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COVER—Crewmen aboard the Brazilian carrier *Minas Gerais* perform maintenance on the starboard engine of an S-2E *Tracker* during *Unitas XXV* operations. Photo by JOCS Kirby Harrison.

## Features



## Departments




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"Flying South to Unitas" is a story written and photographed by *NANews'* award-winning JOCS Kirby Harrison, while on special assignment with ComSoLant to cover the Silver Anniversary of this South American naval exercise series. Harrison says, "It was an adventure." Page 4.

Vice President George Bush flew bombing missions in VT-51 TBM *Avengers* during WW II in the Pacific and earned the Distinguished Flying Cross. He describes it as a "sobering experience," beginning on page 12.

Hank Caruso, and his *Seabirds,* went to Pensacola to be jolted in the "boom bucket," laundered in the helo dunker and pulled by "lotsa G's" to see what it takes to become a Naval Aviator. He was impressed with his "View from the Back Seat." Page 16.

May 10, 1972, was the day Lt. Randy Cunningham and Ltjg. Willie Driscoll became the Vietnam conflict's first and the Navy's only aces. A lot has changed since that day, but they both still agree that the "Training Paid Off." Page 20.

Fleet readiness squadrons have a big job that requires the best from the bottom to the top. That's why we've decided to give you an eyewitness "Glimpse of VS-41." Page 22.

This time we've got proof that it's good for a Naval Aviator's career to have a subspecialty. In Part II of our career development series, we discuss the Education and Training Management and Operations Analysis subspecialties, beginning on page 27.

# STATE OF THE ART

### BQM-126A Missile Target

Beech Aircraft Corp. has been awarded a contract to develop the U.S. Navy's new BQM-126A missile target. The BQM-126A is a turbojet-powered subsonic target. Recoverable and reuseable, it features extensive use of composite materials and is easily adaptable for either ground or air launching. The Navy will operate the new target to simulate the flight of threat aircraft and cruise missiles, and train both pilots and crews. It will also be used in developing and evaluating new weapons systems. Developmental flight testing will be conducted at the Pacific Missile Test Center at Point Mugu, Calif.

### Hellfire Missile for SuperCobra

An initial contract has been awarded to Bell Helicopter Textron for installation of the *Hellfire* missile system in the U.S. Marine Corps' AH-1T+ *SuperCobra,* which is an improved version of the AH-1T already operational with fleet marine forces.

### New Bombing System

Extensive environmental testing of the AN-TPB-1D, the Marine Corps' new ground-controlled, precision, radar bombing system, was completed at the Pacific Missile Test Center, Point Mugu, Calif., last summer. The system was tested for operation in virtually any climate by subjecting it to arctic temperatures as low as minus 65 degrees F. and to desert temperatures as high as 150 degrees F. It was also exposed to monsoon rains of four inches an hour and tropical relative humidity of 91 percent in 140 degrees F.

The new radar system is capable of automatically acquiring and tracking designated aircraft by means of radar skin or beacon track, and providing accurate position data to an integrated tactical digital computer. The computer uses this data, together with target, ballistics and meteorological information, to generate guidance commands which are transmitted to the pilot via the aircraft's navigation system or by radio.

### S-3 Auxiliary Power Unit

The Navy has awarded a contract to the Lockheed-California Company to incorporate an increased capacity auxiliary power unit (APU) into the S-3A *Viking* fleet. This should make the carrier-based, ASW aircraft fully self-sufficient for its on-deck power requirements, without having to rely on carrier deck power. It will also enable a quicker response to mission requirements.

The new APU, instead of being used primarily for engine starts, will provide full electric power for ground check and maintenance, plus pneumatic power for increased cooling, which will improve avionics reliability. Its commonality with other units which share similar components will reduce avionics maintenance costs. It is not planned to use the APU in flight except for emergency main engine starts and as a source of standby electrical power if one of the main generators fails.

### Hush House

A new facility to muffle the noise created by AV-8B jet engine testing is under construction by McDonnell Douglas Corporation. The *Harrier II* uses rotating engine nozzles to direct engine thrust downward for vertical or short landings. Nozzles are positioned straight back for level flight. The exhaust system in the new "hush house" is designed to vent the aircraft's engine exhaust at any nozzle angle between these extremes. The structure will incorporate concrete, stainless steel and sound-absorbent material to allow 24-hour operation without annoyance to nearby residential communities.

### P-3A Orion

PH2 Garry Rice

A specially configured P-3A *Orion,* shown in photo, is undergoing final demonstration tests at the Pacific Missile Test Center. It has been equipped with the extended area test system (EATS) airborne instrumentation station, which will permit collection of data in the outer sea test range beyond the limits of ground-based instrumentation. The most visual difference in the exterior configuration of the aircraft is the large, phased-array telemetry billboard antenna mounted just forward of the vertical stabilizer. When operational, this aircraft will give the Pacific Missile Test Center a unique instrumentation and data collection capability not available anywhere else in the world.

### Night Attack AV-8B

The U.S. Navy has awarded a design definition contract to McDonnell Douglas Corporation for a night attack version of the Marine Corps AV-8B *Harrier II.* Modifications being considered include a forward-looking infrared system, night vision goggles and changes in cockpit lighting. The forward-looking infrared system provides a video picture of the ground ahead of the aircraft to help the pilot locate and attack ground targets at night. Night vision goggles, similar to those used by infantry troops, will permit the pilot to see ground targets outside the infrared system's field of view.

# Grampaw Pettibone

### Toxic Tango

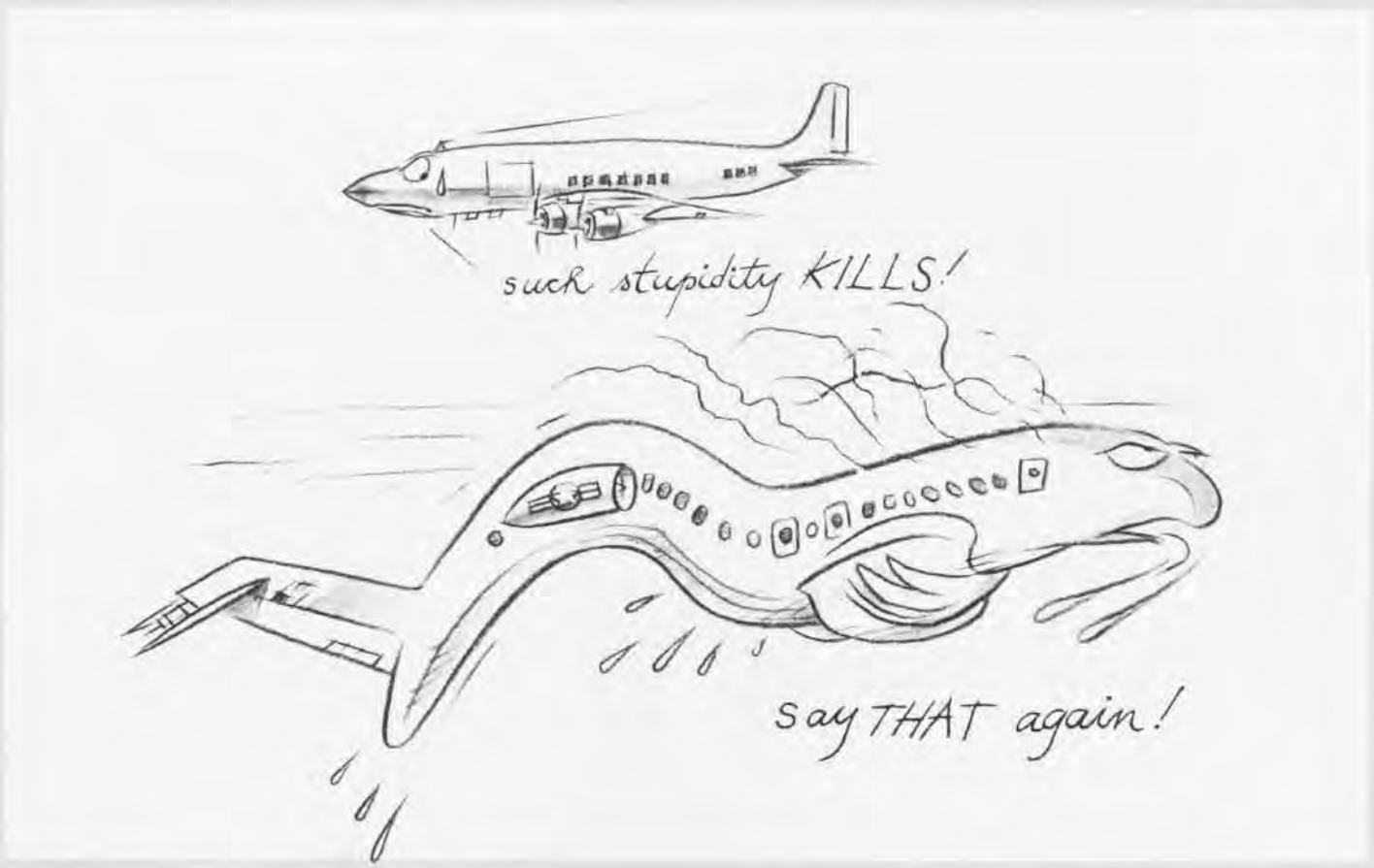
Pack-up for a two-week deployment was handled by junior members of the squadron. A "filler and bleeder" unit full of Coolanol (fluid for cooling radar units) was packed in a conex box.

A hollow plug vice one-way check valve was incorrectly installed in the unit. Contents of the box were not thoroughly checked by a supervisor or a cargo certifier. The box was loaded upright on a pallet and flown from NAS West to NAS East aboard a C-118.

The unit was not used during the deployment, remained in the conex box and was loaded, on its side, in a C-9B for the return trip, once again by junior personnel. It was not properly inspected during this evolution either. On board the C-9 were 45 passengers and over 11,400 pounds of cargo.

Ten minutes into the flight, liquid seeped from a pallet. The crew radioed ground personnel who advised that the substance was probably Coolanol. A determination was made that it was non-hazardous. The liquid spread aft under passenger seats. Personnel began sopping it up with rags. The substance produced a strong odor and was eye-irritating. Cabin crew and passengers complained of nausea, headaches, light-headedness and weakness. The pilot decided to return to the starting point. Shortly, a flight attendant wiping up the spill was overcome by fumes and passed out. A passenger also fainted.


The pilot declared an emergency, oxygen masks were deployed, and the crew went through the cabin smoke or fume elimination checklist. The cabin was depressurized at 10,000 feet. Fume removal and supplemental oxygen gave immediate relief to all hands. The flight attendant and passenger awakened. Forty-five minutes after takeoff the C-9B was safely back on the ground. Crew and passengers were examined by medical personnel and released. The "fill and bleed" unit was examined and found to be drained of its contents (about 3/4 of a gallon). The aircraft was cleaned and the cargo scrutinized. The flight departed next day without further incident.






ILLUSTRATED BY Osborn

Grampaw Pettibone says:

Sufferin' swamp gas! I'm tellin' ya, ladies and gents, unless we turn up the interest level on the handling of hazardous materials, disaster is as certain as the sun settin' in the west. Airborne, toxic exposure incidents are on the rise.

Accountability and knowledge of NAVSUP 505 and related directives are the keys to prevention. Fumes will knock you out. Petroleum distillates can harm skin and eyes.

Heaven help us if a gas spill, or the like, meets up with an ignition source!

Even if cargo is signed for by a plane crew, squadron or unit personnel are not absolved of the responsibility for proper packaging. Senior personnel must be involved and be held accountable for their actions. I gotta sinkin' feelin' that there are too many cavalier attitudes out there in Naval Air when it comes to handling toxic-type stuff. One C.O. put it right, "Hazardous cargo incidents can be likened to a game of Russian roulette. You may spin the chamber of the pistol, pull the trigger 100 times and all you'll get is a click. But on the one hundred and first trigger pull. . . ."

### Faulty Formation

A flight of five *Phantoms* was holding between cloud layers at 2,500 feet for a flyby. (One was an airborne spare.) The aircraft were to make the formation pass at 800 feet. Weather at the flyby point was 1,000 feet overcast, three miles visibility, the prebriefed "go/no go" minimums.

The flight leader elected to examine weather firsthand, briefed his flight to maintain their holding position and broke away, entering clouds at 1,500 feet. He located clear airspace at 600 feet with 3 miles visibility. As he climbed to rejoin his flight, Lead talked to ground control and the decision was made to cancel the flyby due to weather.

At 2,500 feet, Lead spotted the four *Phantoms* to his right. He summoned them to join him as he turned left. Number Two, with Number Three on his left wing, flew to the inside of Lead's turn to begin a CV rendezvous. Number Two lost Lead as each flew either side of a small cloud, pulled up and reduced power to ensure safe separation. Two's speed bled off to 200 knots.

Upon recontact, Two lowered the nose and accelerated to 300 knots. Number Three was observed to be a bit acute, at Number Two's nine o'clock, when Two initially pulled up. Three then slipped back four plane lengths into a sucked position.

Shortly, Number Four *Phantom*, on the outside of the turn, inadvertently entered a cloud layer, made an adjustment and regained VFR. Seeing this, Lead asked if Four had a problem. This transmission directed the attention of Number Two's RIO away from Number Three on his left. When he looked back, he couldn't find Three. After fruitless transmissions, Lead descended, searched and discovered signs of a crash. There was, apparently, no ejection attempt. The pilot and RIO were killed, the aircraft destroyed.

Study of the wreckage indicated the *Phantom* struck the water in a nose-high attitude, flaps down, with the starboard engine at 89 percent, afterburner engaged, and the port engine between 70-73 percent, nozzle full open, 1,800-2,100 pph fuel flow. These latter parameters are consistent with a stalled or stagnated engine.

Grampaw Pettibone says:

I'm mad! I'm sad! Another case of bad headwork and pressin' on that backfired, tragically. Number Three probably stalled the aircraft and/or the left engine tryin' to maintain position on Lead and ran out of recovery room. The vital problem, though, was failure by Lead and the Section Leader to maintain adequate rendezvous speed. They got too slow! The decision to gather up the flight in marginal VFR conditions, when there was clear sky above the cloud layers, made matters worse. The wingman got backed into a box he couldn't get out of.

Sure, weather was a factor. But the bottom line was sound airmanship, or lack of it.

# UNITAS XXV

## A SILVER ANNIVERSARY

# Flying South

**Story and Photos by JOCS Kirby Harrison**

*Unitas,* to borrow from the Navy's recruiting slogan, is more than just a job. It is an adventure. It is a four and one-half month long naval exercise, that begins at the Naval Station, Roosevelt Roads, Puerto Rico. It extends southward via the Panama Canal, down the west coast of the continent, through the inland waterway that is part of the Strait of Magellan, and then up the east coast of South America where it ends in Recife, Brazil.

*Unitas* is an appropriately named naval exercise, from the Latin meaning "unity." It is described by Rear Admiral Clinton Taylor, ComSoLant, as the key element in providing a stable basis for common defense in the hemisphere. It is one in which for 25 years the U.S. and South American participants have learned to work together in a visible example of hemispheric solidarity.

*Unitas XXV* was the silver anniversary of this annual exercise and included in the planning almost every aspect of a major training exercise, from antiaircraft to amphibious operations. In almost every phase, Naval Aviation played a major role.

Along with the five U.S. ships that provided the nucleus of the *Unitas XXV* fleet, there were several U.S. Naval Aviation nucleus units which participated throughout the entire exercise. Ready at the start of training in Roosevelt Roads were Patrol Squadron 8's detachment from NAS Brunswick with two newly acquired P-3C aircraft; a detachment from Helicopter Anti-Submarine Squadron Light 32 out of NAS Norfolk with an SH-2F helo embarked on the *Unitas* flagship *Thorn*; a C-118 and crew from Fleet Logistics Squadron 46 out of NAS Atlanta, with a plane specially configured for *Unitas*; and a Fleet Composite Squadron 6 detachment embarked on the U.S. guided missile frigate *Talbot* to provide remote-controlled target drone aircraft for gunfire and missile training.


**Above, an S-2E Tracker is waved off as another aircraft is towed forward aboard the Brazilian aircraft carrier Minas Gerais. Trackers from the carrier played a major role in antisubmarine operations during the Brazilian phase of Unitas XXV. Top right, five S-2E Tracker aircraft pass over the Unitas fleet. Bottom right, flight deck crew members dash to safety after removing tie-down chains from a helicopter aboard the carrier.**

# to Unitas

The wings of *Unitas XXV* had taken to the air almost from the moment the exercise began with training exercises in Puerto Rico. A Colombian C-47 had arrived with a contingent of Colombian Marines to participate in the amphibious operations on Vieques Island. Three UH-1 *Hueys,* in gray and red, flew off the three sleek Venezuelan frigates, and two white and blue B-105s were off the two Colombian frigates. During missile launches off the coast of Puerto Rico, Fleet Composite Squadron 8 flew out of Roosevelt Roads to recover drone aircraft, and throughout the two-week preparation for departure of the fleet the squadron provided almost continuous service with its SH-3 helos and C-12 fixed-wing aircraft for transport of visiting dignitaries and equipment.

Beginning in Puerto Rico with strike sorties by A-7 aircraft flown by the Puerto Rico Air National Guard, every phase of *Unitas XXV* involved antiaircraft defense against shore-based, high-performance jet aircraft. There were Mach 2+ *Mirage 5s,* quick and highly maneuverable F-5Es, Canberra bombers, and AT-26 *Xavante* attack jets. After one low-level attack by a flight of *Mirage 5s,* an officer on one of the ships remarked, "When those guys came blasting by at 400 knots, I could have sworn I saw a rooster-tail kicked up by the guy that was down 'on' the water. It was very realistic training."

Even U.S. Army aviation had a role in *Unitas XXV* as UH-1 helicopters from the 210th Combat Aviation Battalion flying out of Rodman, Panama, practiced cross-decking exercises on *Unitas* ships. Cross-decking occurred in every phase of the exercise, with U.S. and South American pilots trading places in one another's aircraft and going through the process of landing and taking off from various ships. AE1 Jerome Richardson, assistant crew leader for the HSL-31 det, noted that in all the navies, hand signals by the flight deck crewmen were almost identical, which simplified the procedure.

Throughout *Unitas XXV,* there was a constant exchange of ideas and information as U.S. Naval Aviators visited with South American aviation units and hosted their counterparts aboard U.S. Navy aircraft. In Brazil, P-3C pilots enjoyed a visit to the Brazilian Air Force in Salvador, inspecting some of the F-5 aircraft that had played a role in "strikes" against the *Unitas* fleet.

All three U.S. Naval Aviation units agreed that the most difficult aspect of the four and one-half month deployment was the logistics involved in maintenance. It was especially so for the HSL-32 detachment. In a four-week period, the crew pulled four engines and replaced

Left, a U.S. Seasprite passes over the USS Iowa on a photo mission prior to a full broadside by the battleship. Above, a Colombian B-105 helicopter is backlighted during a flight over the Unitas fleet.

Above, the Brazilian ship Minas Gerais, the only aircraft carrier in Unitas XXV, sails en route to Salvador, Brazil, on the final phase of the exercise. Right, two Peruvian Mi-6 helicopters circle over the landing zone during amphibious operations at Point Salinas, north of Lima.


Left, flight deck crewmen "man the rail" as the Brazilian carrier Minas Gerais enters port in Salvador, Brazil. Above, a P-3C from VP-8 passes over the Unitas fleet during operations off the coast of Uruguay.

three of them, at one point cannibalizing from one to repair another. In that same time span, they also replaced a main rotor blade and main gearbox. It was especially frustrating, said crew leader AEC Bill Templer, since the same helicopter, with some of the same crew, had broken flight-time records off Lebanon less than a year earlier. "Even with all the problems, we still had slightly more than 300 hours in the air, and that was only 50 hours less than the SH-3 from *Unitas* last year," noted Templer with no little pride in a maintenance crew that often worked round the clock.

The P-3C detachment had the longest pipeline of the Naval Aviation dets on *Unitas XXV,* stretching from the cool coast of Maine to the furthest point in the exercise, Punta Arenas, Chile, in the cold Strait of Magellan. Rotating aircraft and crews at two and three-week intervals, the det kept at least two and occasionally three *Orions* ready at any time.

One especially challenging exercise involved P-3C aircraft, working with the Peruvian submarine fleet, to form a patrol and defensive barrier against air or surface attack.

"We discovered the Peruvian submarine commanders were not only good, but were especially adept at finding the ocean layers that are so prevalent in these waters, and using them to mask their submarines' movements," said Lieutenant Commander Don Phillips, officer in charge of the P-3C detachment.

The award, if there were one, for the most miles flown by one aircraft and crew during *Unitas XXV* would certainly go to the C-118 and crew that totaled more than 44,108 miles of flight time. As a primary means of transportation for the *Unitas* band and advance planners, the plane's routes crisscrossed the South American continent, passing over the rugged Andes mountain range numerous times and flying far into the interior regions of every country. In Santiago, Chile, the crew took a day off from their sometimes hectic schedule to climb a hill outside the city. There, in the mist overlooking a green valley, they placed flowers at a marker in memory of a C-118 crew from VR-52 Det. Detroit who died when their plane crashed on takeoff in 1978. "It has become a tradition," said Lieutenant Commander Harry Gintzer,

A Colombian B-105 prepares for takeoff from NAS Roosevelt Roads, Puerto Rico.

Left, a U.S. Navy SH-2F helicopter from HSL-32 is caught in flight during anti-submarine operations.


An S-2E Tracker ascends to the flight deck of the Minas Gerais.

a C-118 pilot on the Chilean phase of *Unitas XXV*. "No one likes to think it might happen to them, but we all would like to think that if it did someone would remember."

Unsung heroes of *Unitas XXV* were the 11 men from VC-6 who maintained, and saw to the launching of, the turbojet target drone aircraft. The drone, capable of speeds up to 435 knots, was a realistic target for antiaircraft gunfire and missile training during the exercise phases. The detachment left the U.S. with 18 target drones aboard *Talbot*. Sharpshooting by the fleet, with gunfire and missiles, accounted for two drone losses. "It was a good cruise," says detachment chief ATCS Jon Gifford. "We had people from shore duty and sea duty volunteering to go. During the periods at sea, there is hardly time to get your breath, but the liberty was terrific. And one thing that made this cruise exceptionally good was the relationship we had with the ship's company. They really went out of their way to help us, and some of our guys even volunteered to help them chip and paint."

"*Unitas* is our longest detachment, and has the most pressure to go along with the high visibility," said VC-6 Executive Officer Commander Rich Richards. "In spite of that, we have no trouble getting people to volunteer for it."

Of all the annual naval exercises, *Unitas* offers what may be the greatest challenge, according to Lt.Cdr. Phillips, noting the length in terms of logistics and time, as well as the variety of flying conditions, coordination with the aviation arms of the South American navies and with surface elements of *Unitas*. "You come away from *Unitas* with a feeling of satisfaction and a feeling of confidence that there isn't much you can't handle," he added.

It is a feeling echoed by Lieutenant Commander Keith Jewell, officer in charge of the HSL-32 det. "You learn that part of that confidence comes from good preplanning and good backup by people in AirLant supply. When we needed something, AirLant filled the order, Air Force transport got it down here, and the C-118 brought it in on time." *Unitas* makes the slogan a reality. It is more than just a job. ■

# Vice President Bush Calls WW II Experience "Sobering"

By JO2 Timothy J. Christmann

Forty-one years ago, a 20-year-old Naval Aviator named George Bush embarked on a mission which he would later describe as one of the most dramatic moments of his life — an experience which gave him a "sobering understanding of war and peace."

"There's no question that it broadened my horizons," Vice President Bush said recently. "And there's no question that today it has a real impact on me as I give advice to the President."

It was September 2, 1944. Lieutenant Junior Grade George Bush was a pilot with Torpedo Squadron Fifty-One (VT-51) aboard the aircraft carrier *San Jacinto* (CVL-30), a light carrier which was deployed in the North Pacific.

Just two years earlier, on June 12, 1942, Bush had graduated from high school and joined the Navy as a seaman second class. But, in less than a year, he completed flight training at NAS Corpus Christi, Texas, was commissioned an ensign, and went on to fly TBM *Avengers* with VT-51. For a time, he was the youngest pilot in Naval Aviation.

On that sunny morning of September 2, Bush woke aboard *San Jacinto* prepared to fly one of the 58 attack missions he would fly during the war. However, this particular mission would end a little differently than his other 57.

The target was a Japanese radio station on ChiChi Jima, located about 600 miles southwest of Japan in the Bonin Islands. For a time, the enemy on that tiny island had been intercepting U.S. military radio transmissions and warning Japan and occupied enemy islands of impending American air strikes. It had to be destroyed.

Pilot Ltjg. George Bush in the cockpit of a TBM Avenger during WW II.

Before 0900, Bush and two aircrewmen (his regular radioman, Radioman Second Class John Delaney, and substitute gunner Lieutenant Junior Grade William White) strapped themselves inside an *Avenger* and catapulted off *San Jacinto*. Three other bomb-laden VT-51 aircraft, as well as a number of VF-51's F6F *Hellcats,* joined the mission.

"I was replaced by Ltjg. White at the last minute," said Leo W. Nadeau, then an ordnanceman second class who flew as Bush's gunner on all but two of his attack missions. "As intelligence officer, White wanted to go along to observe the island."

Nadeau, who was 20 at the time, added that the day before, Bush, Delaney and he had flown into ChiChi Jima and destroyed an enemy gun emplacement.

"The antiaircraft (AA) fire on that island was the worst we had seen," he said. "I don't think the AA fire in the Philippines was as bad as that."

"ChiChi was a real feisty place to fly into," Stanley Butchart, a former VT-51 pilot and friend of Bush, agreed. "As I remember, it had gun emplacements hidden in the mountain areas. In order to get down to the radio facility, you had to fly past the AA batteries, which was risky business."

A VT-51 TBM Avenger flies over Majuro Atoll in the Marshall Islands in 1944.

As expected, projectiles belched from the enemy's AA batteries as soon as Bush and his squadron mates were over the island. Tiny black puffs of smoke thickened around his plane as he approached the target and dove steeply — so steeply that Bush felt like he was standing on his head. But before he reached the radio facility the plane was hit.

Ltjg. Bush, who felt the plane "lift" from the hit, continued his dive toward the target and dropped his payload. The four 500-pound bombs exploded, causing damaging hits. For his courage and dis-

regard for his own safety in pressing home his attack, he was later awarded a Distinguished Flying Cross.

Bush maneuvered the *Avenger* over the ocean with the hope it would make the journey back to *San Jacinto*. But the plane began to blaze and clouds of smoke soon enveloped the cockpit. Choking and gasping for air, Bush and one of his aircrewmen wriggled out of the plane and leaped from about 1,500 feet. His other crewman, dead or seriously injured from the blast, went down with the *Avenger*.

Bush parachuted safely into the water, dangerously close to the shore. Unfortunately, the aircrewman fell helplessly to his death because his parachute failed to open properly.

"No one ever knew which one bailed out with Mr. Bush," said Nadeau, now a building contractor in Ramona, Calif. "I would assume it was Delaney, because as the radioman he would go out first to leave room for the gunner to climb down out of the turret and put his chute on. There wasn't room in the turret for the gunner to wear a parachute. As a gunner, my parachute hung on the bulkhead of the plane near Delaney. We set up an escape procedure where he was supposed to hand me my chute and jump, and then I was to follow him. The procedure took a couple of seconds."

Nadeau added that he "didn't know what to think" when he heard the plane was shot down.

"I felt bad that Delaney and Mr. White had died," he said. "I just had the feeling that had I been there Delaney and I might have both made it out alive – that is, unless one of us got hit by AA. Delaney and I had practiced our escape procedure constantly. He might have stayed to help White get out of the turret and delayed too long. It's one of those things that never leaves your mind. Why didn't I go that day?"

Vice President Bush said that he chose to finish the bombing run rather than bail out early because as a Naval Aviator he was disciplined to do that.

"We were trained to complete our runs no matter what the obstacle," he remarked.

Once in the water, Bush unleashed his inflatable yellow lifeboat, crawled in, and paddled quickly out to sea. The Japanese sent out a boat to capture him. Luckily, Lieutenant Doug West, a fellow VT-51 *Avenger* pilot, strafed the boat.

"He stopped it," said Bush.

Circling fighter planes transmitted Bush's plight and position to the U.S. submarine *Finback* (SS-230), operating 15 to 20 miles from the island.

**Light carrier USS San Jacinto underway off the U.S. East Coast in 1944.**

"This was 1944 and there were very few enemy targets left," said retired Captain Robert R. Williams, Jr., 73, who was *Finback's* commanding officer then. "So, the main reason for our being on patrol was to act as lifeguard and pick up aviators."

According to Lieutenant Commander Dean Spratlin, *Finback's* executive officer at the time, the submarine had an area of 200 to 300 square miles to cover, which included Iwo Jima, ChiChi Jima and HaHa Jima (in the Bonin Islands).

A few hours after transmitting Bush's position, Williams, then a commander, sighted him on the periscope six to seven miles away from ChiChi. He ordered the submarine to the surface.

"I saw this thing coming out of the water and I said to myself, 'Jeez, I hope it's one of ours,'" Bush remarked.

Spratlin, who is now in the real estate business in Atlanta, Ga., said he and Williams weren't worried about surfacing in daylight so close to an enemy island because they had several U.S. fighters flying cover.

"We had a big sub [292 feet long], so we rigged out the bow planes which gave us a platform where we could step down and pull him aboard," added Spratlin.

While several of *Finback's* crewmen were helping Bush aboard, Ensign Bill Edwards, the sub's first lieutenant and photographic officer, filmed the rescue. The 8mm film was later sent to Bush while he was a congressman from Texas, and was shown recently as part of a biographical sketch during the Republican National Convention.

Bush was taken inside *Finback* and the sub submerged.

"Once he was pulled aboard he was taken to the wardroom," said Thomas R. Keene, a TBF *Avenger* pilot from USS *Franklin*, who was shot down the day before off Iwo Jima along with his two enlisted aircrewmen. "It must have seemed like a dream to him. One minute he was all alone on the ocean, and the next he was on board a submarine being served food in a red-lighted compartment that had music playing on a record player."

"I thought [being rescued by the submarine] was the end of my problem," Bush said. "I didn't realize that I would have to spend the duration of the sub's 30 remaining days on board."

The following day, *Finback* retrieved Lieutenant Junior Grade James Beckman, a fighter pilot off USS *Enterprise*, who was shot down over HaHa Jima.

"We put Bush and the other four men to work as lookouts," Spratlin said. "Four hours on, eight hours off."

As lookouts, they helped make sure that enemy planes and submarines didn't

**Vice President George Bush visits the bridge of USS Ranger (CV-61) with VAdm. Crawford Easterling, ComNavAirPac, during a tour of the ship in 1983.**

sneak up on *Finback* during daylight or at night. The submarine did much of its patrolling on the surface in the daytime and always at night because that was when *Finback* recharged its batteries.

"Bush and the other aviators really got into the submarine experience," Spratlin remarked. "Every time an enemy plane would force us down, they'd curse it just like we did."

Bush said that the most beautiful time for standing watch was between 2400 and 0400. "I'll never forget the beauty of the Pacific – the flying fish, the stark wonder of the sea, the waves breaking across the bow," he remarked.

The 30 days aboard *Finback* weren't all beautiful, however. Some of the more dramatic moments included being depth-charged and bombed by enemy ships and planes.

"I thought I was scared at times flying into combat, but in a submarine you couldn't do anything, except sit there," he said. "The submariners were saying that it must be scary to be shot at by antiaircraft fire and I was saying to myself, 'Listen brother, it is not really as bad as what you go through.' The tension, adrenaline and the fear factor were about the same [getting shot at by anti-aircraft fire as opposed to being depth-charged]. When we were getting depth-charged, the submariners did not seem overly concerned, but the other pilots and I didn't like it a bit. There was a certain helpless feeling when the depth charges went off that I didn't experience when flying my plane [against AA]."

Besides being bombed and depth-charged, Bush was aboard when *Finback* sank two enemy freighters which were trying to get supplies into Iwo Jima a few months before U.S. forces invaded it. By war's end, *Finback* had received 13 battle stars and had sunk 59,383 tons of enemy shipping.

"It was obvious to me that Bush would be a very successful guy in whatever he decided to do," said Tom Keene, now a retired architect living in Elkhart, Ind. "He was always saying something to make us laugh. He kept up our morale."

A month after picking up Bush, *Finback* discharged her five passengers at Midway. Afterwards, the aviators were taken to Hawaii.

"We were supposed to stay at Hawaii for two weeks R&R," said Keene, who became good friends with Bush aboard the sub. "But Bush was concerned about what had happened to his crewmen, and he wanted to get back out to *San Jacinto*. So, we got a ride in a DC-3 and ended up at Guam. We stayed there a few days until we found out where the fleet was."

Once aboard *San Jacinto*, there were few people as happy to see Bush back as his gunner, Ordnanceman Second Class Leo Nadeau.

"I don't know what happened in officers' quarters, but down in enlisted quarters we had the ship's baker make a big cake with the words 'Your First Ducking' written on the top," he said.

Nadeau added that Ltjg. Bush had a lot of friends among the enlisted men.

"Mr. Bush wasn't one of your run-of-the-mill officers," he said. "Being an enlisted man, I couldn't go into officers' quarters and as an officer he couldn't go into enlisted quarters. So we'd meet quite often up on the flight deck by the plane. We'd always be checking our aircraft out. He would look his plane over, and I would look over the armament. We were both very conscientious about the work that we were doing." Once up on the flight deck, Nadeau said the two of them used to talk about most anything, including the women both of them would later marry.

As Bush's gunner, Nadeau said the two of them had some "scary moments" together. He added that one particular moment stands out among the others.

"It was in June 1944," he remembered. "Our plane was taxied to the catapult and tied down. We had to be catapulted instead of making a deck takeoff, because of our heavy load of ordnance. Once we were tied down, a Japanese air wave attacked *San Jacinto*. We couldn't catapult, however, because the ship wasn't into the wind."

While the carrier's guns traded rounds with the enemy planes, Bush, Nadeau and radioman Delaney sat in the *Avenger* with the engine running, praying they wouldn't get hit.

"It was hairy," Nadeau added. "Finally the wave went through. The carrier turned into the wind and shot us off. We scattered. We just wanted to get that bomb-ladened plane off the carrier. We were flying on pins and needles because we didn't know how many enemy planes were still up there.

"At some point we took a hit in the oil line, either from the Japanese when they attacked the ship, or from a stray projectile from the carrier's guns. The plane began spurting oil like mad," said Nadeau. "[Not long after leaving the ship] Mr. Bush came on the intercom and told Delaney and me to hold on because we were going down. Seconds later, he made a beautiful water landing.

"We got into a rubber lifeboat and Delaney and I started singing *Over the Bounding Main*," Nadeau laughed. "Mr. Bush turned around and said, 'You guys had better shut up or they're going to think we're having too good a time out here.'"

An hour later they were picked up by a U.S. destroyer, and returned to *San Jacinto* within five days.

"I can't say anything but good things about him," remarked Jack Guy, who was one of Bush's closest friends in VT-51. "In WW II we all felt we could

depend on George to do his job. We never had to say, 'Where's my wingman?' because he was always there."

Guy, who is now part owner of an investment business in Atlanta, Ga., added that VT-51 was a small, close-knit group.

"He [Bush] was an exceptionally good pilot," said Legare Hole, who was VT-51's executive officer. "He was a smart fellow who had his head screwed on tight."

"An aircraft carrier the size of *San Jacinto* could only hold nine TBM *Avengers* for VT-51 and 24 F6F *Hellcats* for VF-51. Out of the squadron's original 16 pilots, half were killed. Most of our work was to support the ground troops during landings," said Guy, who received a Navy Cross for scoring a couple of damaging hits on a Japanese aircraft carrier during one of the squadron's few night attacks.

VT-51 participated in seven major operations, including the Marianas, the Western Carolinas, Leyte Gulf, Iwo Jima and Okinawa, and made many strikes against the Japanese homeland. It is credited with sinking 17 ships, including the aircraft carrier *Zuiho.* In addition, it damaged the battleships *Nagato* and *Ise* and caused heavy damage to enemy shore installations amidst heavy antiaircraft fire.

During the squadron's fighting years, Stanley Butchart said that "we used to argue like a bunch of young kids as to whose turn it was to go on the next strike."

"I don't think any of us were really scared at the time," added Guy. "We were eager to go into battle. We were sold on the idea that Japan and Germany were our enemy and we couldn't wait to fly out and do our part."

"The cause was clear and there was a great feeling of camaraderie," said Vice President Bush. "There was a gung-ho feeling about the combat missions. But I must confess that there were twinges of fear."

Bush, who received three Air Medals by the time he was discharged in 1945, said, "There is no question that having been involved in combat has affected my way of looking at problems. The overall experience was the most maturing in my life. Even now, I look back and think about the dramatic ways in which the three years in the Navy shaped my life — the friendships, the common purpose, my first experience with seeing friends die. . . ."

Since leaving the Navy, Bush has stayed in contact with a number of his friends from VT-51. In fact, last September 2, 40 years to the day he was shot down, he had a reunion with eight of them at NAS Norfolk, Va.

"The 40th anniversary was great," said Louis Grab, who was a good friend of Bush's during the war. We [all squadron mates] have lost contact with each other over the years. As a result of our getting together in Norfolk, we've exchanged snapshots and are corresponding again."

"I had hoped that there would be some time in Bush's career when we could all get together," added Butchart, who spent 25 years as a test pilot for NASA. "I had a hard time thinking of him as Vice President. I just walked up and said, 'Hi, George.' Days later, he sent me a little note saying that the reunion was one of the highlights of his career."

During the reunion, Bush put on a leather flight jacket and climbed into a restored TBM *Avenger,* which had been sent to Norfolk for the event.

"The *Avenger* was a great, stable airplane," he said. "It was the easiest plane to land aboard the carrier. It was reliable and sound."

Bush, who is credited with 126 carrier landings and 1,228 flight hours, remarked that he's done only a "little bit of civilian flying" since leaving the Navy.

Nowadays, the former Naval Aviator said he is happy to have the pilots of Air Force Two fly him around the world as he fulfills his obligations as Vice President.

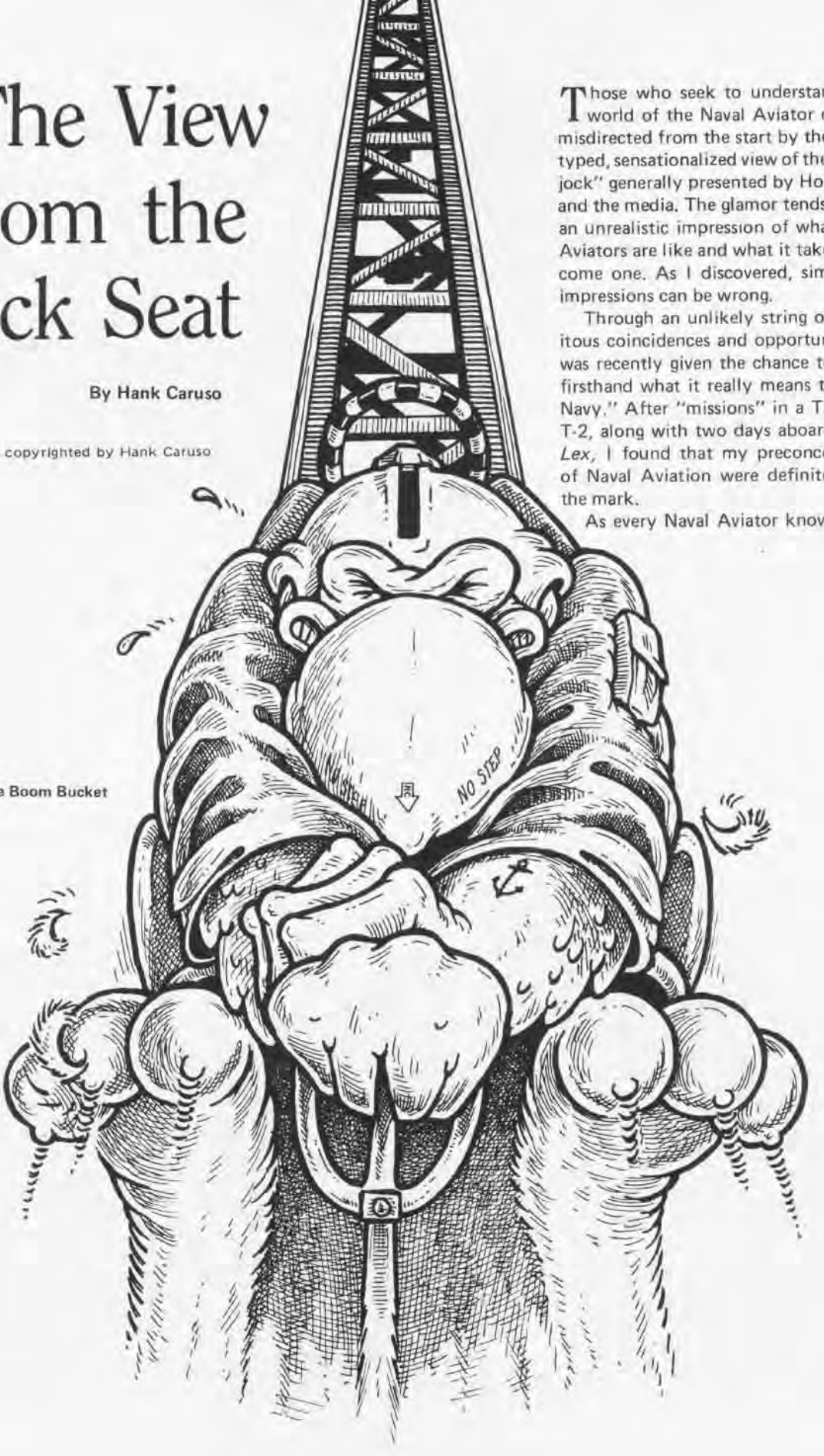
"They are A-1 pilots," Bush said. "But their wings aren't gold." ■

Appearing with George Bush, standing sixth from the left in this early VT-51 group photo, are (standing left to right): Stanley Butchart, second; Jack Guy, third; Louis Grab, fourth; William White, fifth; and Doug West, eighth. Legare Hole, then X.O. of VT-51, is seated sixth from the left.

# The View from the Back Seat

By Hank Caruso






The Boom Bucket

Those who seek to understand the world of the Naval Aviator can be misdirected from the start by the stereotyped, sensationalized view of the "fighter jock" generally presented by Hollywood and the media. The glamor tends to give an unrealistic impression of what Naval Aviators are like and what it takes to become one. As I discovered, simplistic impressions can be wrong.

Through an unlikely string of fortuitous coincidences and opportunities, I was recently given the chance to learn firsthand what it really means to "Fly Navy." After "missions" in a TA-4 and T-2, along with two days aboard *Lady Lex,* I found that my preconceptions of Naval Aviation were definitely off the mark.

As every Naval Aviator knows, you

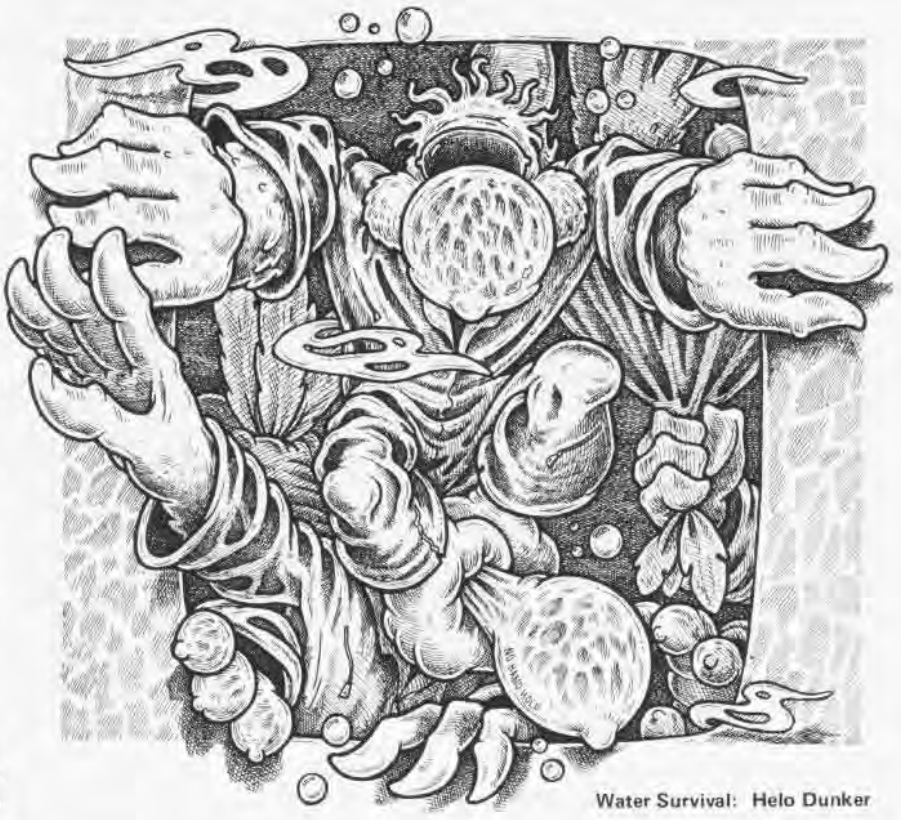
don't fly Navy without first enduring an intense program of flight physiology and water survival training. After the lengthy lectures and the ejection seat, altitude chamber and parachute harness drills, I spent close to seven hours in the pool at NAS Patuxent River learning how to coerce 40 pounds of unwilling flight gear through distinctly uncooperative water. Although immersed in my three-day training program, I became aware of major deficiencies in my concept of Naval Aviation. This part, anyway, was not very glamorous and not at all easy.

The enlisted personnel working under Lieutenant Carol Hassan at Patuxent River's Flight Physiology Department were top-notch. I found technical competence, genuine personal concern, exceptional patience and, above all, a degree of professionalism that the civilian world would be hard-pressed to better.

Hank Caruso is shown about to go aloft in the Blue Angels' TA-4.

They obviously enjoyed what they were doing. I was totally unprepared for instructors who gave priority to helping their students to succeed, which was unlike the attitude of many of my college instructors.

Every part of the program was oriented towards avoiding becoming a casualty. Somehow, at the time, "survival" and "not dying" didn't automatically seem to be synonymous. Survival has a much more positive sound. It wasn't until I received my ejection seat briefs on the flight line at NAS Pensacola that I began



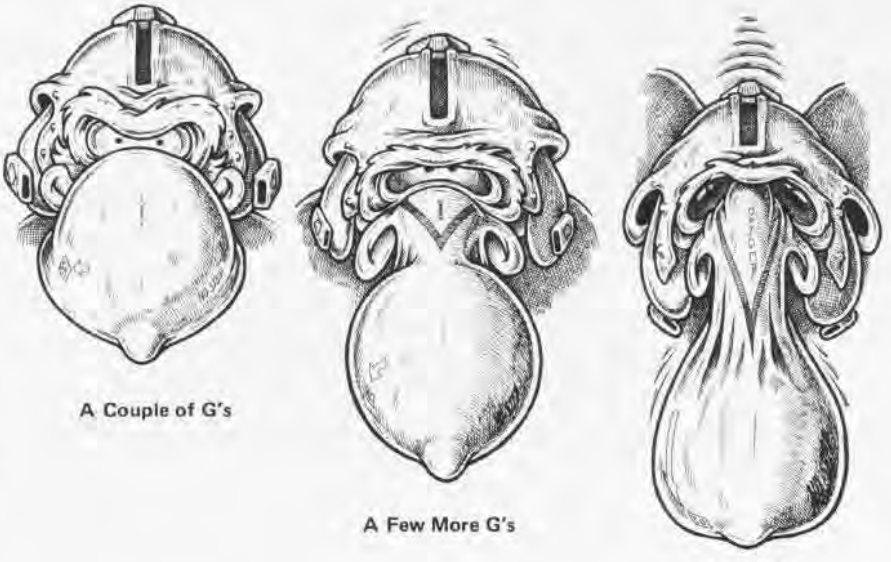
Water Survival: Helo Dunker

to realize how many different ways there are to "buy the farm" in operational flying if you didn't have all this training and experience. Recognizing hypoxia, quick egress during ground emergencies, proper position during ejection to avoid serious leg and neck injuries are all part of it and suddenly all the physiology training at Patuxent River took on a rather frightening new significance. All this stuff was for real!

Just as important was my realization that all of these risks are everyday realities for Naval Aviators and flight crews. While they may be relegated to the subconscious most of the time or compensated for by an apparent devil-may-care attitude with which he is often associated, it didn't seem that a Naval Aviator could ever forget the hazards that come with the job.

In trying to review all of the "what

Building "G" Tolerance



A Couple of G's

A Few More G's

Lotsa G's

**The swim test left a lasting impression on Hank Caruso which is reflected in his Seabird rendition on the next page.**

ifs" in my mind on the flight line just before my hops, I wondered how any emergency survival procedure could truly be instinctive if it had never been experienced firsthand and for real. And, if not instinctive, where was the guarantee of proper performance under pressure? The unsettling conclusion was that there is no guarantee. The only things for sure are the self-reliance and self-confidence that come with proper training and practice. If you don't sincerely believe in your own skills and abilities, if you don't have the assurance that you really are good, your hours in the sky are numbered. Unfortunately, the self-confidence that a Naval Aviator needs to survive can be easily misunderstood as ego-related. This inaccurate mental caricature, although narrow, seems to be the easiest for many to assimilate.

My next dose of education in Naval Aviation was the *Blue Angels'* TA-4 Number 7 under the capable tutelage of Lieutenant Commander Curt Watson. In spite of some startling moments, the loops, rolls and inverted maneuvers provided an exhilaration that I've never experienced anywhere else. I realized that, until then, the term "three dimensional" had been little more than an academic abstraction.

The forces that kept the aircraft flying also defined a unique framework of physical and visual references centered on the aircraft. The aircraft became a world unto itself with the pilot in undisputed control. It was easy to understand why Robert Lee Scott had relegated God to second in command in the title of his novel *God is My Copilot,* or how *High Flight's* John Magee could touch the face of God while earthbound mortals content themselves with the hands and the feet.

After my TA-4 experience, Lieutenant Commander Mike Rohman of VT-10 and I flew in a two-plane flight amidst the cumulus over Florida. And while the maneuvers were less difficult than during my TA-4 flight, the dynamic and tangible beauty of coordinated aerobatics was no less exhilarating. This, then, is the source of the irrepressible enthusiasm that the jet pilot invariably conveys to others when discussing his profession.

What is not obvious or generally brought out is the frequent physical and emotional stress that invariably accompanies these moments in the air. Only those who have been there can appreciate the physical punishment that high-performance jets can inflict on those aboard.

While the training prepared me to understand the forces and sensations that pilots and aircraft have to deal with, nothing in an earthbound classroom could have prepared me for what they actually experience and feel.

In my engineering work, I deal with the concept of G forces daily, but experiencing the sudden onset of five G's in a "routine" carrier break was something totally different! Again, the simplistic description that the pilot briefly weighs 900 pounds doesn't describe what is really happening.

G's do not act only at the body's center of mass, as the public relations narratives tend to imply. In the presence of multiple G's, cheeks tend to relocate themselves much lower on the face, hands and arms wrestle against invisible restraints and, most perversely, blood gets heavier and begins delivering more

**Physiology Training: Adventures in Hypoxia**

The Swim Test

So how does all of this tie in with the *Aerocatures* and the *Seabirds* that have appeared from time to time for the past four years in *Naval Aviation News?* Do I expect my artwork to change some misconceptions about Naval Aviation? Not really. I used to think they could, but now I'm convinced that most people will cling to their perceptions because they are easier to foster than the facts.

About all that I can realistically expect my artwork to do is help flight crews and aviation support personnel feel good about what they do, like the instructors at NAS Patuxent River who taught me things that may save my life some day. And that's really not such a bad goal to have. It certainly is small recompense for what they have contributed to their mission in Naval Aviation.

A few decades ago, Mother Nature and heredity conspired to prevent me from being a member of the military aviation family. However, I have had the privilege of being a house guest on several occasions and of taking part in family affairs to an extent I would not have thought possible a few years ago. And I'm finding that, even if I can't consider myself a member, it sure is one great family of which to be a friend! ■

oxygen to the feet than to the brain.

In spite of G-suits, the stomach muscles get a continual workout trying to keep the blood where it belongs while the neck and shoulders fight to keep the *Mark One Eyeballs* properly aimed. This is intense physical work, and it only compounds the already demanding task of piloting a complex aerospace vehicle in an environment fraught with natural and man-made dangers.

There are relatively few occupations in which seemingly minor oversights and errors can lead to a disaster. Of these occupations, even fewer require life-and-death decisions without hesitation, while under constant physical duress. And none of these require such a high degree of technical competency or the ability to unerringly outguess a highly trained adversary. It is difficult to understand how anyone given the facts could possibly regard Naval Aviators, and the ground support personnel on whom they must rely, as anything but professional in the highest sense of the concept.


*A special thanks to all the aviation physiology personnel, riggers and ground crew for their patience and assistance in preparing me to fly.*

*A job well done by a first class team.* *Hank Caruso*

# Training Paid Off for

*A lot has changed since Randy Cunningham and William Driscoll made history 13 years ago.*

*Cunningham, 43, is now the Executive Officer of VF-126 at NAS Miramar, Calif. And Driscoll, 38, works for a commercial real estate company in San Diego.*

*Both of them are busy men with hectic schedules. Still, they try to see each other whenever possible. Especially every May 10th.*

*"That's the day it all happened," says Cunningham, "the day we shot down three enemy planes and became the only Navy aces in Vietnam."*

It was a beautiful, sunny day in 1972. Lieutenant "Duke" Cunningham, pilot, and Lieutenant Junior Grade "Irish" Driscoll, radar intercept officer, were en route to the Hai Duong railroad yard in North Vietnam, in formation with 35 other Navy fighter and attack planes from the aircraft carrier *Constellation* (CV-64).

Their job, as flak suppressors, was to protect the slower moving light attack jets from antiaircraft artillery (AAA) and North Vietnamese MiG interceptors.

"For some reason the AAA was unusually quiet on this flight," Driscoll remembers. There were no enemy planes in sight either. So, they maneuvered high above Hai Duong while the A-7 *Corsairs* and A-6 *Intruders* dropped more than 30,000 pounds of bombs on the railroad facility. At some point during the attack, Cunningham swooped down and leveled a rail yard supply building with his *Rockeye*.

"As we pulled off the target four MiGs, which were a part of a larger group attacking the Navy planes, attacked us," says Cunningham. Their gunports were twinkling.

Cunningham veered left, maneuvered the *Phantom* behind one of the stubby, cigar-shaped MiGs and fired a heat-seeking *Sidewinder* missile. It blew off the tail and the enemy plane fell to the ground in flames.

"It happened in a matter of seconds," Driscoll says.

Careful to avoid the two pursuing MiGs, Cunningham flew into a steep vertical climb – a maneuver the trailing jets didn't follow. From higher altitude, Cunningham and Driscoll counted 22 attacking MiGs. Among them flew a surprised, but fighting Navy carrier attack force.

"The sky was real busy," Cunningham remembers.

In their more than 150 combat missions together, while assigned to the *Fighting Falcons* of VF-96, Cunningham and Driscoll had never witnessed such a large North Vietnamese air attack – especially over Hai Duong. Since the beginning of the war, Hai Duong had been a frequent target for U.S. Navy and Air Force bombers which, except for heavy antiaircraft fire, pounded it unopposed. In fact, the size of this particular enemy air attack was so unexpected that many Navy aircrews initially thought the MiGs were U.S. Air Force planes flying in to assist the Navy raid.

Worried about their fellow aviators, Cunningham and Driscoll flew down into the melee. They skillfully maneuvered behind another MiG and squeezed off a second heat-seeking missile.

"The guy didn't even know we were behind him," says Cunningham, who is now a commander.

Adds Driscoll, "The missile went straight up his tailpipe and exploded. The MiG burst into a bright red fireball."

By now, the sky was inundated with heavy machine gun fire and surface-to-air missiles (SAMs) from North Vietnamese antiaircraft batteries on the ground. The carrier aircraft, which had lost one plane to antiaircraft fire and shot down four MiGs, were in the process of returning to *Constellation*. All payloads had been dropped. The Hai Duong railroad yard was ablaze.

Cunningham turned the *Phantom* toward the Gulf of Tonkin, but a MiG-17 suddenly appeared ahead of them. It zipped by, gunports flashing. Cunningham pulled the *Phantom* into a 90-degree vertical climb. But, to his surprise, the MiG pilot copied the maneuver and eventually fell in behind the *Phantom*.

"We tried shaking him off our tail, but no matter what we did he stayed with us," says Driscoll. "That pilot really knew how to fly his airplane."

Later, Cunningham and Driscoll learned the MiG pilot was Colonel Tomb, reputed to be North Vietnam's leading ace with 13 American kills to his credit.

After three minutes of fast high-G maneuvering and steep vertical climbs,

**In 1972, Lt. Randy Cunningham, left, and Ltjg. Willie Driscoll became aces in the Vietnam War after shooting down five enemy aircraft.**

Tomb (who Cunningham and Driscoll guessed was running low on fuel) broke off his attack and attempted to flee.

"That was his mistake," says Driscoll, "because as he pulled away, we turned, put our nose on his tail and fired another heat-seeking missile."

The missile detonated just beyond the tail. Tomb's plane hit the ground and exploded.

Cunningham pointed the *Phantom* toward *Constellation,* then stationed 100 miles offshore. But, the lengthy five-minute dogfight (most lasted between 30 to 45 seconds) had taken them miles inland over enemy territory and more surface-to-air missile batteries. Minutes after destroying Tomb's plane, Cunningham noticed several SAMs flying up towards them. They managed to avoid a couple of them before one finally hit the *Phantom*. The jet shook violently and began to spin.

"I was never more afraid of anything in my life," says Cunningham. "The plastic bubble I had put around myself, which I felt was invincible, was shattered. My biggest fear was realized and I thought Willie and I were going to be prisoners of war."

The *Phantom* suffered massive hydraulic failure and its wing was aflame.

Cunningham nursed it as far as he could over the Gulf of Tonkin. When he was no longer able to control the jet,

# Aces in Vietnam

By JO2 Timothy J. Christmann

both aviators ejected and parachuted into the water, very close to the shore.

As they descended, Cunningham and Driscoll saw several North Vietnamese PT boats speeding out of Haiphong Harbor after them. Cunningham immediately called for help on his survival radio. Within minutes, several Navy aircraft appeared, sunk one of the PT boats and strafed the others until a U.S. Marine Corps helicopter from USS *Okinawa* (LPH-3) retrieved them 15 minutes later. They were taken safely aboard *Okinawa*. The ordeal was over.

On May 10, 1972, Cunningham and Driscoll (who together shot down a MiG on January 19 and another on May 8) celebrated a total of five enemy kills, the number needed to qualify as an ace. They also earned the distinction of becoming the first aces of the Vietnam war; first F-4 *Phantom* aces; first aviators to destroy three MiGs in one aerial battle; and the first all-missile aces (meaning all adversaries were shot down by *Sidewinder* missiles).

Today, Cunningham and Driscoll, who were two of the Vietnam war's most highly decorated aviators, are proud of their achievements. And they agree that without quality training, they would never have had their successes.

"The only reason I'm alive today is because of the training I received at the Navy Fighter Weapons School (Top Gun) in San Diego, Calif.," says Cunningham, who was a student at Top Gun in 1969 and later returned as an instructor in 1972. "At Top Gun I was taught to fight against simulated MiG aircraft and I flew between 200 to 300 air combat maneuvering hops against MiG-17s and 21s before I ever fought my first MiG driver. So when I went to Vietnam, I already knew how to handle the enemy. I didn't go in blind. I had an advantage."

Prior to the advent of Top Gun in 1968, the Navy had about a 2.5-to-one kill ratio over the North Vietnamese, according to Cunningham. "Once the fighter school was established, the Navy's ratio soared to 12 to 1."

Cunningham says that a large part of their success was because of the support of the men aboard *Constellation*, particularly the maintenance personnel who kept the planes flying. They were like family.

"I saw plane captains cry when their pilots failed to return after combat missions," he recalls.

After shooting down the first MiG on January 19, Cunningham says that a crewman jumped up on the *Phantom*, grabbed him by the shoulders and yelled excitedly, "Lt. Cunningham, Lt. Cunningham, we got our MiG today didn't we! Didn't we!"

In addition to training at Top Gun, Cunningham and Driscoll learned everything they could about the enemy and the enemy's aircraft. They also spent a lot of time studying fighter tactics, many dating back to WW I.

Aerial combat in Vietnam, however, was different than it was in previous wars. In WW II, for example, American aviators shot down hundreds of enemy aircraft. But, because the North Vietnamese launched few planes against U.S. forces during the eight-year conflict, Navy and Marine Corps pilots shot down only 57 MiGs.

In their combat missions together, Cunningham and Driscoll encountered enemy planes three times. And, each time, they shot down at least one.

"The major adversary we faced was the highly maneuverable, hard-to-shoot-down MiG-17," says Driscoll. "Four of our kills were MiG-17s and one a MiG-21, both supersonic fighters."

The two aviators say North Vietnamese pilots lacked training and knowledge of combat strategy.

"Most of the time, because of their Russian training, North Vietnamese pilots were taught to intercept, shoot everything they had and run," says Cunningham. "Col. Tomb was the rare exception to this type of strategy."

Although their aerial combat feats were the stuff Hollywood movies are made of, Driscoll says that being in the combat environment gave him a "tremendous gut-wrenching feeling."

"I call it the outer stratosphere of tension and anxiety," he adds. "The whole key was coming to grips with this feeling and making the fewest gross mistakes. Whoever makes the fewest mistakes usually wins."

Between the two of them, Driscoll talks least about the war.

"Most of my friends don't even know I'm an ace," he says. "It's not that I mind talking about my actions in Vietnam. I'm proud of what I did. It's just that I prefer not to.

"You have to keep in mind," he adds, "that a lot of the civilian world doesn't care about that sort of thing. They can't believe someone would rather be in the service flying jets instead of making money."

Cunningham and Driscoll joined the Navy not only because they wanted to fly jets, but because they felt obligated to serve their country.

"Americans were being killed and I wanted to do my fair share of the fighting," says Driscoll, who received a Bachelor of Arts degree in Economics from Stonehill College in Massachusetts, and a Master of Science degree in Systems Management from the University of Southern California.

Driscoll, who has more than 2,700 flight hours in the F-4 *Phantom* and F-14 *Tomcat*, left active duty in 1981 because he felt like he was getting "stale." He joined the Naval Air Reserve in 1982 and is now a commander with Fighter Squadron 301 in San Diego, Calif.

Before joining the Navy in 1967, Cunningham earned a Bachelor of Science degree and three master's degrees in Business Finance, Business Administration and Physical Education at the University of Missouri. He later coached high school swimming and helped groom 36 future All-American and three Olympic swimmers who went on to win gold and silver medals.

Today, Cunningham has more than 3,400 flight hours in 18 different types of aircraft including the F-14 *Tomcat* and F-15 *Eagle* and, unlike Driscoll, is making the Navy a full-time career.

"The Navy's given me everything I have," he says. "I can't think of a more professional organization I'd want to be associated with."

Both Naval Aviators enjoy the distinction of being the Navy's only two modern-day aces, but don't consider themselves heroes. Instead, Cunningham and Driscoll feel they are just two flyers who were able to overcome the anxieties involved with being in the aerial combat arena and to win.

"We did the best we could," says Cunningham.

In 1972, that was enough. ■

An S-3A from VS-41 prepares to take off from the squadron's runway at NAS North Island in San Diego, Calif.

## *The Aircraft, People and Mission...*

# A Glimpse at VS-41

**Story and Photos by JO2 Timothy J. Christmann**

It's a sticky 93 degrees at NAS North Island, Calif. – the kind of day when sweat beads across your brow and trickles down the middle of your back.

Some squadrons might be discomforted by the weather, but not the personnel at Air Anti-Submarine Squadron 41 (VS-41). They seem almost oblivious to it. Sure, they enjoy an occasional breeze from the nearby Pacific Ocean or the soothing comfort electric fans provide (they have few air conditioners). But, with or without a breeze, their workload doesn't slacken. The mission forbids it.

Located less than 20 miles from the Mexican border in San Diego, VS-41, as the only jet antisubmarine warfare fleet readiness squadron, has as its mission the training of pilots, aircrewmen and maintenance personnel in the multifaceted S-3A *Viking*.

The facility functions more like a college campus than a squadron whose specialties include stalking and destroying enemy submarines. It seems like almost everyone goes to school. Young pilots and aircrewmen go to learn how to fly the S-3 and operate its computer, sensors and weapons systems. And younger maintenance personnel go to learn how to fix and maintain the aircraft. All this learning results in the pilots, aircrewmen and maintenance personnel leaving VS-41 to man the fleet's 12 S-3 squadrons. The more skilled they are when they leave the RAG, the more reliable and proficient the Navy's S-3 squadrons will be in supporting the carrier battle group.

But there's more than just schoolwork ongoing at VS-41. While classes are in session, a large cadre of hard-working maintenance personnel spend 24 hours a day, seven days a week, keeping the outfits' 26 S-3As flying and flying safely – because, without the planes, no one can train.

Captain Dick Sanford is the man in charge of VS-41. He's a tall, thin, young-looking 42-year-old from Erie, Pa., who loves the Padres, Chargers, and the S-3 *Viking*. His shoulders square and blue eyes come alive at the mention of his favorite aircraft.

"The S-3A is a unique step forward," says Capt. Sanford, whose office is adorned with photos of the *Viking*. "It has the longest range (out of all the platforms in the carrier air wing) and the greatest endurance, is easiest to handle, and the equipment it has on board enables it to be a player in practically every major warfare area that the carrier battle group is involved in."

A former P-2V NFO, Capt. Sanford joined the VS community in 1974, following a tour as catapult and arresting gear officer aboard *Independence*. Since then he has commanded VS-21 and VS-41.

"I never regretted my decision to join the VS community," he says. "For an NFO, one of the most challenging missions is flying the S-3."

The F-14 *Tomcat*, F/A-18 *Hornet*, A-6 *Intruder* and A-7 *Corsair II* are all good aircraft which contribute to the battle group in their unique ways, but the S-3 has a broader range of applications, according to Sanford.

"It's a more utilitarian airplane," he says.

The S-3A, a twin turbofan jet, is equipped with the most efficient, general purpose digital computer ever used in an antisubmarine aircraft. And, its advanced acoustic and nonacoustic systems enable the aircraft's four-man crew (pilot, co-tac, tactical coordinator and sensor operator) to search the seas for hours for submarines.

Should an S-3A detect a hostile submarine, its crew can localize and attack it fast with depth bombs and torpedoes. The capability of the S-3A will be expanded with the introduction of the S-3B in the late 1980s. In addition to carrying updated radars, sensors and computers, the S-3B will support the antiship *Harpoon* missile, thus making the *Viking* even

more valuable to the carrier battle group.

"The S-3A's a tremendous aircraft," says Lieutenant Dean Baker, one of VS-41's more than 25 pilot instructors. "From a pilot's standpoint, it's very stable. In more than 1,600 hours of flying the S-3, I've never had one scare me. Its engines are redundant, so that if you lose one you can still fly the plane safely with the other. It's called the force multiplier because it can do practically anything. It can perform mining, anti-submarine warfare, over-the-horizon targeting, bombing, and long-range search missions. And by long-range, I mean more than 2,000 miles, a capability none of the other air wing platforms have."

Lt. Baker has been flying the S-3A for four years. He became an instructor in December 1983 and says he enjoys it. Most of the time he's either lecturing to a classroom of students or flying S-3s with them individually, either in the air or on the ground in simulators.

"Before a student flies in the S-3, he spends many hours training in simulators," says Baker, 28. "By the time he's finished training in simulators, he's more than ready to go on his first ride in the aircraft. Most of the aviators who come here have over 200 flight hours, so it doesn't take them long to master the S-3. They wouldn't have gotten this far if they didn't have the ability to comprehend what is going on."

VS-41 has a number of different types of trainers and simulators which are used to teach the mission capabilities of the S-3A. All of them are housed in a building adjacent to the squadron's hangar. The building is also where the pilots and aircrewmen are given classroom instruction and computer-assisted training.

Three of VS-41's simulators are replicas of the S-3's cockpit. They are multimillion-dollar devices which provide students the opportunity to test their skills in a full-motion, three-dimensional environment. With the turn of a dial, sophisticated projectors inside the simulators can create an illusion of land and sky.

For example, the simulators can be programmed so the students can simulate taking off and landing on North Island's runway or on a deployed aircraft carrier, either at night or during the day, in everything from clear conditions, like a starry night, to adverse conditions, like thick fog. They can also simulate virtually any emergency situation a pilot may experience, such as engine or hydraulic failure. The simulators are so true to life that they even sound like whining S-3s.

One of VS-41's many trainers where student aviators learn how to operate the S-3A.

"The training provided at VS-41 teaches pilots and aircrewmen all they have to know about the S-3A," says pilot instructor Lieutenant Lenny Duncan, 28.

"There is no way that anyone can be given a textbook and sent through an abbreviated syllabus here, and be expected to employ the S-3A the way it has to be employed," he adds. "Fighters, attack and electronic warfare aircraft are all relatively rigid in what they do — shoot other planes, move mud and jam electronics. But the S-3 does so many things that it takes time to acquire all the knowledge necessary to operate its systems."

Duncan, who served with VS-38 before coming to VS-41, adds that aboard the S-3A students have to be able to perform a variety of jobs.

"They have to be able to do them well," he adds. "Students also have to learn how to perform night carrier landings (which many have never done before coming here) and day and night in-flight refueling (after having spent only 20 hours in the airplane). For them, every flight is different. It's a real challenge," he says. "And I think its a compliment to VS-41 that it is able to train them so well and in such a short period of time."

Duncan, who has 1,100 hours in the S-3, adds that most of the students handle the pressure very well. "They study and do their homework," he says. "They have to if they want to make it."

VS-41 flies up to 10,000 hours a year and qualifies close to 200 pilots, tactical coordinators and sensor operators. Each receives about 95 flight hours, more than 800 hours in ground training, and more than 75 hours in simulators.

Says Lt. Baker, "As instructors, we strive to give students all the knowledge we can. We want them to do well. After all, we may be flying with them later in our careers."

Pilot instructor Lt.Cdr. Larry Buckler, left, discusses some last minute details with Lt.Cdr. Don Parcher, center, and Ltjg. Jim Wagner in a VS-41 ready room before a flight.

### FRAMP

Aviation Boatswain's Mate Hydraulics Second Class Bruce Perry says that many of the accidents he's seen in his six years in the Navy have been caused by people who weren't properly trained in safety practices.

"I've seen people break collarbones, noses, ankles, wrists and worse because of their own negligence," he says. "That's why I think it's important that people, especially maintenance people, know the aircraft and safety so they don't hurt themselves or others."

ABH2 Perry is currently in a position where he can influence a lot of S-3 maintenance personnel to be more safety conscious around the aircraft. He's one of VS-41's 37 Fleet Readiness Aviation Maintenance Personnel (FRAMP) instructors and he takes his job very seriously.

"We teach nonrated members and petty officers ranging from E-1 to E-7 everything from basic aviation safety to launching and recovering aircraft," says Perry, 23, who instructs between four to eight people in a one-story building located a stone's throw from the squadron's hangar. "The training includes teaching them how to service the S-3A, how to identify corrosion, use the ground support equipment, etc. We teach the students how to identify virtually every part of the S-3, so in time they are able to inspect the aircraft and tell if anything is wrong with it."

If the students do find something wrong, Perry and his fellow instructors teach them how to properly document the discrepancy.

"We teach them what each of the maintenance ratings (AD, AMS, AMH, AME, PR, AT, AX, AE, AZ. . .) is responsible for," says Perry, who was stationed aboard *Kitty Hawk* before coming to VS-41. "We teach them to report discrepancies to maintenance control in a professional manner. We don't want them to describe an aircraft part as a 'doohickey' but by its proper nomenclature."

Lieutenant Commander Brian McConville, FRAMP officer, says that between 110 and 176 students are enrolled in the course at any given time. "One thousand people are trained each year," he adds.

McConville, who was VS-41's assistant FRAMP officer between 1975 and 1978, adds that FRAMP varies from four to 17 weeks, depending on the experience level of the individual.

McConville joined the Navy as an enlisted man 23 years ago. He worked his way up to first class aviation machinist mate turbojet before being selected for chief petty officer and warrant officer at the same time, and then moved on up to his present rank. He has been in the VS community since 1971, and has been assigned to VS-29 and VS-37.

"We get people in here who have come from different communities and have experience in working on various aircraft," he says.

"FRAMP is usually shorter for personnel who arrive with prior squadron experience, because they're familiar with most aircraft procedures. However, the recruits who come here straight from A school usually stay longer. The course is also more demanding for the recruits because they have no formal training in maintaining any aircraft, let alone the S-3."

McConville says that he strives to keep FRAMP classes small and mixed with both experienced petty officers and inexperienced nonrated personnel. "The talent balance makes for a better class," he says.

ABH2 Perry says that everyone leaves FRAMP with more than they had when they came. "Most of them really want to learn," he adds. "Sometimes the younger guys come in here thinking FRAMP is a bother. But when they finally figure out what they're learning, they get down to business, ask questions and study."

Adds McConville, "More than 95 percent of them pass."

One FRAMP student, Airman Apprentice Richard Quay, says that the course is preparing him to go out into the fleet. "It's really helping me learn how to be safe and knowledgeable around the S-3."

Perry points out that sometimes fleet S-3A squadrons call and thank him and his fellow instructors for training their maintenance personnel so well.

"It makes me feel great," says Perry. "I sleep better nights."

### Maintenance

"This is a tough job," says Aviation Machinist's Mate Third Class Theresa Jeffries, wiping perspiration from her brow. "One wrong move and that's it," she adds. "You and your squadron mates can get hurt."

ABH2 Bruce Perry teaches his FRAMP students how to be safe around the S-3A.

**Top left, AMS3 Russell Rulona tapes a border around a portion of an S-3A's wing before spraying it with paint. Top right, AD3 Eddy Formera, left, and ADAN Dominick Bulone, right, prepare to install a new S-3 engine into one of VS-41's aircraft. Bottom, a squadron plane captain prepares to taxi out an S-3.**

AD3 Jeffries is standing outside a small building where VS-41's plane captains (PCs) hang out. She just finished taxiing out another S-3 *Viking.*

"That's my bird when I'm out there," she motions to the flight line about 60 yards away where an S-3 is being taxied by a fellow PC. "I stand right in front of that plane when I'm out there. I'm in charge of getting it out of here safely."

Jeffries has been a PC with VS-41 since 1980. Today, she is one of the squadron's most experienced plane captains and also one of only a few women who do the job. Being in a minority doesn't bother her, she says, because "I'm good at what I do. They [her male counterparts] respect that. They don't treat me any differently."

A day at the office for Jeffries means performing minor maintenance on S-3s such as checking the fuel, washing the airplane and changing tires. It also involves directing whining S-3s and communicating with hand signals to the pilot in the cockpit. It's all in a day's work.

"The job's challenging," says Jeffries, whose face is tan from the torrid California sun, "but I like it. I enjoy working with the people here, also. We're like a family. We look out for one another."

Jefferies is one of more than 300 VS-41 maintenance personnel whose job it is to keep the aircraft flying safely. Without their skill and dedication, VS-41 wouldn't have more than 46,000 class A accident-free hours, nor would it have received a CNO Safety Award in 1982.

"They're superb," says Capt. Sanford of his maintenance personnel. "They have shown, not only to me but to everyone who has observed them operate, that they're able to do a lot with what they have. They have raised the readiness of our aircraft to the point where it's comparable to the fleet. In addition to just maintaining the aircraft, they're responsible for implementing technical directives, receiving and transferring aircraft in conjunction with major aircraft overhauls on behalf of fleet units, and have a lot of other responsibilities over and above those of a normal fleet squadron – and they do it with a large cadre of highly trained, but in many cases inexperienced, personnel.

Like any shore-based fleet readiness squadron, VS-41 doesn't have built into its program a lot of milestone-type activities that other fleet squadrons do, such as deployments, operational readiness evaluations or weapons detachments. So, Capt. Sanford has to keep his people motivated. Whatever his methods are, they seem to be working well at VS-41.

One of VS-41's constant challenges is ensuring that about 120 (mostly 17 to 19 year-old airmen) of its more than 300 maintenance personnel are trained to the point where they work safely and support the squadron, according to Commander Will Gabber, VS-41's maintenance officer.

"This takes about two years and involves making them plane captains, in order to get them safety-trained for working around the aircraft, and then placing them into maintenance shops where they'll learn how to support the equipment."


An inside view of VS-41's hangar.

Aviation Electrician's Mate Senior Chief Paul Riffe, VS-41's maintenance control chief, adds, "The number of billets we have for career personnel is low and airmen make up a great part of the maintenance force in VS-41. This requires us to maintain a constant training evolution. It seems every time we have our work centers functioning well, our experienced people are ordered out and a new crop of airmen comes in. It's an ongoing cycle."

A former F-4 *Phantom* pilot, Cdr. Gabber switched to the aviation maintenance community in 1971. Since then he has worked in maintenance of F-4s, F-14s and S-3s. Of the three, he says the S-3A is the most challenging to support in a full systems capability.

"The S-3 has more black boxes in it than, say, the F-14," says Gabber, who keeps a model of the S-3A parked on his desk. "The S-3 has 65 major system black boxes, the F-14 has about 20. However, the S-3 is easier to maintain from a power plant perspective, because its engines are so accessible.

Besides staying on top of the S-3 component wear and tear, Gabber says that the *Viking* has 118 explosive cartridges in it to make the seats and canopy blow in the case of ejection. "They all have a certain store life," he adds, "and keeping on top of them takes a fair amount of work."

An average day for Cdr. Gabber includes reading reams of message traffic, conferences with Capt. Sanford and a lot of interface with his officers and maintenance chiefs. He also spends a lot of time doing routine paperwork and frequently walks around the hangar talking with his maintenance crewmen and checking on the S-3s. He says that being an M.O. is enjoyable, but that it gives him gray hair.

"Give these people a job which seems almost impossible to do and they will not only get it done but will exceed your goals," says Aviation Structural Mechanic Hydraulics Chief Mike Dougherty, VS-41's production control chief who is responsible for maintaining as many aircraft as possible on a flyable full-system status to support the training evolution. The job involves constant interface with the maintenance crew, which he enjoys.

"I have a good rapport with them," says Dougherty, who has been assigned to a number of maintenance billets during his career, which has included tours with VS-38, VAW-111 and VS-21.

"I'm not a screamer," he adds. "When I ask for something to be done I expect it to be done. I think one of the reasons why I get along with people is that I treat them like men and women. I don't care what their sex is, just as long as they can do the job."

Dougherty says that because there are only five chiefs in maintenance control, the squadron relies heavily on its shop supervisors, typically first class petty officers. "Ninety-nine percent of the time they don't let you down," he adds.

"Most of the personnel here are very dedicated," says AECS Riffe, who has 19 years in the Navy, two with VS-41. "They're true professionals who come here knowing they have a job to do for eight hours or for however long it takes. In fact a lot of them voluntarily stay overtime to get the job done."

As the squadron's maintenance control chief, he is responsible for assigning aircraft to missions, giving priority to each of the work centers concerning maintenance and basically overseeing the daily maintenance effort. Riffe seems to be always moving about the hangar discussing maintenance with his chiefs and crew and checking on the S-3s.

"Most days this job isn't that demanding," he says. "There are days, however," he shakes his head, "when everything happens at once, like the days when you're on the phone trying to get parts all over the place. They are the days you pull your hair out."

"Being a maintenance control chief is one of the most demanding jobs in the Navy for an enlisted man," says Aviation Boatswain's Mate Master Chief Richard Schondel, the squadron's former maintenance control chief.

Schondel, currently VS-41's FRAMP master chief, is a tall, dark-haired man with the kind of voice that demands attention. He's the type of chief friends refer to as an "old salt." He has 27 years in the Navy, three with VS-41.

"The toughest part of being a maintenance control chief is trying not to take yourself too seriously," adds Schondel. "When I was the maintenance chief here, I tended to get caught up in my own importance sometimes. I had to remind myself occasionally that I wasn't the most important person in the squadron. The most important people are those down in the hangar bay turning the wrenches and keeping the airplanes flying. They are the squadron. I could go home for a day and no one would miss me. But if the collateral duty inspector had to go home for a day, the squadron could come to a screeching halt."

Schondel boasts that the airmen and petty officers of VS-41 taught him about the S-3A.

"When I came to this squadron, I knew about avionics but I didn't know anything about hydraulics or power plants. But the young guys here showed me," he says. "Everything I learned came from them." ■

# Subspecialty Development Series Part II

A Naval Aviator's career path to command may take many routes. In today's Navy, subspecialty expertise helps to steer the course toward promotion.

Testimony to this fact came from the Naval Air Systems Command (NavAirSysCom), Washington, D.C., last November. Eight Naval Aviators assigned to headquarters were selected for significant promotional opportunities by the Aviation Command Selection Board. Six of the eight commanders have subspecialty credentials — in the fields of ASW, avionics, electronic warfare, communications systems technology and aeronautical engineering.

The group comprises an unusually large number of officers to reach these career milestones while assigned to a single command. It is clear that the combination of subspecialty expertise and Washington-area experience, with NavAirSysCom as the proving ground, was career-enhancing for these aviators. They are listed below with their present and future assignments:

Cdr. Roger R. Burbrink
Deputy Program Manager, A-6E Upgrade
C.O., special mission squadron

Cdr. William V. Cross II
F-14 Class Desk Officer
Selected for nuclear power training

Cdr. Thomas C. Davis
H-3 Class Desk Officer
C.O., H-3 squadron

Cdr. Dennis E. Fandrei (ADDU from the Naval Electronic Systems Command)
Program Manager, Tacair Reconnaissance
C.O., special mission squadron

Cdr. James M. Farley
Head, Program Appraisal and Evaluation Division
C.O., P-3 squadron

Cdr. George G. Maxwell
Deputy Program Manager, AYK-14 Computer System
C.O., special mission squadron

Cdr. Dennis L. Solomon
P-3 Class Desk Officer
X.O. of an LPH

Cdr. James M. Stephenson
Asst. for Readiness and Fleet Liaison, EA-6B
C.O., EA-6 squadron

Cross Solomon Stephenson Maxwell Farley Fandrei Davis Burbrink

# Training the Best To Be Even Better

By Dr. Larita J. Killian

Many of the Navy's finest aviators with the Education and Training Management Subspecialty (ETMS) are using their unique knowledge and graduate education to help student Naval Aviators become even better trained than their predecessors. ETM subspecialists not only develop and enhance the Naval Aviation Schools Command educational programs and methods, but also those of other training activities and staffs.

Because of the number and variety of ETM subspecialty billets, the assignments are both personally and professionally rewarding and worth close examination by career-minded Naval Aviators.

Naval Aviator ETM subspecialists at all levels may become involved in developing, implementing and evaluating the application of advanced technology (such as computer-assisted instruction) to aviation education and training. Many are also responsible for education/training staff development or resource planning.

The career benefits make it worthwhile for talented and motivated aviators to look into ETMS programs because it is sound career planning and offers a number of alternatives. From the Navy's viewpoint, it pays to have the best aviators working to improve Naval Aviation-related training programs.

Naval Aviators are attracted to the ETMS program because it offers unique, two-way career enhancement, i.e., it allows them to develop new leadership and management skills for use during subspecialty assignments without losing contact with their primary warfare specialties. Those who earn the ETM subspecialty through full-time graduate education usually return to an operational tour immediately after graduation and are assigned to ETMS billets upon rotation to shore duty. By keeping up-to-date in their warfare specialties they are more effective in their ETMS billets.

This combination of operational experience and subspecialty expertise is also beneficial to an officer's promotional opportunities. The results of the most recent commander and captain selection boards demonstrate that officers with Navy-funded graduate subspecialty education enjoy about a 20-percent advantage over others in selection opportunity.

Aviators can earn ETMS qualification in a variety of ways. There are fully funded education quotas for the following universities: Harvard, Stanford, George Washington, Old Dominion, the University of San Diego and the University of West Florida. There is also an off-duty curriculum available at most of these institutions, and at the University of North Florida and Jacksonville University.

Officers may also earn this subspecialty through the Advanced Education Program (AEP) at most of these schools. Under AEP, officers receive full pay and benefits but must defray their education costs. In-service Veterans Administration "G.I. bill" educational benefits may be used by those who are eligible for them while enrolled in AEP.

The ETMS graduate curriculum combines education and training principles with general management. To satisfy the educational requirements for this subspecialty, an officer completes courses in organizational development and manpower/personnel management, instructional systems development, educational research and psychology, resource planning and programming, applications of computer technology to education and training, and contract administration and evaluation. The full-time curriculum can usually be completed in 12 to 15 months, earning an officer the XX37P subspecialty code. After this and upon completing two or more successful tours in ETMS-related billets, the officer may be designated by the biennial ETMS subspecialty selection board as a *proven* subspecialist. His or her subspecialty code would then change to XX37Q.

JO3 Thomas Turner

**Capt. Charles E. Ward (left), an ETM proven subspecialist serving as ComTraWing-6 at Pensacola, and student pilot Lt. Robert Wooley discuss aircraft characteristics.**

Many officers qualify for the ETM subspecialty through the experience they gain as training officers or in staff assignments developing training plans and programs. Those who have earned the designation of ETM subspecialist through experience without graduate education receive the ETMS code XX37S. When determined by the ETMS selection board to be *proven* subspecialists, their designator changes to XX37R. These experience-earned proven subspecialists then become eligible for assignment to the many important ETMS billets.

ETMS billets in the ranks of lieutenant through captain are available, and represent activities as diverse as fleet combat training centers, training air wings, naval air technical training centers and training squadrons. There are also ETMS billets in the office of the Deputy Chief of Naval Operations (Air Warfare) and on a variety of headquarters staffs, such as the Chief of Naval Education and Training and the Chief of Naval Air Training. Specifically, a lieutenant commander serving as curriculum and instructional standards officer at a naval air technical training center directs curriculum development, designs evaluation programs to determine whether objectives are being achieved, and applies a variety of management skills to solve training problems. A commander serving in an ETMS billet at a training air wing reviews training plans and policies, evaluates major curriculum proposals, identifies resource requirements, and may also be involved in procurement and evaluation of contractor services. Captains serving in major staff billets direct and coordinate aviation education and training across several activities.

Because of the increasing complexity of Naval Aviation weapon systems, the need for the best possible training programs is becoming increasingly important and the Navy will continue to need top-notch aviators to serve in education and training billets. The ETMS program enables talented, career-minded officers to develop up-to-date management and technical skills to complement their warfare specialty and to apply them in challenging assignments that contribute to promotion and command opportunities.

Aviators who want to learn more about these opportunities should contact their detailers at the Naval Military Personnel Command (NMPC-440): Captains, autovon 224-8356 or commercial (202) 694-8356; Commanders, 224-8077 or (202) 694-8077; Lieutenant Commanders and Lieutenants, 224-8707 or (202) 694-8707. Information can also be obtained from the Chief of Naval Education and Training (Code N-543), autovon 922-4684 or commercial (904) 452-4684.

Information on the Advanced Education Program is available from Ms. Carol Williams, Program Manager/Coordinator, Special Education Program (OP-114D3), autovon 224-4300 or commercial (202) 694-4300. ■

# Operations Analysis
## A Prestigious Past, A Promising Future

By Commander Jim Hinkle

As early as 1942 the United States had recognized the potential value of operations research. The British had already put it to effective use during the Battle of Britain in 1940 and in dealing with a variety of military operational problems, including antisubmarine warfare and strategic bombing.

Today, the application of operations research techniques is as useful as it was during WW II. Operations research, or "ops analysis" as it is often called, continues to provide analytical support for military decisions. For the Navy, the primary source of this education is the Operations Analysis (OA) curriculum at the Naval Postgraduate School (NPS), Monterey, Calif.

With the establishment of the Operations Analysis curriculum in 1951, NPS and New York's Columbia University share the distinction of being the first schools in this country to institute academic programs in the field.

At NPS, the Operations Analysis curriculum is two years in length, broken into eight academic quarters. Successful completion of the course and a student thesis lead to a fully accredited master's degree and designation as an 0042P-coded Operations Analysis subspecialist. This is the first step toward achieving designation as a *proven* subspecialist, a qualification that has been correlated in recent years with promotion success. Results of the recent captain and command selection boards showed 73-percent and 90-percent opportunity, respectively, compared with an average promotion opportunity of 60 and 75 percent without OA subspecialty credentials. And the fact that three of the 17 NPS alumni of the 1984 commodore's selection list were graduates of the OA curriculum further supports this claim.

Lieutenant Commander Pat Sandoz, OA Curricular Officer at NPS, feels fortunate "to be developing and administering the academic programs for officers I know will be the captains and flag officers of the Navy 10 to 15 years down the line."

The objective of the OA program is to produce analysts who can independently perform quantitative analyses of military operational and managerial problems. Graduates of the program apply their knowledge of mathematics, probability, statistics, economics, human factors and physical science to formulating problems, generating decision criteria, selecting alternatives in strategic and tactical warfare, and to the planning, budgeting and procurement of forces and systems.

The current curriculum is an interdisciplinary blend of basic operations research theory, tactical and strategic analysis, economics and systems analysis. The early part of the program provides officers with fundamentals, while core courses prepare them for a variety of analysis positions.

After graduation, newly designated OA subspecialists normally return to operational assignments in fleet squadrons. Commodore Grant Sharp, Director, Program Resource Appraisal Division in the office of the Chief of Naval Operations (OPNAV) and sponsor of the Operations Analysis curriculum, points out that "the Navy needs OA subspecialists who are current in their warfare specialty. From my own personal experience, I can tell you that. . .recent time in the fleet is a great advantage in providing the proper perspective to your analysis. . . ."

Once back in the cockpit, it does not take long for the graduate to realize that the analytical techniques learned will not lie idle in an operational assignment. The fleet offers many opportunities to exercise the knowledge and skills that the OA curriculum instills in its graduates. Captain C. Flack Logan, Deputy Director of the Program Resource Appraisal Division in OPNAV, says, "I've used my education continuously since graduation in every tour, from instructor in the [fleet readiness squadron (FRS)] to my current assignment in OP-91, and that includes command of both fleet and [FRS] fighter squadrons, and as X.O. of *Midway* (CV-41)."

Commander W. L. "Chip" Boyd, the top OA graduate in 1980, sees OA as a "way of thinking." He feels the most important benefit of an ops analysis degree to the individual officer is a structured, logical approach to problem solving. Whether the problem is a routine managerial matter or requires a tactical decision to be made in a matter of seconds, the ops analysis graduate is taught a disciplined thought process which enables him to lay out the facts in an understandable way, analyze the options, throw in a heavy measure of common sense and then decide.

Often contributing to the highest levels of the Navy decision-making process, the OA subspecialist can have a significant impact. In the words of Vice Admiral W. F. "Scot" McCauley, the former sponsor of the Operations Analysis curriculum, "The Navy continues to depend upon OA due to the increasing complexity of Navy manning, training and operations. Having and using a subspecialty in today's Navy is taking on significant importance as the Navy tends to rely more and more on the officer who can perform well in both operational and staff positions."

Commander Will Trafton, former C.O. of an A-7 squadron and Executive Assistant to Commander, Naval Air Systems Command, is a 1973 graduate of the OA curriculum in Monterey. Cdr. Trafton has recently been assigned to *Forrestal* (CV-59) as operations officer. He reflects on his decision to choose Operations Analysis as a subspecialty, "One of the reasons I selected OA as my primary curriculum back in 1970 was that I anticipated it would have broad application through the Navy. I have not been disappointed. I might add that the current concern of today's junior officer in the tacair community – that being taken out of the cockpit for two years is professional suicide – is unfounded. A good mix of advanced education and operational experience will make our junior aviators far more effective as department heads, executive officers and commanding officers. Operational Analysis also provides a solid foundation for several career options when a mid-grade aviator starts looking at subspecialties. I recommend a master's degree in OA very strongly to the aviator who is seriously interested in continuing his or her education, and that it be obtained after the first squadron tour if possible."

Operations Analysis is a time-proven, highly regarded profession applicable to a variety of fields, both in an operational and headquarters environment. It is a subspecialty that junior aviators should consider in planning their naval careers.

For further information on the OA subspecialty, contact Curricular Officer, Operations Analysis Programs (Code 30), Naval Postgraduate School, Monterey, Calif. 93943, autovon 878-2786 or commercial (408) 646-2786.

### Awards

Crew One of Point Mugu's VP-65 was named winner of the FY 84 Liberty Bell Trophy for excellence in antisubmarine warfare among reserve maritime patrol squadrons. Runners-up are VP-64, Willow Grove, and VP-69, Whidbey Island.

Norfolk's VAW-78 joined CAEWWing-12 squadrons, as the one Naval Reserve and seven regular Navy units were presented Meritorious Unit Commendations in ceremonies last October at NAS Norfolk. The squadrons were recognized for their support of the Vice President's Drug Interdiction Task Force in South Florida for the past three years. Squadron E-2 *Hawkeyes* provided all-weather, day-and-night surveillance and intercept control of suspected drug smugglers from forward bases in Florida in what the Navy dubbed *Operation Thunderbolt*. The missions were instrumental in helping to curtail illegal drug entry into the U.S.

The *Skinny Dragons* of VP-4, NAS Barbers Point, were selected as the Navy-wide Mining Squadron of the Year for the period October 1, 1983, to September 30, 1984. Tabulation scores for the sixth annual award presented by ComMineWarCom revealed VP-4 as having the best mine placement accuracy in the fleet during its mining readiness certification inspection. *Dragon* aircrews, under mine leader Cdr. A. J. Button, scored 14 bull's-eyes out of 20 drops. Good crew coordination, split-second timing and precision flying are mandatory for this unmatched aerial mining accuracy.

### Records

The following individuals marked personal career milestones:

VFA-132: Lt.Cdr. Brian Calhoun completed 1,000 hours in the F/A-18 *Hornet*. He is believed to be the first Navy pilot to achieve this milestone.

VR-24: Grumman Aerospace Corp. presented C-2 *Greyhound* flight-time plaques to Lt.Cdr. William E. Baker and ABH1 Larry Miller for achieving 1,000 hours, and AD1 Michael D. Roth for amassing over 2,000 hours in the COD aircraft.

VA-65: Cdr. Bill Fallon logged 500 arrested landings aboard *Eisenhower*.

VAQ-34: Lt. John Vinson achieved 2,000 flight hours in ERA-3B and KA-3B *Skywarriors*.

VAQ-133: Lt.Cdr. Rick Williams achieved double-centurion status in the EA-6B *Prowler* on board *Enterprise*, while Lts. Dan Mason and Ken Fink became triple centurions.

Several units marked accident-free flight time: VP-40, 125,000 hours and 17 years; VP-48, 120,000 hours and 16 years; HML-267, 89,000 hours and 14 years; VC-12, 32,000 hours and 11 years; VMFA-314, 22,000 hours and 7 years; VAW-116, 16,900 hours and 9 years; VAQ-133, 10,000 hours and 6 years; HMH-464, 10,000 hours and 3.5 years; and HMM-164, 5,000 hours and 1 year.

**Lt. "Sky" King flies another OK 3 wire pass, with ECMOs Cdr. "Grim" Griffin and Lt. "Downhill" Hill, as the Wizards of VAQ-133 surpass 10,000 accident-free flight hours.**

### Rescues

In a rescue mission that took less than 20 minutes, a Marine Corps CH-46 *Sea Knight* crew rescued the pilot of an Air Force U-2 reconnaissance aircraft after it crashed near Osan Air Base, Korea, last October. The HMM-161 crew, pilot Lt.Col. Gary Albin; Capt. Jeff Won, copilot; Sgt. William Batchelder, crew chief; and Sgt. Jeffrey Velasco, first mechanic, all assigned to HMM-161, were departing Osan when they were diverted to the crash site. During climbout, the U-2 pilot had problems and was forced to eject. He landed safely in a stream where he was floating in his survival gear when rescued by the CH-46 crew.

VAW-117 plane captain AN Timothy Peters recently saved the life of a shipmate aboard *Enterprise* while deployed to the Indian Ocean. During routine flight operations in the North Arabian Sea, AN Peters was preparing an E-2C for launch when he noticed a flight deck handler running to remove a chock from an aircraft next to the *Hawkeye*. The crewman's path was taking him directly into the E-2's turning propeller. Peters grabbed the "blue shirt" before he reached the propeller. For his actions, AN Peters was selected as ComFitAEWWingPac's Pro-of-the-Week.

### Honing the Edge

The *Bluehawks* of VA-72 participated in the multinational exercise *Display Determination* last fall while embarked in *America*. The two-week exercise included French, Italian and Turkish units, and spanned the central and eastern Mediterranean Sea. The squadron reached a major milestone during the training by completing 1,000 successful sorties in a row.

An emergency and crash drill was held last fall involving NAS South Weymouth sailors, Marines and fire fighters, coordinating with local agencies in training to respond to an aircraft incident. The mock

disaster was staged as a midair crash of a TA-4 jet trainer and a P-3 patrol plane making approaches to the air station. The drill involved a variety of events, ranging from fire fighting and emergency medical

PH2 Pierce

**Wearing a mask and chest piece to simulate an injury, a Marine at NAS South Weymouth is given first aid during the mock disaster drill.**

aid and rescue to handling security and public information. It is training such as this that has contributed to South Weymouth's 14-year, accident-free record.

North Island's VF-301 accepted its first three F-14A *Tomcats* last October, which will make the reserve squadron fleet-compatible and a better mobilization asset. The new aircraft will give squadron reservists the opportunity to train in peacetime with the same weapons and equipment that would be used in wartime. VF-301 is slated to receive 12 *Tomcats* this fiscal year. Sister squadron VF-302 will begin its transition in March 1985.

Marines from the 3d MAW, Camp Pendleton, took part in Exercise *RimPac 84* last summer. Five "Rim of the Pacific" nations — Australia, Canada, Japan, New Zealand and the U.S. — participated. Eighty ships, approximately 250 aircraft and more than 50,000 sailors and Marines were involved in the exercise, which is designed to enhance the tactical capability of the participating units in conventional maritime warfare.

**Reestablished**

Commandant of the Marine Corps Gen. P. X. Kelley officially reactivated HMM-364 on October 12, 1984. The squadron, which was deactivated in 1971, will fly CH-46 *Sea Knights* and comprise 156 enlisted personnel, 29 Naval Aviators and three ground officers.

**Established**

HSL-43 was established at NAS North Island, Calif., on October 12, 1984. Its primary mission is to provide mission-capable detachments for deployment aboard Pacific Fleet cruisers, destroyers and frigates. The *Battlecats* will employ the SH-60B *Seahawk*, which will serve as a remote platform for sensor deployment, data processing display and transmission, and weapons delivery as part of the LAMPS MK III light airborne multipurpose system. The squadron's first commanding officer is Cdr. Michael R. Clapsadl.

**Et cetera**

The saga of RA-5C *Vigilante* BuNo 156621 continues. Its final resting place was supposed to be in front of the Naval Schools of Photography, NAS Pensacola, where it has been on display since December 1978. But recently the reconnaissance aircraft was moved from its pedestal to be placed aboard the floating museum, USS *Intrepid*, in New York Harbor. Upon leaving the grounds of the photo school, it took a rather perilous journey to *Lexington*, home-ported at Pensacola. Maneuvering the 35,000-pound, 76-foot-long, 53-foot-wide aircraft around trees, buildings and down narrow streets was quite a challenge for the driver of the tow tractor. It took nearly six hours to move the *Vigilante* only three miles. Once aboard *Lexington*, the aircraft was transported to the Philadelphia shipyard where it was to be transferred to a barge and then on to the "Big Apple." In New York, the aircraft will be overhauled and put on permanent display aboard *Intrepid*.

**Change of Command**

HM-14: Cdr. Eddie L. Duckworth relieved Cdr. Chester F. Harrison.

HT-8: Cdr. H. W. Turner relieved Cdr. L. B. Nichols.

NAR Memphis: Capt. Roger Murray relieved Capt. Murl Husted, Jr.

NAR Point Mugu: Capt. James P. Cavanaugh relieved Capt. James M. Hickerson.

NAS Atlanta: Capt. C. Alan Stephan relieved Capt. Ronald P. Hyde.

TraWing-1: Capt. Vincent J. Huth relieved Capt. Ronald G. Horne.

VA-42: Cdr. Allen H. White, Jr., relieved Cdr. John M. Luecke, Jr.

VA-72: Cdr. Fields Richardson relieved Cdr. Charles A. Cook, Jr.

VA-127: Cdr. Michael J. Sullivan relieved Cdr. Paul J. Valovich.

VAQ-33: Cdr. Michael J. Marnane relieved Cdr. James P. Vambell.

VAW-123: Cdr. William C. Liebe relieved Cdr. Ray L. Bunton.

VF-14: Cdr. Curtiss W. Schantz relieved Cdr. Thomas J. Terrill.

VP-6: Cdr. Joseph K. Sikes relieved Cdr. Robert J. Miles.

VP-19: Cdr. Jerry A. Thompson relieved Cdr. Donald C. Hefkin.

VP-48: Cdr. D. L. Speed relieved Cdr. J. S. Falls.

VR-48: Cdr. John I. Loving, Jr., relieved Capt. Joseph T. Rozic.

VT-7: Cdr. Brent W. Beck relieved Cdr. James E. Coleman.

VT-26: Cdr. Michael A. Isban relieved Cdr. William R. Bowers.

**Oral History Collection**

During 1984, the Naval Institute added several oral histories to its collection, bringing the current total to more than 150 volumes of memoirs. The entire oral history collection is available in Annapolis, Md., at the Naval Institute and at the Naval Academy's Nimitz Library, as well as at the Naval Historical Center, Bldg. 57, Washington Navy Yard, Washington, D.C. Some volumes are also available at the Naval War College, Newport, R.I.

A catalog of the entire collection may be obtained by sending $2.00 to Director of Oral History, U.S. Naval Institute, Annapolis, Md. 21402, or calling (301) 268-6110.

The following new transcripts should be of particular interest to researchers in the field of Naval Aviation:
Colgate W. Darden, Jr.
VAdm. Gerald E. Miller, USN(Ret.)
Adm. Thomas H. Moorer, USN(Ret.)
Adm. Alfred Melville Pride, USN(Ret.)

## SecNav Earns PQM

Secretary of the Navy John F. Lehman completed PQM (Pilot Qualification in Model) training in January at Helicopter Anti-Submarine Squadron, Light 30, NAS Norfolk, Va.

SecNav's training was in the SH-2F *Seasprite* which performs two primary missions for the U.S. Navy – the ASW mission and the antiship surveillance and targeting mission. The SH-2F extends the ship's sensor range in seeking out enemy submarines and in warning of enemy surface ships hidden beyond the horizon.

Checking out the aircraft.

Conducting preflight inspection.

## Managing Editor Retires

When a publication loses a terrific editor it is difficult to say goodbye. But when that editor is also a good friend, saying goodbye is painful.

In January, *NANews* swallowed hard and wished Helen Collins, its now retired Managing Editor, continued happiness in the years ahead. For the past 15 years, the magazine staff has depended on her to write articles, edit manuscripts, and help ensure *NANews* met its deadlines. But aside from her interest in maintaining the quality of the magazine, Collins' relationship with *NANews'* staff has been one of deep affection and care. It will take a while getting used to her absence.

"Most military magazines have much larger staffs than we do," she said. "And so, because *NANews* has a small staff, we are like family. I will miss that family very much."

When asked what she has striven to attain and accomplish as Managing Editor, Collins said "keeping the Naval Aviation community up to date on what's going on, and also explaining to people who aren't familiar with Naval Aviation what it's all about."

"I don't know if we succeeded, but we have tried," she remarked. "In a magazine as small as ours, we aren't able to report everything. We have to be selective, especially now that *NANews* is publishing bimonthly. I'm interested in people, so I've always tried to make sure the magazine wrote about the people who keep Naval Aviation flying."

Helen Collins was born and raised in New York City. She attended Hunter College and Columbia University and today credits the English teachers in both schools for her firm knowledge of the subject.

"Her superior writing and editorial skills have made a winning combination in her position as Managing Editor," said Sandy Russell, *NANews'* Acting Managing Editor. "And her sense of propriety has kept *NANews* at the top of its class in military periodicals."

Prior to joining the *NANews* staff in 1969, Collins did a lot of volunteer work during her travels with her husband George, a retired U.S. Army lieutenant colonel. Her volunteer duties included working for an orphan home, a medical clinic, an animal welfare league, and an institute for blind children. She remarked that the hours were often long, but she felt she was accomplishing something. That same feeling of accomplishment carried over into her work with *NANews*.

"Working on the magazine has been a terrific experience and I wouldn't have missed it for anything," she said. "Not everyone can say they enjoy what they do, but I have loved it."

Commander Howard Wheeler, Editor of *NANews*, remarked that "Helen has contributed directly to *NANews'* fine reputation and its distinction as one of the finest government publications in print. If the magazine has been the voice of Naval Aviation for more than 68 years, she has been one person who has ensured that it spoke clearly and accurately during the past 15."

Collins has moved to a home which overlooks the Piankatank River, in Virginia. With her has gone 15 years of memories and the best of wishes from the people she has been associated with at *NANews*. ■

# FLIGHT BAG

**LDO Aviator Program**

Seventeen enlisted personnel were recently selected for the limited duty officer aviator program and are scheduled to enter Aviation Officer Candidate School, NAS Pensacola, Fla., in July. They are:

ET1 Craig C. Adkins
AX2 Edward Barbot
AD2 Randy J. Betcher
AE2 Roger J. Brouillet
AE1 Alan M. Davis
AW2 Ernest E. Lashua, Jr.
SM1 James M. Lightbody
AT2 Kurt R. Lutz
AE1 Robert C. Marino
DS1 Stephen P. Melnick
PH1 Alan D. Morris
AE2 Scott C. Rivard
AQ1 Mark P. Smith
AX2 Albert L. Tullus
ET1 Oakley K. Watkins III
AC2 John W. Williams
TDC David D. Zellner

**Naval Aviation Glossary**

*Naval Aviation News* plans to compile a glossary of commonly used, unclassified words, phrases and acronyms spoken in the Naval Aviation community. We would like our readers to contribute to the listing. Terms such as flare (verb), yellow sheet, high drink and DME are examples of what we're seeking.

Please, let us hear from you!

**Vietnam Book**

Macmillan Publishing Co. has commissioned me, with coauthor Alfred Price, to write a book on the 10 May 1972 air strikes against North Vietnam. I would like to hear from anyone involved with that day, from carrier personnel to pilots and commanders. This will be a men and machines book, patterned after our book on the Falklands war, *Air War South Atlantic.*

Jeff Ethell
Rt. 1, Box 3154
Front Royal, VA 22630 (703) 636-1816

**Reunions, etc.**

**Navy Hurricane Hunters reunion,** June 21-22, Naval Aviation Museum, Pensacola, FL. Contact Hurricane Hunters, Inc., 2818 Cedarcrest Dr., Orange Park, FL 32073, (904) 264-6078 or 282-4242.

**Naval Aviation Ball,** April 27, Hyatt Regency Crystal City, Arlington, VA. Contact Capt. Lynn Grafel, OP-05X, Navy Dept., Washington, DC 20350, (202) 697-3489.

**Marine Aviation reunion for all personnel,** May 4, MCAF Quantico. Contact Judy Skinner, Reservation Secretary, MCAF Quantico, VA 22134-5060, (703) 640-2442.

**USS Yorktown CV-5 Club reunion,** May 23-26, Denver, CO. Write Bob Johnson, 5791 S. Spotswood St., Littleton, CO 80120.

**USS Tangier (AV-8) reunion,** May 30-June 1, Hyatt Regency Hotel, Savannah, GA. Contact Jack Schoemaker, 4 Leeds Gate Rd., Savannah, GA 31406, (912) 925-4583.

**Naval Helicopter Association convention,** May 1-4, Virginia Beach Pavilion, Virginia Beach, Va. Write Lt.Cdr. Ronn Rygg, HSL-30, NAS Norfolk, VA 23511, or call autovon 564-1413/1414 or commercial (804) 444-1413/1414.

**U.S. Naval Test Pilot School reunion and symposium,** April 19-20, Patuxent River, MD Contact Reunion Coordinator, Lt.Cdr. Brian Young, USNTPS, NATC, Patuxent River, MD 20670-5304, (301)863-4107.

**USS Belleau Wood (CVL-24) and attached air groups reunion,** April 25-28, Jacksonville, FL. Contact Richard Fread, P.O. Box 846, Annandale, VA 22003, (703) 642-5670.

**VPB-52 Black Cats reunion,** May 1985, Charleston, SC. Contact Saul Frishberg, 1021 Jeffrey Drive, Southampton, PA 18966, (215) 357-6829.

**USS Shangri-La (CV-38) and VB-85, 1945 reunion,** June 14-17, Cape May, NJ. Contact James Lacina, 910 W. 86th St., Downers Grove, IL 60516.

**Association of Naval Aviation annual symposium,** April 25-28, Hyatt Regency Crystal City, Arlington, VA. Contact Fred Orrik, 8525 Bound Brook Lane, Alexandria, VA 22309, (703) 780-8153.

**The following reunions will be held in conjunction with the Association of Naval Aviation symposium,** April 25-28, 1985:

**Flying Midshipmen Association.** Contact Glenn L. Allen, Jr., 4906 Asquith Court, Fairfax, VA 22032, (703) 978-6464.

**Mariner.** Contact Norman Polski, 8203 Autrim Lane, Baltimore, MD 21208, (301) 659-1403.

**SB2C personnel.** Contact Cdr. J. Alton Chinn, USNR(Ret.), 2558 Blaze Trail, Diamond Bar, CA 91765, (714) 861-8792.

**Skyraider.** Contact N. Douglas Francis, P.O. Box 893, McLean, VA 22101, (202) 694-1507.

**VPB-116, Pacific 1945-46.** Contact Philip W. Smith, FMC, Suite 11502, 1100 L Street N.W., Washington, DC. 20573, (202) 523-5712.

**VS Squadrons.** Contact Captain Edward M. Haugh, c/o National Aviation Club, 1745 Jefferson Davis Highway, #308, Arlington, VA 22202, (703) 521-1991.

**VP-29, Whidbey Island Kodiak 1948-49.** Contact Philip W. Smith, FMC, Suite 11502, 1100 L Street N.W., Washington, DC 20573, (202) 523-5712.


**The above insignia were recently approved by the Insignia Board.**