late liberty boat ashore, I arrived at the squadron admin to find the place curiously devoid of furniture. A band of giggling JOs was on the balcony. Before I could say booby trap, Brand X came at me with a flying pipe. A cheer rose from the balcony. I ducked the pipe, then, grabbing Brand X in midair, I administered a suplex-to-pile-driver combo. The balcony fell silent. Flummoxed by my onslaught, Brand X got up slowly. Then he stumbled backward, tripped over someone's backpack, and broke his ankle.

Sissy anklebones and cheesy Sega play aside, Brand X was good people. He was part of the glue that held our squadron JOPA together. So, the day after our match was a sad one. We all gathered on the quarterdeck to wave goodbye, as Brand X rode his crutches down the brow, headed home. After his untimely departure, squadron morale never was the same.

Little did we know we were headed down a path that would end in tragedy.

The tragedy here is not that Brand X got hurt, or that squadron morale took a hit. It is that we allowed our competitiveness to override our common sense. Although my story is less serious than others, it shares a common bottom line. Had we recognized where we were headed, a loss could have been avoided. When someone bets he can do a lower flyby or a sharper clearing turn, or crack a pail over your head 20 times in a single round of WWF Raw, try to stifle your competitive instincts. Rather than up the ante, offer to settle the matter like adults: rock, paper, scissors, best out of three wins.

LCdr. Mackin flies with VAQ-142.

So Much for My Good Deal

By Lt. David Riley

It was my third flight after receiving an upgrade to E-2C aircraft commander, and I started the day with a rare single-cycle mission. We were controlling a unit-level training, self-escort strike. I was in the left seat, and the recovery was expected to be Case I. Life couldn't get much better.

To be honest, my mind dwelled more on the five-hour, night-OEF mission I had waiting for me upon return, rather than the mission at hand. My brain instantly was recaged during the catapult when my aircraft had a bearing failure in the port generator.

In the past, a bearing failure wasn't a significant problem. The generators have a secondary-bearing design that allows the crew to complete their mission before the generator requires maintenance or fails. However, recent bearing problems often had led to catastrophic generator failures and subsequent engine failures. The pucker factor went up a bit, and we decided the prudent course of action was to bring home the airplane at the first opportunity.

Instead of proceeding on our mission, we entered the overhead stack at 5,000 feet, standard E-2C low holding. We tried to talk the air boss into letting us land after the launch was complete. Because it was the first launch of the day, the aircraft spotted on the deck nullified this option, unless the ship did an emergency pull forward.

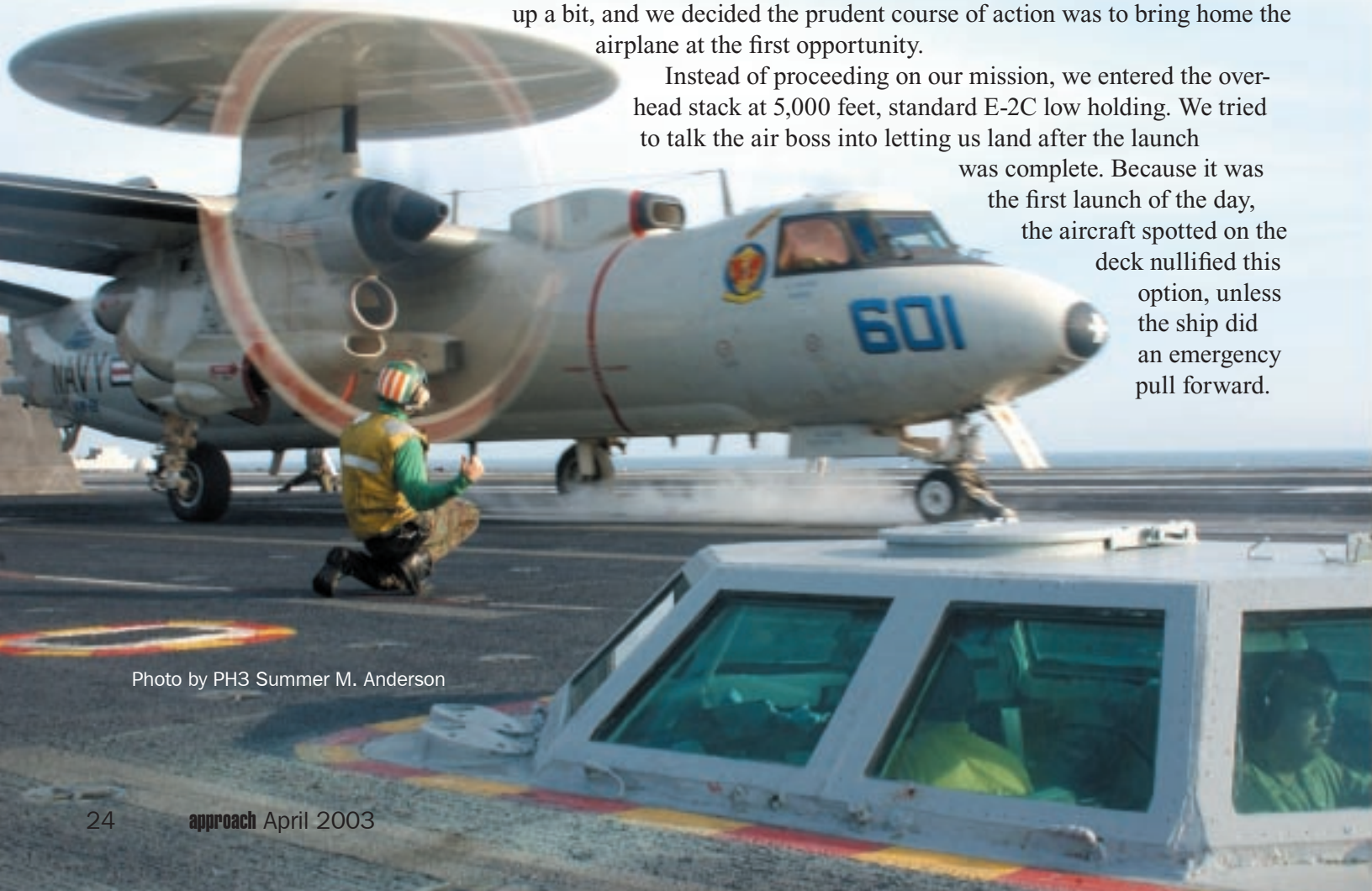


Photo by PH3 Summer M. Anderson

After talking to the skipper over the radio, we adjusted our plan to land first during the scheduled recovery, an hour and a half later.

Fortunately, the generator held. We entered the break rather gingerly—not wanting to press our luck—and rolled into the groove, with everything looking good.

Right at the in-close position, I felt a little settle–it had to be the burble–so I added a little power. Subconsciously, I thought I heard a pop, and the airplane just didn't feel right. More importantly, the power addition didn't stop my little settle. The controlling LSO came over the radio with a power call, and all I heard were the voices from the peanut gallery on the platform screaming for me to wave off. The power hit the firewall as the controlling LSO echoed the peanut gallery's opinion, and the happy lights flashed in my eyes. Round and round we go.

As I leveled off at 100 feet and started climbing away, something still didn't feel right. Normally, the Hawkeye has an amazing climb rate down low. Today, it just wasn't impressive. I wondered if the high heat was the cause, as I scanned my engine instruments. The port engine was putting out only half its usual horsepower. I leveled off at 600 feet before pointing out this problem to the copilot. We watched as the horsepower started dwindling, and the turbine temperature started going through the roof. Our situation was not looking good.

Paddles was kind enough to tell us our port motor had produced a large volume of black smoke before he decided to give us another trip around the pattern. Well, there goes at least a little weight off my shoulders—I wouldn't be getting a waveoff on the greenie board. However, I still had a sick motor to deal with.

I was at 600 feet, dirty and turning to downwind. I had to bring the left power lever back to idle to keep the motor within temperature limits. Because I didn't want to start a fire, that's where the lever remained with one problem: The propeller was windmilling, and my energy state was deteriorating as quickly as the engine was. Max power on the one good engine and 120 knots also meant I quickly was running out of rudder. I knew my right leg soon would get tired. It was time to take care of this problem: We needed to shut down that motor.

Concerned about my controllability and energy state, I quickly said the first two steps of the engine shutdown (no fire) procedure before I announced my intention to the crew. We weren't all on the same page. I had been so busy fighting the airplane to keep it airborne I had forgotten to mention to the crew I was running out of rudder, and my max airspeed only was 120 knots. When I finally told the crew, we agreed on my course of action: Shut down the engine, turn to final at two miles, and take a straight-in. I was so busy concentrating on putting the airplane dead on centerline, without any unreasonable glideslope deviations, that my copilot had to remind me to throttle back when the 2-wire brought us to a halt.

Thus ended my first, single-engine, E-2, carrier-arrested landing, and, as could be expected, the learning points were many. While I was worried about the controllability of my aircraft and its energy state, I had forgotten the easy solution to the problem. Because I already had added all the power that was safely available, I should have raised my gear. It would have given us ample controllability and time to discuss the situation in a much more relaxed atmosphere. I had overlooked a simple solution and it could have led to disaster.

My brain instantly was recaged during the catapult when my aircraft had a bearing failure in the port generator.

While I was fighting with my airplane, I forgot about the crew inside. Sure, the old axiom recommends aviating first, navigating second, and communicating third. However, in the E-2C and other crew-oriented aircraft, internal communications are as important as the monkey skills. In this case, effective communication with my crew would have had us all on the same page and would have cut the sweating time in half. I can't wait until the next time to see if the lessons take. Well, then again…

Lt. Riley flies with VAW-121.

Photo by Matthew J. Thomas

Early

By Lt. Kyle Meer

With 187 days down and two days left on our SAR detachment on board USS *Wasp,* we got tasked one last time. The mission was to ferry the admiral between ARG boats off the coast of North Carolina for a little grip and grin and, then, return him home to Norfolk. The pilot was a new HAC on his first logistics mission, and I was the copilot. I was a senior HAC on the cruise and looked forward to a stress-free, fun flight.

The flight was shaping up to be a logistical circus, but nothing a couple of seasoned H-46 bubbas couldn't handle. The weather was iffy, and the flight planning included several detours for fuel. No one was excited about flying home early, just to turn around and fly back to the boat for two more days.

The first leg from the LHD to the LSD was uneventful, but, because of heavy rains and reduced visibility, the HAC decided to remain on the deck while we waited for the admiral to conduct his business. Once he was back on board, we called for breakdown, cleaned up the aircraft for takeoff, and pulled into a hover. As I pulled power, one of the admiral's staff noticed smoke briefly had spit from

Homecoming

the No. 1 engine exhaust and mentioned it to our crew chief, an AD2. The crew chief investigated and said it must've been steam burning off from pooled-up rainwater. We continued the 20 miles to Moorehead City, N.C., where we dropped off the admiral and were told to return in an hour after refueling at Cherry Point.

The flight to and from Cherry Point had us weaving in and out of low clouds and picking up an SVFR clearance. It made for exciting flying, but, by the time we got back to Moorehead City, the skies were blue, and the sun was shining. We picked up the admiral and his staff and headed north to Norfolk. Again, on takeoff, the staff member saw smoke, and, a few minutes later, the crew chief and I noticed a burning smell for a split second. Neither one of us spoke up, dismissing it as a whiff of exhaust almost as soon as it went away.

We continued to Norfolk, while the crew relaxed and enjoyed the flight. Everything seemed to be going according to plan. The only hang-up was the navigation chart got sucked out the window somewhere over North Carolina; fortunately, we were in a familiar area. Roughly two hours later, we dropped off the admiral at the designated LZ and picked up the local-course rules for entry into NAS Oceana. The plan was to get gas at Oceana, then fly the beachline back to N.C. and the ship. After refueling, we stopped by base ops to pick up a new chart and the requested Special V for departure.

About 15 miles south of Oceana, ATC called and asked if we could assist them with a search for an H-53 that had a precautionary emergency landing to the north. Always willing to help out, we acknowledged the call and turned around. We were used to being flexible and began replanning our fuel and timetable en route to the datum. Once on scene, we set up a search pattern and quickly found the H-53 resting comfortably on the fairway of the 11th hole of a local golf course. We radioed the location to ATC, as we turned back to Oceana for more fuel.

At that moment, we glanced at the gauges for a quick ops-normal and found things weren't normal. The No. 1 engine's oil pressure was fluctuating plus-or-minus-20 psi. Since plus-or-minus-three psi is the acceptable limit, we were concerned and investigated.

After double-checking the remaining gauges up front and conducting a leak check in back, we concluded it must be an electrical problem. How does engine-oil pressure get so far out of whack without evidence of a leak or any secondaries? The HAC and I agreed our safest bet would be to get the bird checked out at our nearby home squadron before making the 120-mile flight back to the ship.

The fluctuations didn't seem to get worse, but, when we descended into the heliport, I saw the fluctuations corresponded to power inputs. When the maintainers hooked up a direct-reading gauge, we knew we were done. Sure enough, on shutdown, the No. 1 oil tank nearly was empty.

During the course of our five-hour flight, oil had been seeping slowly into the exhaust duct and burning off. If we had decided to push back to the boat, we would have found ourselves in a much worse situation: single engine, in bad weather, in the middle of nowhere. I remember once discussing the theory of engine-oil emergencies and disagreeing that pressure fluctuations indicate immediate, impending failure. Looking back, we realized how fortunate we had been.

> The flight was shaping up to be a logistical circus, but nothing a couple of seasoned H-46 bubbas couldn't handle.

The lesson of the day was that a new experience always can teach you something. Just because you've never seen it before or think you know the problem, it's never a bad idea to land and check it out. Instead of learning the hard way, we landed and got to see our families two days earlier than expected.

Lt. Meer flies with HC-8.

Wet & Wild in San Diego Bay

By Lt. Curtis Macready

I was sitting in the ready room, briefing for my second good-deal fam flight in as many days, when the unexpected happened: We had a mishap. Actually, the aviation safety officer walked in unannounced and told my copilot and me that we were the lucky participants in a squadron pre-mishap drill. This drill was in conjunction with the squadron's SAR jumps scheduled for later that afternoon. Our flight was cancelled, and the fun began.

We went downstairs to the paraloft to grab the training AIRSAVE vests we would use swimming. They were loaners from the MCAS Miramar water-survival school. We picked up the rest of our gear, including cranials (instead of our flight helmets) and neoprene booties (to replace our flight boots). We then jumped in the white van for a quick drive down the Silver Strand to Naval Amphibious Base, Coronado, and boarded a boat to take us to our "crash site" in the middle of Glorietta Bay, just off NAB.

We inflated our AIRSAVE flotation vests, jumped in the balmy 64-degree water and awaited pickup. We were simulating going in the water, wearing what we normally would wear on a flight over water at that temperature. So, we didn't have any wetsuits, dry suits or aramids. I was prebriefed to have a back injury and to be a little incoherent—I was ready to play the part. My copilot had a PRC-149 (on loan from the Wing) he used to communicate with a squadron helicopter en route from NAS North Island. The copilot talked the helo to a position right on top of us.

Swimmer deployment went without a hitch, and, soon, my copilot was hoisted into the back of the helicopter. I was surprised, however, by how much water the aircraft kicked up in the form of spray and waves. The spray was so intense it leaked into my cranial goggles. With the saltwater running into my eyes, I was blinded. I couldn't wipe my eyes because, if I removed the goggles, my situation would get much worse. Life was difficult for me—the unfortunate guy still in the water, waiting for a pickup.

When it was my turn to be hoisted, the rescue swimmer came down the wire, swam up, and assessed my situation. I pretended to be incoherent as the script outlined, so I purposely was not much help. I let him know my back was injured, so he called for a litter, or backboard, to immobilize me for the ride up the rescue hoist. It seemed like an eternity, but, actually, the process went very quickly. It took only seven minutes to haul me into the back of the helicopter.

Things got interesting during those seven minutes. Because I was using a training-flotation device, not prefitted to my body, I floated lower in the water than I normally would. The rescue swimmer worked through his procedures for strapping me into the litter. The second strap he connected went over my chest and across my biceps, securing my arms to my sides. I no longer could tread water on my own, and the water level was at my chin. So those waves I mentioned earlier became drinking water for me. I was bobbing up and down, my mouth and nose in and

Photo by PH2 Darryl I. Wood

out of the water, trying to time my breaths to avoid inhaling water. Keep in mind, I still could not see because of the stinging saltwater in my eyes. After I tired of this little game, I managed to bend my arms upward to grab and pull the AIRSAVE lobes. My body then floated higher in the water, which eased my drinking problem.

The swimmer finally secured all the straps and signaled for the pickup. At that moment, the helo drifted behind me, so the litter cables draped off the right side of my body and connected to the rescue hoist behind me. Can you guess what happened next? After the pickup signal was given, and the crew chief began hoisting, I flipped 180 degrees, which wouldn't have been bad if I was vertical in the water. However, 180 degrees from being on my back put me facedown in the water with my arms by my side, completely unable to right myself. My dilemma lasted for what seemed like an eternity, but actually was about five seconds. It's funny how being unable to breathe seems to make time slow down.

The crew chief kept hoisting, and the litter managed to right itself, allowing me to take a much-needed deep breath. What a nice feeling! I then felt a series of bumps, which I later learned was just the rescue hoist jerking. As it became quiet, I opened my eyes and saw I was under the helo, moving up. After yet another time vacuum, while dangling helplessly from a small cable and strapped immobile to a board, I arrived at the cabin door. It took a few fruitless tries to receive me feet first before the crew chief finally pulled me headfirst into the cabin.

It was an interesting experience—one I wouldn't recommend, unless you need it to save your life. Most importantly, the squadron got a real-world opportunity to test the new AIRSAVE vest and PRC-149 radio. Meanwhile, the copilot and I gained a new perspective on rescues from the wavetop level. As a helicopter pilot, the eye-opener I would like to emphasize to other pilots is to keep the aircraft well away from the swimmer and survivor so you help them out. The rotor wash really can be a hindrance.

Lt. Macready flies with HS-4.

It's funny how being unable to breathe seems to make time slow down.

"That's Not Supposed to Happen, Sir"

By Lt. Nicholas Brandt

Another typical IMC winter day in Souda Bay, and ops had scheduled us to fly a six-hour mission in our trusty EP-3. Because it was a short mission, I left behind the 2P so he could study, so it was just the 3P and me. The 3P was on his first squadron detachment, but he just had come off a SERGRAD tour, and he almost had as much flight time as I did. It was his turn to land, so he remained in the left seat. After a quiet, morning mission, keeping the world safe for democracy, we looked forward to the afternoon off.

ATC cleared us direct to the Souda VOR and down to 11,000 feet. My 3P just had started a power-on descent to quickly get us there, when I heard two other aircraft, a P-3C and a Greek airliner, contact approach from positions closer to the airfield than us. I anticipated getting slotted number three for the approach, and, because we were in no hurry to enter holding, I told my copilot to throttle back. We entered IMC as we descended through FL140. Things got interesting as we leveled off at 11,000 feet and copied our holding clearance.

We still were popeye as we hit 11,000 feet. All of a sudden, a loud "bang" shook the mighty Aries II, followed by the worst aircraft vibe I'd ever felt. As I slammed the power levers forward to initiate climbout, I thought, "Oh my God, we just mowed down a mountain goat."

The 3P also pushed up the power; he suspected windshear. All four cherry lights illuminated, indicating max power and then some. The flight engineer, who suspected control-surface damage because of icing, shouted, "Sir, we need to get on the ground, now!"

It nearly was impossible to hear each other over the vibration, even with ICS at full volume. It took only a few seconds to climb to 12,000 feet, where we leveled off to assess the situation. After a few seconds of thought, I realized we possibly couldn't have struck a mountain. The highest peak on Crete is only 8,200 feet, and we were at least 20 miles from it. What else could have happened? While we pondered that question, I declared an emergency and received clearance to commence the VOR-DME approach to Souda Bay.

As certain disaster loomed, it was time to think, and quickly. NATOPS contains a warning about significant airframe vibration, combined with propeller-pump lights or external-fluid leaks, doesn't it? But, we didn't have any lights or leaks. All our engine instruments tracked normally as we moved the power levers, and rpm was 100 percent across the board. However, NATOPS also states that airframe vibration may be accompanied by vibrations in the power-lever and/or e-handle. We felt each in turn, but they all rattled at about the same level. The entire plane seemed about to shake itself apart.

We still were at least 10 minutes from landing, and the vibration was getting worse. We were desperate to find something we could turn off to make it stop. If we couldn't stop it, I wasn't sure we'd make the runway in one piece. The SEVAL (the senior NFO in the EP-3) coordinated the aft observers to check the wings. While up front, we again looked for fluid leaks on the nacelles. I saw no leaks on the starboard wing, but something else caught my attention. The No. 3 propeller was spinning oddly, wobbling like an off-balance washing machine.

I told the flight engineer about the prop and called for an emergency shutdown of No. 3. Without hesitation, he shouted, "Check me on No. 3."

"You have three." I replied, completing the required confirmation to shut down an engine on a P-3.

The vibration stopped immediately, but it seemed to take an eternity for the prop to stop spinning; I soon saw why. Three of the blades had feathered normally, blade edge to the wind, but one was angled flat, like a speed brake. By this time, we had commenced the approach, the calamity had stopped, and the plane seemed eerily quiet.

Control was no problem. Rather than perform a seat swap to the left seat, which would have involved sticking a non-pilot in the seat while IMC during an emergency, I flew the approach from the right seat. We broke out of the clouds on final, at 3,000 feet, and made an uneventful three-engine landing. As we taxied to the ramp, a cast of maintainers gathered in force. They all pointed and smiled at the unfeathered prop blade. More than once I heard, "That's not supposed to happen, sir." Well, maybe not, but I had a date with the flight doc to remove a seat cushion that told me otherwise.

We were fortunate the emergency happened close to the airfield, and we already had completed the approach checklist. The 24-man crew had set condition-five for landing and had strapped into their seats.

Hamilton Standard, the manufacturer of the propeller, reported only one other similar incident. It had happened on an Air Force C-130, which uses the same engines as the P-3. In that case, the propeller separated from the engine. Had we been any faster or higher, the same fate would have befallen us. When propellers depart P-3s, they tend to do a lot of collateral damage, severely limiting the aircrew's options. Had this problem occurred in the middle of a long mission, neither the prospect of landing in hostile territory nor a forced ditch would have seemed appealing.

We also learned a few things. Our NATOPS has undergone continuous refinement for 40 years, and, as they say, it is "written in blood." Its preface will tell you that procedures are only guides to action, "…not a substitute for sound judgment." NATOPS can't possibly cover everything that can fail on an aircraft, especially an older plane like the P-3. Increasingly, we see malfunctions and emergencies NATOPS doesn't address. When something unusual happens, take stock of everything you can, both inside and outside the aircraft. The specific malfunction and the situation may require modification of NATOPS procedures. You won't always be in as favorable a position as we were when the unexpected happens.

Lt. Brandt flies with VQ-2.

As I slammed the power levers forward to initiate climbout, I thought, "Oh my God, we just mowed down a mountain goat."

The Rest of the Story

By Cdr. Don Braswell

A safety incident report details the sequence of events for a ramp strike a Cat I nugget had the second night of CQ. But, several events that occurred after the ramp strike also should be mentioned. A lot of good, quick decisions were made that prevented further mishaps.

Before the nugget was clear of the ramp, the LSOs, AirOps, and the tower asked for a dirty bingo for the FA-18 to North Island. The man with the answer to their question that night was a fleet-experienced lieutenant in CATCC. He immediately broke out the PCL and helped the nugget get on the correct profile. The lieutenant did his job by the book. CATCC had more help available than the lieutenant needed, but no one jumped in—no one needed to. The lieutenant figured the nugget barely had enough fuel to fly to the field, with almost no reserve for a night or an instrument approach.

Immediately after getting the nugget on the correct flight profile, he checked the landing procedures for suspected bad landing gear. Again, he went by the book.

Fortunately, another experienced lieutenant also was airborne, joined on the damaged aircraft, and used his probe light to inspect the landing gear. He correctly assessed the damage to the main landing gear. He and the lieutenant in CATCC then came to the right conclusions and gave the nugget his best chance at a safe field landing. The nugget landed with 1,000 pounds.

Back on the ship, the air boss had put the other nuggets into the delta pattern, while flight-deck personnel did a combat FOD walkdown. The walkdown results were bad: 40 to 50 small pieces of metal were all over the flight deck. All the turning jets on the deck were shut down, and the airborne jets were diverted. Because the primary divert had a fouled runway, the jets were sent to the secondary divert. CATCC did a great job of diverting these aircraft, full of nuggets, to an unfamiliar field in the middle of the night. End of story.

You may ask, "What's the big deal?" There was none, but, sometimes when we read *Approach*, we forget how much we do right every day and how quickly we respond to emergencies. In this scenario, the right people in the right places made the right decisions. A misstep in any of the above procedures, and the SIR would have been a lot longer. It's a tribute to the way we do business that this incident was almost a "routine" emergency. That's the rest of the story.

Cdr. Braswell is the XO of VFA-25.

Photo by PHAN Janice Kreischer

Classic BROWNSHOES IN ACTION COMIX

"The kind real aviators like"

Contributed by Lt. Ward Carroll

"We met Cloudman, and he gave us some great weather tips . . ."

"Mom got to ride the helo dunker a few more times than the rest of the family . . ."

"Dad got a little silly in the altitude chamber. The Flight Surgeon said it was hypoxia . . ."

Ready Room Gouge

The engine is the heart of an aeroplane, but the pilot is its soul.

— Sir Walter Alexander Raleigh

www.safetycenter.navy.mil