NAVAL AVIATION NEWS

November–December 1994

The Future of Coast Guard Aviation

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NAVAL AVIATION NEWS

Flagship Publication of Naval Aviation

Oldest U.S. Navy Periodical, Volume 77, No.1, November–December 1994

COVERS—Front: A Coast Guard HH-65 *Dolphin* of CGAS San Diego, Calif., conducts a coastal rescue exercise off Santa Catalina Island (Capt. Joe Towers). Back: Troops from the Army's 10th Mountain Division board a UH-60 *Blackhawk* on 19 September 1994 on board *Dwight D. Eisenhower* (CVN 69) in support of Operation Restore Democracy (PHAR Tony Janni).

Naval Aviation News (USPS 323-310; ISSN 0028-1417) is published bimonthly for the Chief of Naval Operations by the Naval Historical Center. Editorial offices are located in Bldg. 157-1 Washington Navy Yard, 901 M Street, SE, Washington, DC 20374-5059. Second-class postage is paid at Washington, DC, and additional mailing offices. The Secretary of the Navy has determined that this publication is necessary in the transaction of business required by law. Funds for printing have been approved by the Navy Publications and Printing Policy Committee. The use of a name of any specific manufacturer, commercial product, commodity or service in this publication does not imply endorsement by the Navy. Photographs are U.S. Navy unless otherwise credited.

Publication Policy: *Naval Aviation News* considers for publication unsolicited manuscripts, photo essays, artwork and general news about aircraft, organizations, history and/or human endeavors which are the core of Naval Aviation. All military contributors should forward articles about their commands only after internal security review and with the permission of the commanding officer. Manuscripts will be returned upon request. Articles accepted for publication may be submitted on a diskette in Word Perfect 5.1. For further guidelines on submissions, contact the Managing Editor at DSN 288-4407/8/9 or (202) 433-4407/8/9; FAX (202) 433-2343.

Subscriptions: Superintendent of Documents, Government Printing Office, P.O. Box 371954, Pittsburgh, PA 15250-7954. Phone: (202) 783-3238. Annual price: $10 U.S.; $12.50 foreign.

POSTMASTER: Send address changes to *Naval Aviation News*, Bldg. 157-1 Washington Navy Yard, 901 M Street, SE, Washington, DC 20374-5059.

By RAdm. Brent M. Bennitt, Director, Air Warfare

Forward . . . From the Sea

JO2 Bobby Jones

RAdm. Brent M. Bennitt

Two years ago, the publication of ". . . From the Sea" announced a shift in operational focus as a result of the changing strategic landscape. This document gave the naval service a common theme upon which to articulate the shape and size of our service for the next century. This "white paper" has now been updated and given the title, "Forward . . . From the Sea."

In addition to contributions of both the Navy and Marine Corps in the areas of power projection and forward presence, "Forward . . . From the Sea" restates the need for the Navy to support national strategic objectives through our enduring contributions in strategic deterrence, sea control and maritime supremacy, and strategic sealift.

Naval Aviation makes key contributions to all five of these areas, and throughout the range of operations from peacetime forward presence to crisis and conflict. The unique capabilities of Naval Aviation have never been in higher demand as we continue to close overseas bases or scale back their scope of operations. In 1994 alone, we've been called to the scene in Somalia, the Caribbean (both Haiti and Cuba), Bosnia, North Korea and southern Iraq. We are where we're needed, when we're needed, supporting our nation's policies overseas. Flexible carrier battle groups with versatile, multimission carrier air wings provide the necessary capabilities forward—ready and positioned to respond to any contingency.

This increasing relevance of the naval service and Naval Aviation has been acknowledged by the administration and Congress as they approved, in the FY-1995 budget, funding for the newest *Nimitz*-class carrier, CVN 76, and the F/A-18E/F, our nation's only multirole strike fighter under development. This reaffirms what we already know—that carrier aviation is the force of choice in today's operating environment. I'm optimistic that Navy/Marine Corps aviation programs will continue to receive funding commensurate with their high value to the nation.

In this issue, we acknowledge the contributions of Coast Guard aviation. We wear the same Wings of Gold and work closely together in as many mission areas as possible. In this new era of reduced budgets, reduced threat and joint focus, we are working to identify areas where the Navy and Coast Guard can assist each other in training and operations.

Be sure to get a copy of "Forward . . . From the Sea" and read it thoroughly. Like the original, it will keep you up to date on the Navy/Marine Corps vision, which, as always, is out in front responding to the challenges of a constantly changing world.

FLY 'EM SAFE!

A Coast Guard HH-60J hoists a rescue swimmer during a routine exercise.

Ted Wilbur

Cable Catastrophe

An HH-46 *Sea Knight* was on the last leg of a three-leg flight returning over land to the parent ship in the southwest Asian area. On board were the pilot, copilot and two enlisted crewmen. Passengers had been dropped off on an earlier leg.

Merchants on the ground saw the helo above some power lines, executing a descending turn toward a wadi (a ravine that is dry except during the rainy season). Two minutes later, a local farmer heard a loud explosion and reported the mishap to area police.

The aircraft had struck steel cables which ran across the 100-foot-wide wadi at 40 feet above the ground. The helo was in level flight, 100 knots at the time. The cables supported a manual pulley system used to cross the wadi during the rainy season. The pilot and two aircrewmen were killed on impact. The copilot was hospitalized but died from his injuries 11 days later. The aircraft was destroyed.

On one of the earlier legs that fatal day the *Sea Knight* was flown low enough to the ground at cruising speed to make the passengers noticeably uncomfortable. One of them even confronted the pilot after landing, extracting an acknowledgement from the pilot without significant reaction.

Flathatters linger in our midst like a rare virus. They're few and far between, but can be deadly. Maybe it's something chemical in the brain that makes 'em do it. The only answer is to identify the culprits (not always easy) and take corrective action before allowing 'em back at the controls. The Safety/NATOPS Officer was a friend of the pilot, which perhaps understandably stopped him from goin' to higher authority about the unsafe tendencies. Tough decision, but the price was tougher—four fatals and a helo.

Grampaw Pettibone says:

Gol Dang Flathatter! No two ways about it!

The investigators determined that this pilot was an overconfident type with an "overwhelming ego." On top of that, the Safety/NATOPS (Naval Air Training and Operating Procedures Standardization) Officer heard the pilot had been breakin' the rules—and he even scheduled a flight with his errant friend, to see for himself, two days before the crash.

The pilot demonstrated "canyon running" and "more aggressive maneuvering than necessary" to the Safety/Natops Officer—operating the HH-46D at 20 to 85 feet AGL (above ground level), 100–110 knots!

What happened to the "no lower than 500 feet AGL" rule?

The Safety/NATOPS Officer strongly cautioned the pilot to knock off that stuff. The pilot, who had an outstanding record otherwise, assured the officer he would.

Fearless Firefighters

In the course of a night landing aboard *Kitty Hawk* (CV 63), an F-14 struck the ramp and exploded. The resulting fireball rolled down the flight deck as the *Tomcat* broke apart. A drop tank spewed fuel as it slid into the catwalk, carrying the flames with it. The crew ejected. The radar intercept officer landed on the forward part of the ship and was only slightly injured, but the pilot descended into the burning fuel in the landing area.

Even before the pilot hit the carrier's deck, rescuers leaped to action. ABH1(AW) Larry Spradlin and ABH2 Jose Dickson of the crash and salvage team were standing at the foul line where the angled and forward decks meet. They instantly gathered up fire hoses as the blaze illuminated the night sky. They saw the pilot tumble into the midst of the inferno and proceeded directly toward him. The pilot tried to jump up and run but became engulfed in flames. The aviation boatswain's mates quickly fought the fire in the immediate area of the pilot. With that threat diminished, they called for a rescue team before turning their hoses on the wreckage.

Meanwhile, ABH1(AW) Tim Goode had been standing on elevator two. He heard the F-14's tires explode, witnessed the instant blaze and hurried to the nearest AFFF (aqueous film forming foam) station. Hose line in hand, Goode started toward the fire. But then he noticed the pilot, still strapped into his seat pan and parachute, struggling on the deck. He had become entangled in his parachute lines while rolling several times to escape the searing flames.

Goode passed off the hose and tried to free the pilot. But the lifesaving chute began to reinflate, posing a new hazard as it started to drag the pilot down the flight deck. After 30 feet of travel, with Goode straining to collapse the chute, he called for a knife. AT2 Brandon Liesemeyer of Fleet Air Reconnaissance Squadron 5 had run up on deck to lend a hand in ridding the pilot of his harness. He reached into the pilot's survival gear, extracted a knife and cut the ropes.

Finally free of the lines, Liesemeyer removed the pilot's harness. He and Goode then dragged the aviator, badly burned but alive, from the hazardous area. They assisted him into a stretcher for quick transport to the medical emergency room. These young men, with help from other firefighters, got the conflagration under control in one minute, 18 seconds, and had it extinguished in less than two and a half minutes.

Grampaw Pettibone says:

These guys can sail on my ship anytime! They were trained, ready and got the job done.

What goes into a human being that prompts him or her to respond as gallantly as did these remarkable individuals has always been a mystery to Ole Gramps. The horrifying circumstances of a flight deck crash—particularly at night—tests the mettle of even the most courageous. How blessed we are in Naval Aviation to have such people among us. Capt. William Pickavance, Jr., *Kitty Hawk*'s CO, aptly put it this way: "They went right into fight the fire and get their shipmate out without any regard for themselves or their own safety. They're the best."

Gramps tips his leather flyin' helmet to JOC Brent Johnston of *Kitty Hawk*'s Public Affairs Office for his write-up of this heroic feat. Another tip goes to the indispensable Angie May of the Chief of Naval Operations' Aviation Safety Coordinator's office for her enduring support of this column.

New Carrier Home-porting Plan

Aircraft carriers will be home-ported in Norfolk, Va.; Mayport, Fla.; San Diego, Calif.; Bremerton, Wash.; Everett, Wash.; and Yokosuka, Japan, according to the newest home-porting plan. The plan extends out to the year 2005 and was driven by force structure requirements, 1993 Base Realignment and Closure decisions, nuclear carrier maintenance requirements and the ratio of nuclear to conventional carriers. Numerous additional factors were and will be considered in carrying out the plan, including host country approval of overseas home-porting. The following list indicates the plan for each carrier and where it is now based:

CV 62 *Independence*
(Yokosuka, Japan)
Returns from deployment in June 1998. Home port change to North Island, Calif., for decommissioning in FY 1998. *Constellation* will move to Yokosuka.

CV 63 *Kitty Hawk*
(North Island, Calif.)
Returns from deployment in March 1997 and will move to Long Beach, Calif., for drydocking portion of overhaul (March–June 1997) then return to North Island to complete overhaul.

CV 64 *Constellation*
(North Island, Calif.)
Returns from deployment in November 1997 and will change home port to Yokosuka to relieve *Independence.*

CVN 65 *Enterprise*
(Norfolk, Va.)
Refueling overhaul was completed in Newport News, Va., in October 1994 then home port changed to Norfolk.

CV 66 *America*
(Norfolk, Va.)
Decommissioning in FY 1996.

CV 67 *John F. Kennedy*
(Philadelphia, Pa.)
Remain in overhaul until completion in FY 1995, then home port change to Mayport, Fla.

CVN 68 *Nimitz*
(Bremerton, Wash.)
Home port change to Newport News in FY 1998 for refueling overhaul (March 1998–March 2001) then home port change to North Island in FY 2001.

CVN 69 *Dwight D. Eisenhower*
(Norfolk, Va.)
Will remain in Norfolk except for moves to Newport News for complex overhaul in June 1995 and Newport News for refueling overhaul in FY 2002.

CVN 70 *Carl Vinson*
(Alameda, Calif.)
Return from deployment in October 1996 then home port change to Bremerton in October 1996.

CVN 71 *Theodore Roosevelt*
(Norfolk, Va.)
Will remain in Norfolk except for extended drydock in Newport News in October 1997 and refueling overhaul in FY 2008.

CVN 72 *Abraham Lincoln*
(Alameda, Calif.)
Home port change to Bremerton in November 1995 for shipyard maintenance then home port change to Everett, Wash., in December 1996.

CVN 73 *George Washington*
(Norfolk, Va.)
Will remain in Norfolk except for drydock maintenance in Newport News in FY 2001.

CVN 74 *John C. Stennis*
(Newport News, Va.)
Under construction until FY 1996 then home port change to Norfolk followed by home port change to North Island in FY 1998.

CVN 75 *United States*
(Newport News, Va.)
Under construction until FY 1998 then home port change to Norfolk.

CVN 76 (Unnamed)
(Newport News, Va.)
Construction then home port change to North Island in FY 2005.

Aviator Flag Moves

President Clinton has nominated **Adm. Stanley R. Arthur**, Vice Chief of Naval Operations, for retirement 1 February 1995.

Adm. Henry H. Mauz, Jr., retired as Commander in Chief, U.S. Atlantic Fleet, after more than 35 years of naval service. He was relieved by Adm. William J. Flanagan, Jr., in ceremonies 5 October.

F/A-18E/F Assembly Line Opens

The nation's newest combat aircraft fighter assembly line opened at McDonnell Douglas in St. Louis, Mo., 23 September, ahead of schedule. The E/F is a structural upgrade to the F/A-18C/D *Hornet* now being built for the U.S. Navy and Marine Corps and seven international customers. The $4.88 billion E/F engineering and manufacturing contract was awarded in June 1992. Seven flight test aircraft and three ground test articles will be built under the 7-1/2-year contract. The F/A-18E/F is expected to enter operational service in 2001 and plans call for the purchase of 1,000 aircraft through 2015.

First *Goshawk* Class Graduates

The first aviator class, consisting of nine students, to use the T-45 Training System received their wings and graduated 5 October from VT-21 in a ceremony at NAS Kingsville, Texas. Their training began in January as the first in a revolutionary training system. In addition to the aircraft, the program includes simulators, academics and a training integration system. The T-45 will ultimately replace the Navy's present fleet of intermediate and advanced jet trainers, the T-2C and the TA-4J.

Marines Return to Miramar

After 47 years, Marine Aviation returned to NAS Miramar, Calif., as the first elements of the 2d Marine Aircraft Wing and Marine Aircraft Group 46 landed. Twenty-one F/A-18 *Hornets* from VMFA(AW)-121 and VMFA-134 arrived 24 August. A total of 24 aircraft and 900 personnel are relocating in the first phase of the move. The move marks the beginning of the realignment and closure process for MCASs El Toro and Tustin, Calif. Five more squadrons are planned to move to Miramar in 1995.

Corporate News

Northrop Grumman Corp., under an agreement with the Advanced Research Projects Agency, is studying develop-

ment of an affordable lightweight fighter that will offer significant performance capability over current operational aircraft in range, payload and survivability. The objective is development of an aircraft based on a common airframe design which provides a conventional takeoff and landing capability for Air Force missions and, with modular changes, a short takeoff and vertical landing capability which can be used by the Navy and Marine Corps.

E-Systems, Inc., Dallas, Texas, was awarded a $203-million contract to upgrade 68 Navy P-3C *Orions*. The four-year contract calls for the company to upgrade the aircraft airframes and avionics and boosts the company's potential to win contracts to upgrade an additional 500 P-3s around the world.

Raytheon Company announced the formation of the **Raytheon Aircraft Company**, which combines Beech Aircraft Corp. with Raytheon Corporate Jets, the maker of the Hawker line of business aircraft. Raytheon Co. purchased Beech in 1980, and Raytheon Corp. Jets from British Aerospace in August 1993. The new company will have annual sales of $1.7 billion. Both the Beech and Hawker names will be preserved as part of the new company.

Fairchild Space and Defense Corp., Germantown, Md., won $8.3-million and $12.1-million contracts from the Naval Air Systems Command to upgrade the F-14 program.

Kaman Corp. and Egypt have tentatively agreed to a $380-million contract for the upgrade of 10 SH-2F LAMPS MK-Is to SH-2Gs. The Egyptian aircraft will be identical to U.S. Navy G-model SH-2s except they will be fitted with Allied Signal AQS-18A dipping sonars and will not carry sonobouy processing equipment. Kaman has also been asked to rework 12 SH-2Fs by Turkey in a deal potentially worth $115 million. The package will also include six spare engines and spare and repair parts. Turkey will receive 14 excess U.S. Navy SH-2Fs as part of a Southern Region Amendment. Federal Aviation Administration-type certification was approved for Kaman's K-Max commercial helicopter, designed for external heavy-lift operations. The aircraft features counterrotating main rotors and no tail rotor. The first four aircraft have been delivered to companies in Oregon and Alabama, with a fifth due for delivery in November. The company's first European customer, a Swiss company, will receive their K-Max in July 1995. The 10 planned production aircraft in 1995 have all been committed.

Photronics Corp., Oakland, N.J., has been given the go-ahead by the Naval Air Systems Command for a $2.9-million option for A/U36M-1 Rapid Armament Boresighting Systems (RABS) for Marine AH-1Ws. RABS is a portable ground-support system that aligns the aircraft's weapons, targeting and navigation systems with the pilot's optical sighting gear to assure high accuracy in target acquisition.

UNC Aviation Services Division won its fourth consecutive five-year contract for $102 million to provide aircraft maintenance and logistics services for the Navy's TH-57 trainers at NAS Whiting Field, Fla. The contract covers all maintenance for 120 TH-57s.

SYSCON Corp. has been awarded a $10.5-million contract to provide the Naval Air Systems Command with site management and hardware maintenance support for its Aviation Training Support System.

X-31 Sets Record

The X-31 experimental aircraft established a new record at the Dryden Research Center by completing its 438th flight 4 August. The previous record was held by the X-29 forward-swept wing research program set in 1992. National Aeronautics and Space Administration (NASA) research pilot Rogers Smith set the record as part of the ongoing flight testing of the X-31 high angle of attack program. The aircraft has three paddles mounted around the engine nozzles to redirect the flow of exhaust gases. The moveable paddles provide more control and maneuverabilitly at high angles of attack when normal flight control surfaces are less effective. Some in-flight tests have resulted in "kill" ratios as high as 32:1 over conventional aircraft and were significantly higher than had been predicted by simulator sessions. Information gained from this program can be used in future design of highly maneuverable aircraft. The program is managed by the Advanced Research Projects Agency and the U.S. Navy. Other participants in the program are NASA, the U.S. Air Force, Rockwell International, Deutsche Aerospace and the Federal Republic of Germany.

JAST Contracts Awarded

Pratt & Whitney, Allison and General Electric have received independent $1-million contracts to perform propulsion trade studies for the Joint Advanced Strike Technology (JAST) program. The main goal is to run a ground demonstrator engine in mid-1996.

First Mixed-Gender LAMPS Detachment Deploys

HSL-44 Det 6 deployed aboard *Vella Gulf* (CG 72) in September with two female pilots as part of the crew. Lts. Elizabeth Franklin and Lynn Stroth were the first females to complete Light Airborne Multi-Purpose System (LAMPS) fleet readiness squadron training and report to an operational squadron. The ship and detachment are deployed to the Caribbean for counternarcotics operations. *Vella Gulf* is the first Aegis cruiser to complete berthing modifications for female crew embarkation.

SCLSIS

The Ship Configuration and Logistics Support Information System (SCLSIS) is a process combining previous configuration and logistics management processes into a single integrated system. The SCLSIS process updates all shipboard data related to configuration, logistics and maintenance functions within the automated data processing systems aboard the ship. This single integrated system interfaces directly with the Shipboard Non-Tactical ADP Program Organizational Maintenance Management System program. The SCLSIS system also passes configuration

data to the Weapon Systems File (WSF) at the Ships Parts Control Center which is used to determine spare parts requirements for ships. The WSF provides supply information and computes allowance support and forwards it to the ship through the Automated Shore Interface process.

Naval Aviation Museum Update

Phase IIIA construction began for the National Museum of Naval Aviation, Pensacola, Fla. It adds a seven-story entrance building and large-screen, multimedia theater/lecture hall facility. Dedication for the new addition is scheduled for 6 May 1996, which coincides with the 85th anniversary of Naval Aviation on 8 May 1996.

The selection of a producer for the premier film, made possible by the McDonnell Douglas and Northrop corporations, is in the final stages.

The Naval Aviator Monument, which will consist of seven-foot statues of five Naval Aviators, will grace the new building's entrance. The monument is progressing on schedule for the May 1996 dedication.

V-22 Gets Go-Ahead

An independent panel established by Navy acquisition chief Nora Slatkin has given approval to begin production of the controversial V-22 tiltrotor aircraft. The team looked at the development schedule, degree of technical risk and adequacy of flight tests planned for the program. Additionally, Adm. William Owens, head of the Joint Requirements Oversight Council, approved the Marine Corps requirement for the V-22; and in a separate step, the U.S. Special Operations Forces version requirement was returned to the program. Ironically, almost at the same time as the above go-aheads, Deputy Secretary of Defense John Deutch directed that the aircraft be included in possible reduction or cancellation decisions. V-22 aircraft have accumulated over 900 flight test hours.

V-22

HS-85 Becomes HC-85

Due to its new mission, HS-85 became HC-85 1 October and shifted to Commander Helicopter Wing, Reserve. In April 1993, HS-85 moved from NAS Alameda, Calif., to NAS North Island, Calif., and began assuming the target/torpedo launch and recovery mission at San Clemente Island. The changing world along with the disestablishment of Carrier Air Group 30 diminished the need for the squadron's antisubmarine warfare capabilities.

Navy, USMC Join H-53 Training

Five Navy MH-53 minesweeper helicopters arrived at MCAS Tustin, Calif., 31 August as the H-53 training of both Navy and Marines began to consolidate. With the decommissioning of HM-12, the Navy's H-53 fleet readiness squadron, the Marines have assumed the training responsibility in HMT-302. The transition will continue through this autumn, but the personnel will not relax for long because MCAS Tustin has been slated to close.

Aircraft Mishaps

Two **F-14** *Tomcats* from *Dwight D. Eisenhower* (CVN 69) collided off the N.C. coast 15 September while conducting a routine training mission. Two aviators were lost at sea when their aircraft crashed in the Atlantic Ocean. The other F-14 landed at MCAS Cherry Point, N.C., with both crewmen uninjured.

On 17 August, two **T-45** *Goshawks* from VT-21, flying as part of a four-plane formation, collided in midair near NAS Kingsville, Texas. Ltjg. Shawn Inman ejected safely from the first aircraft, was treated for minor injuries and released. Unfortunately, Ltjg. Brian S. DeHaan of Kentwood, Mich., the pilot of the second aircraft, was unable to eject and was killed in the crash. It was the first solo for both student pilots.

An HS-4 **SH-60F** *Seahawk* based aboard *Kitty Hawk* (CV 63) crashed off the coast of South Korea 3 September. All four crew members were immediately rescued and returned to the carrier.

An **F-14** from VF-84 crashed in Pamlico Sound, N.C., 26 August. Both crewmen were rescued and flown to the MCAS Cherry Point, N.C., hospital.

A Marine pilot from VMA-311 was rescued 17 August after ejecting from his **AV-8B** *Harrier*, which crashed in the East China Sea. Capt. Michael S. Gaither suffered minor injuries.

International News

China has delivered six K-8 jet trainers to Pakistan. It was the first export of the aircraft, which was developed under a 1986 agreement between the two countries.

Czech national defense minister Antonin Baudys was dismissed by President Vaclav Havel for ineffective armed forces leadership and replaced by Vilem Horan, who reported from a foreign ministry post.

Eurofighter 2000 costs have risen again for **Britain** due to accounting rule changes and costs to integrate new weapons. The latest figure for Britain's share in the development program is $5.97 billion, an increase of over $600 million from the figure given in February. Overall development costs for the four participating countries—Britain, Germany, Italy and Spain—is $66.65 billion.

The **Royal Australian Navy** will extend the service life of its seven *Sea King* maritime utility helicopters through the year 2008 under a $43-million extension program. The contract includes an avionics upgrade and airframe modification to be completed by Westland, British Aerospace Australia and several other Australian firms and will be completed by 1996. The *Sea Kings* are used for ship-to-shore resupply, support for amphibious operations, search and rescue and civil aid operations.

Austrian Saab J-350E *Draken* fighters have been fitted with Sidewinder missiles. Previously, the aircraft carried only a pair of 30mm cannons. The upgrade of all 24 aircraft began in January.

The **Iranian navy** is operating a refurbished U.S. military HH-53 helicopter, which was abandoned in Iran by U.S. forces during the aborted 1980 hostage rescue mission.

Japan's Maritime Safety Agency has received the first search and rescue (SAR) S-76 in Japan, a "C" version customized for the agency's coast guard function. The aircraft can cruise at sea level at 145 knots and has a fully coupled, four-axis autopilot with a SAR mode, a Honeywell 700 doppler radar, a Universal Navigation System UNS-1B automatic navigation system, and FLIR Systems, Inc., AN/AAQ-22 Shipborne, Airborne Forward-Looking Infra-Red equipment.

Disestablished...

VP-49 Woodpeckers

A 14 January 1994 ceremony at NAS Jacksonville, Fla., marked the disestablishment (officially 1 March) of Patrol Squadron (VP) 49 after 50 years of service. Cdr. Mark H. Anthony was the last CO of the *World Famous Woodpeckers*.

Established 1 February 1944 as VP-19 at NAS Alameda, Calif., the squadron took its PBM-3D *Mariner* seaplanes to war in the Pacific, flying combat missions within 100 miles of Japan one month after establishment. VP-19 was redesignated Patrol Bombing Squadron (VPB) 19 on 1 October 1944. The squadron was heavily involved in support of the Iwo Jima campaign in 1945. Following the war, VPB-19 provided support to Operation Crossroads, the atomic bomb tests at Bikini atoll.

In 1946, VPB-19 transitioned to the PBM-5 and moved to NAS Norfolk, Va., being redesignated VP-MS-9 (MS stood for Medium Seaplane) 15 November 1946. On 1 September 1948, the squadron was redesignated VP-49. Over the next decade, VP-49's seaplanes were heavily involved in cold war patrols. In 1955, the squadron participated in the sea trials of the world's first nuclear submarine, *Nautilus* (SSN 571), and later flew missions in support of the Mercury space program. The squadron transitioned to the P5M-1 and later P5M-2S (SP-5B) *Marlin*, changing home port to Bermuda in July 1959. Flying from Bermuda, VP-49 was heavily involved in supporting the U.S. quarantine of Cuba during the October 1962 Cuban Missile Crisis.

In May 1963, VP-49 sent a detachment to Guantanamo Bay, Cuba, for its last seaplane operations, while the rest of the squadron moved to NAS Patuxent River, Md., by 1 September 1963 for transition to the P-3A *Orion*. Soon after transition, VP-49 sent a detachment to Kindley Field, Bermuda, the first of many deployments with the P-3 over the next three decades. In 1966, VP-49 deployed to Adak, Alaska, to back-fill for Pacific Fleet squadrons deployed to the Vietnam war zone and in 1968 deployed to the war zone itself in support of Operation Market Time, the sea interdiction effort against North Vietnam.

VP-49 transitioned to the computerized P-3C in March 1970 and became the first squadron to deploy with the new aircraft, arriving in Keflavik, Iceland, in July 1970. Returning from a second deployment to Keflavik, VP-49 changed home port to NAS Jacksonville, Fla., 31 January 1972. Over the next two decades, the *Woodpeckers* were prominent in tracking the Soviet submarine force from deployment sites in the Atlantic Ocean and Mediterranean Sea and participated in UNITAS exercises with South American navies. During one Mediterranean deployment in the mid-1980s, the squadron participated in the operation to capture the hijackers of the ocean liner *Achille Lauro*.

The *Woodpeckers* transitioned to the Update III retrofit version of the P-3C in 1989 and continued to provide far-flung detachments throughout the Atlantic and Mediterranean. The squadron participated heavily in drug interdiction operations in the Caribbean. During the squadron's final deployment, VP-49 operated from Keflavik and flew the first American combat aircraft on a goodwill visit into the former Soviet Union. VP-49 also maintained a detachment in Jacksonville that supported Operation Able Manner, the effort to rescue thousands of fleeing Haitians. Upon return from Keflavik in September 1993, the *Woodpeckers* immediately assumed operations in support of the UN sanctions against Haiti. Completing over 214,000 hours of mishap-free flying, VP-49 flew its last operational sortie on 28 December 1993.

VA-36 Roadrunners

An 11 March 1994 ceremony at NAS Oceana, Va., marked the disestablishment (officially 31 March) of Attack Squadron (VA) 36 after 7 years of service. Cdr. Mark J. Himler was the last CO of the *Roadrunners*.

Originally slated to be designated VA-153 with the traditions of the former *Blue Tail Flies*, VA-36 instead carried on the traditions of the earlier VA-36 *Roadrunners*, an A-4 squadron that was dis-

established in 1970. The second VA-36 was established 6 March 1987 at NAS Oceana to form the second A-6E *Intruder* squadron assigned to Carrier Air Wing (CVW) 8 on board *Theodore Roosevelt* (CVN 71) as part of the prototype "Roosevelt Air Wing" concept. Unlike most other A-6 squadrons, VA-36 did not operate any KA-6D tanker versions.

VA-36 commenced its maiden deployment in December 1988, returning from the Mediterranean in June 1989. Its next deployment took the *Roadrunners* into combat. As part of the surge of forces into the Persian Gulf for Operation Desert Shield, VA-36 deployed in late December 1990, arriving in the region in time for the first shots of Operation Desert Storm against the Iraqi invaders of Kuwait. During the 44 days of combat, VA-36 flew 578 combat sorties against Iraqi targets in Kuwait and Iraq, dropping over 1.2-million pounds of ordnance and losing one A-6E and its crew to enemy action. The end of hostilities meant no rest for VA-36; *Theodore Roosevelt* remained in the region until June 1991, flying missions in support of UN relief efforts for Kurdish refugees in northern Iraq.

In 1992, VA-36 transitioned to the System Weapons Improvement Program version of the A-6E. In March 1993, now the only A-6 squadron with CVW-8, the *Roadrunners* began their final deployment, one that was to occupy them almost full time in "real-world" operations. VA-36 flew missions in support of UN sanctions and peacekeeping operations in Bosnia-Herzegovina as part of Operations Provide Promise, Deny Flight and Sharp Guard. On short notice, *Theodore Roosevelt* made a month-long excursion to the Red Sea in late June 1993 following a U.S. missile strike against Iraq in retaliation for a foiled assassination plot against former President Bush. VA-36 participated in the first Operation Southern Watch missions launched from the Red Sea. The *Roadrunners* returned home in September 1993, shortly after passing the milestone of 25,000 mishap-free flying hours.

VF-126 Bandits

Fighter Squadron (VF) 126 was disestablished at NAS Miramar, Calif., in ceremonies 1 April 1994 after almost 38 years of service. Cdr. Gregory D. Ingles was the last CO of the *Bandits*.

Established at NAS Miramar 6 April 1956 as Attack Squadron (VA) 126, the squadron started as an operational attack squadron equipped with the F7U-3 *Cutlass*. Aircraft problems prevented the squadron from deploying with Carrier Air Group (CVG) 12, and the squadron ended up becoming the proving ground for the Replacement Air Group (RAG) concept for Pacific Fleet attack squadrons. In 1957, VA-126 discarded its F7Us and acquired F9F-8B *Cougars* and FJ-4 *Furys*. In April 1958, VA-126 absorbed VA-54 and VA-125, formalizing VA-126's role as an attack RAG, and adding AD-5/6/7 *Skyraider* versions and the A4D-1 *Skyhawk*.

In 1959, with CVG-12 becoming the RAG as RCVG-12, VA-126 shed its A4D training role to a new VA-125 and its *Skyraider* training to VA-122, becoming the RAG squadron for only the FJ-4. As the *Fury* was being retired from fleet service, VA-126 assumed the mission of all-weather instrument training from VF-121, with only the F9F-8T (TF-9J) *Cougar* on strength by the end of 1961. When NAS Lemoore, Calif., opened in 1961, VA-126 established an instrument training detachment there, which became VA-127 on 15 June 1962.

The *Seahawks* (as VA-126 was then known) began to evolve into their ultimate role as an adversary squadron in October 1964 when the squadron flew its TF-9Js as adversaries against fleet fighter squadrons in Operation Hardnose. This role led to the redesignation of the squadron to VF-126 on 15 October 1965. Throughout the Vietnam War, VF-126 continued to provide adversary training to the fleet F-4 and F-8 squadrons that deployed to the war. The squadron began replacing its *Cougars* in April 1967 when its first two-seat TA-4F *Skyhawks* arrived. In 1972, VF-126 included Dissimilar Air Combat Training for VF-124 (the F-14 Pacific Fleet Readiness Squadron) as one of its missions. By 1978, VF-126 was flying a mixture of A-4E/Fs and TA-4J *Skyhawks*.

In 1978, VF-126 was assigned to conduct the Out-of-Control Flight Training program to train fighter crews in spin recovery. Several T-2C *Buckeye* trainers were assigned for this role, which lasted until December 1993; during 12 years, the squadron performed over 52,000 out-of-control maneuvers without a single mishap.

In 1980, adversary missions had become the squadron's primary mission, and in 1981 VF-126 changed its nickname to the *Bandits*. The squadron soon added F-5E and T-38A jets to its stable to provide supersonic adversaries for fleet squadrons. In 1984, the *Bandits* developed and implemented the renowned Fleet Fighter Aircrew Readiness Program, which provided fleet fighter squadrons with a basis of tactical training for their workup cycles.

In 1986, VF-126 replaced its F-5s with F-16N *Fighting Falcons*. In 1992, all remaining A-4E and fleet standard A-4Fs were retired, leaving the *Bandits* with a fleet that included the A-4F "Super Fox," A-4M, TA-4F/J, F-16N and T-2C. Upon disestablishment, VF-126's adversary role was assumed by other units, including reserve Fighter Composite Squadron 13.

Thanks to LCdr. Rick Burgess, USN (Ret.), for contributing the disestablishment articles.

The following listing was submitted by Capt. A. W. Clark III, Commander Helicopter Antisubmarine Light Wing, U.S. Atlantic Fleet, in response to "1993 The Year in Review," *NANews*, Jul–Aug 94. A large part of Naval Aviation is represented by the LAMPS (Light Airborne Multi-Purpose System) detachments deployed on surface combatants. Each carrier battle group averages 4–5 LAMPS dets, while many detachments are aboard surface combatants that deploy individually around the world.

Carrier and LAMPS Ship Deployments, 1993

HSLWINGPAC

Nimitz (CVN 68) Battle Group
2 Feb–29 Jul 1993
Indian Ocean/Persian Gulf
(Southern Watch)

Squadron	Ship
HSL-47 Det 4	*Lake Champlain*
HSL-33 Det 5	*Truxton*
HSL-37 Det 10	*Leftwich*

Constellation (CV 64) Battle Group
27 May–22 Jul 1993
Around Cape Horn (east to west)

Squadron	Ship
HSL-33 Det 6	*Duncan*

Lincoln (CVN 72) Battle Group
15 Jun–15 Dec 1993
WestPac/Indian Ocean

Squadron	Ship
HSL-43 Det 1	*Ingraham*
HSL-43 Det 3	*Princeton*
HSL-33 Det 7	*Fox*

Independence (CV 62) Battle Group
17 Nov 1993–17 Mar 1994
WestPac/Indian Ocean

Squadron	Ship
HSL-51 Det 1	*Mobile Bay*
HSL-51 Det 3	*Curts*
HSL-51 Det 4	*Bunker Hill*
HSL-51 Det 5	*McClusky*

Independent Steamers
1 Jan 1993, HSL-51 Det 2, *Rodney M. Davis*, Persian Gulf/Operation Southern Watch
3 Jan 1993, HSL-37 Det 5, *Horne*, Persian Gulf/Operation Southern Watch
18 Jan 1993, HSL-45 Det 5, *Chancelorsville*, Persian Gulf/Operation Southern Watch
6 Apr 1993, HSL-49 Det 1, *Ford*, Persian Gulf/Operation Southern Watch
24 May 1993, HSL-33 Det 6, *Duncan*, Caribbean Sea Drug Interdiction
7 Jun 1993, HSL-51 Det 6, *O'Brien*, Persian Gulf/Operation Southern Watch
9 Jul 1993, HSL-49 Det 5, *Elliot*, Persian Gulf/Operation Southern Watch
9 Jul 1993, HSL-47 Det 9, *Rentz*, Persian Gulf/Operation Southern Watch
16 Oct 1993, HSL-43 Det 8, *John Young*, Persian Gulf/Operation Southern Watch
16 Oct 1993, HSL-33 Det 1, *Callaghan*, Persian Gulf/Operation Southern Watch (last deployment of SH-2F LAMPS MK I in active duty Navy)
18 Oct 1993, HSL-47 Det 6, *Gary*, Persian Gulf/Operation Southern Watch

HSLWINGLANT

Kennedy (CV 67) Battle Group
7 Oct 1992–7 Apr 1993
Mediterranean

Squadron	Ship
HSL-42 Det 1	*Caron*
HSL-42 Det 3	*Leyte Gulf*
HSL-42 Det 8	*McInerney*
HSL-44 Det 6	*Halyburton*
HSL-48 Det 7	*Gettysburg*

America (CV 66) Battle Group
11 Aug 1993–2 Feb 1994
Mediterranean

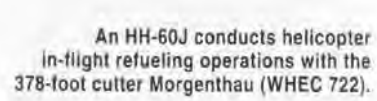
Squadron	Ship
HSL-42 Det 5	*Normandy*
HSL-44 Det 2	*Simpson*
HSL-46 Det 9	*Monterey*
HSL-48 Det 5	*Boone*

Roosevelt (CVN 71) Battle Group
11 Mar–8 Sep 1993
Mediterranean

Squadron	Ship
HSL-42 Det 7	*Hue City*
HSL-44 Det 8	*Nicholas*
HSL-46 Det 1	*Kauffman*
HSL-48 Det 2	*Hawes*

Independent Steamers
30 Oct 1992, HSL-44 Det 1, *Stump*, MEF 1-93
30 Oct 1992, HSL-44 Det 10, *Samuel B. Roberts*, MEF 1-93
15 Jan 1993, HSL-48 Det 3, *Moosbrugger*, SNFL 1-93
16 Feb 1993, HSL-46 Det 2, *Peterson*, MEF 2-93
16 Feb 1993, HSL-46 Det 8, *DeWert*, MEF 2-93
26 May 1993, HSL-48 Det 1, *Spruance*, MEF 3-93
20 Jun 1993, HSL-44 Det 3, *Elrod*, SNFL 2-93
17 Jul 1993, HSL-48 Det 9, *John Rodgers*, UNITAS 34
6 Aug 1993, HSL-42 Det 2, *Klakring*, Counterdrug Interdiction, Caribbean Sea
3 Sep 1993, HSL-42 Det 4, *Hayler*, MEF 4-93

The Future of Coast Guard Aviation



An HH-60J conducts helicopter in-flight refueling operations with the 378-foot cutter Morgenthau (WHEC 722).

By Capt. G. R. McGuffin, USCG, Chief of Aviation Division, U. S. Coast Guard Headquarters

The Coast Guard is in the midst of a transition from a period of growth and expanding missions to a time of declining budgets and critical examination of our responsibilities consistent with a new national emphasis on the domestic economy and fiscal accountability. At the same time, the Coast Guard has been presented with numerous operational exigencies that taxed our capabilities, such as alien migration interdiction operations on several fronts, response to natural catastrophes and an ever-increasing emphasis on environmental enforcement. These experiences have shown us the need for adaptable forces to meet rapidly changing requirements.

Responding to this new fiscal and operational environment, the Commandant of the Coast Guard initiated a review of Coast Guard Aviation organization and management to identify every opportunity for improvement. These efforts to optimize focused on organization, planning, marketing and the aviation culture.

The common thread running through each aspect of the study is the need to align aviation resources and capabilities with program and customer needs. To address these needs, the Coast Guard has undertaken an exhaustive mission analysis of which our operational aircraft—the HH-65A *Dolphin*, HH-60J *Jayhawk*, HU-25 *Falcon*, HC-130 *Hercules* and the RG-8 *Condor*—play a significant part. The results of this analysis will aid us in addressing important issues that Coast Guard Aviation will be facing in the near future. Any change in the size of the aircraft inventory or replacement of aging aircraft must fill a functional requirement, a requirement that will be identified and defined by the mission analysis.

As several aircraft types approach the end of their service lives, the decision whether to procure new aircraft or extend the service lives of the existing ones must be addressed. The specter of replacing an aging aircraft fleet is exacerbated by a Capital Investment Plan that bulges from major cutter replacements at the same time. These decisions cannot be made without a clear blueprint for the future.

The Coast Guard has moved to adapt and improve the effectiveness and efficiency of current aviation operations through a variety of changes. These changes have been in response to mandates from several different sources.

Government mandated changes:

– Global Positioning System (GPS). Congress has mandated that all government aircraft be equipped with GPS by the year 2000. The Coast Guard will be the first major agency to have GPS installed in all aircraft. Anticipate complete fleet integration by the end of FY 1998.

– Traffic Alert and Collision Avoidance System (TCAS). Anticipate complete TCAS installation on Coast Guard aircraft by end of FY 1998.

Fiscally mandated changes:

– Decommisioning of Air Facility, St. Augustine, Fla., and the return of the 3 E-2Cs to the Navy in October 1991.

– Transfer of the EC-130V airborne electronic warfare aircraft to the Air Force on 1 October 1993.

– Reconfiguration of the HU-25C interceptor aircraft for multimission duties by moving the forward-looking infrared sensor forward to allow use of the drop hatch.

Operationally mandated changes:

– Expanding the ship/helo capability. Completed dynamic interface tests and ship/helo quals of H-60 on 270- and 378-foot cutters.

– Re-siting of aircraft to optimize efficiency. Resulting from an extensive aviation review conducted in 1992, we have taken steps to place the appropriate asset in the area that it will provide the most benefit, reduce excess capacity and improve efficiencies in the Coast Guard. The plans to accomplish this will include: re-siting aircraft to different air stations, closing Air Station, Chicago, Ill., and replacing it with a detachment during peak search and rescue season, laying up several HU-25s, optimizing air station staffs, and increasing HH-65A days deployed aboard ship.

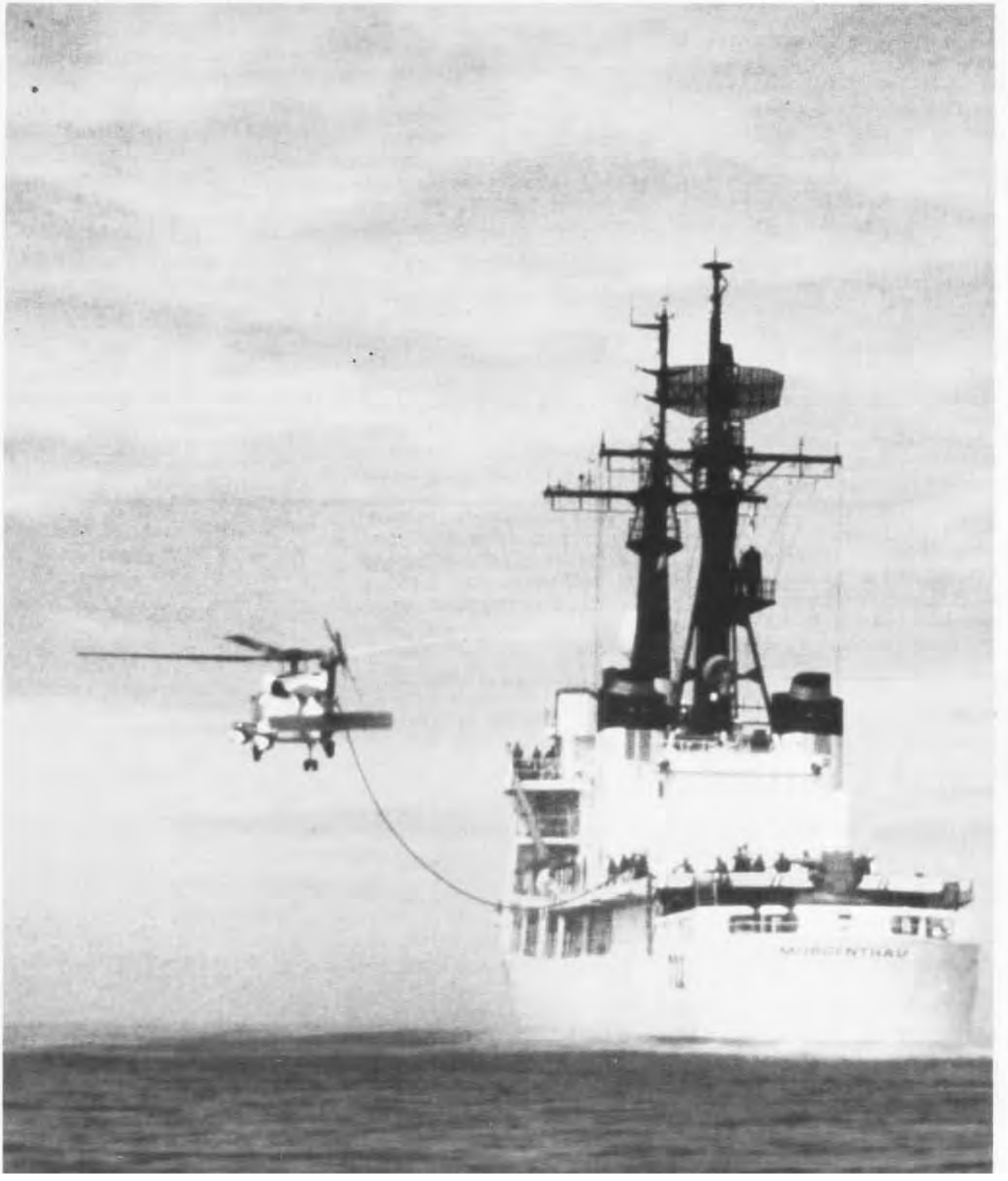
The Coast Guard is also dealing with various personnel issues to enhance our efficiency. We currently have an excess of pilots and also must draw down the size of our enlisted work force. The problem is due in part from the return of E-2Cs to the Navy and the retirement of several HU-25s. Policies aimed at dealing with the excess of pilots are: increasing out-of rate tours, temporarily closing the Direct Commission Aviator program, and limiting the number of students entering flight school to approximately 50 per year.

The High Year Tenure program has an impact on the enlisted aircrews. Enlisted personnel in the Coast Guard

now are required to be advanced by certain gates in their career or be separated from the Coast Guard. For example, E-4s must advance by the 10-year point, E-5s by 20 and E-9s by 30 years. Aviation personnel account for 13 percent of all Coast Guard personnel. The initial separations as a result of this policy will cause Coast Guard Aviation to lose 240 personnel, which reflects 25 percent of the entire list of affected personnel, the majority of which are at the E-4 level. The short-term result of this substantial reduction will be a loss of experienced aircraft maintenance personnel. In the long run, we will get the force structure down to the required level of approximately 2,800 personnel, and that will provide more opportunity for advancement.

While there are many changes taking place in the aviation community, it is recognized that our greatest asset continues to be our people. With that in mind, we shall sail into the 21st century as a more efficient organization without compromise of our capabilities.

Semper Paratus! ■



Direct Deployment

By PA3 Gary Openshaw, USCG

Sometimes an accident causes a change or improvement. In the case of a Coast Guard Air Station (CGAS), North Bend, Oreg., rescue swimmer, his hard lesson learned identified a need for a new method of hoisting survivors.

The incident which sparked the change occurred in July 1991 when a North Bend rescue swimmer fell 125 feet down a cliff while attempting to assist a stranded hiker. The rescue swimmer had detached himself from the helicopter hoist cable to maneuver the rescue basket. He fell after losing his footing on the rocky cliff face. Luckily, he survived the fall with only minor injuries.

This accident brought to light the problem of detaching the rescue swimmer from the helicopter in some situations and the need for different equipment for an attached deployment.

"The incident showed us that we needed to look at a new method of hoisting for our [helicopter] crews," said Lieutenent Commander Richard Wright, Chief, Aviation Life Support Branch. "I contacted the Aviation Training Center in Mobile, Ala., and asked them to find a solution."

"The British [Royal Navy and Royal Air Force] have used a seat harness and quick strop for cliff rescues for years," said LCdr. Wright. "We looked at using their version, but it was more cost effective to have our own made. Also, there were certain modifications that would allow the rescue swimmer to sit more upright." The new seat harness puts the rescue swimmer into a sitting position, which allows a better field of vision than the traditional device and is more comfortable when deployed for extended amounts of time.

"It can be uncomfortable hanging by your armpits," said ASM1 Darren Reeves of CGAS San Francisco, Calif. "The new seat harness allows you more comfort when you are deployed for a long time." The seat harness permits the rescue swimmer to move in a rappelling fashion. It also might have saved the North Bend rescue swimmer from his painful accident.

The quick strop is similar to the standard strop, except it is smaller, less buoyant and can only be used when accompanied by the rescue swimmer. The swimmer is deployed with the quick strop over the shoulder. Once on scene, the quick strop is put around the victim and is held in place around the chest by a mechanical keeper.

But Wright stressed, "This is not a cliff rescue method alone. The direct deployment has several uses." Some examples include surf, cliffs, ice, high winds, swift water currents, predators, kelp beds, ice-choked waters and swamp/marsh areas.

Perhaps the biggest advantage to direct deployment is the speed in which a hoist can be performed. This evolution reduces the amount of risk and time a rescue swimmer is exposed to hazards during certain search and rescue scenarios.

An HH-60J conducts direct deployment rescue swimmer operations.

"Under traditional procedures, a hoist took three to four minutes. With direct deployment, the whole thing only takes about half the time," said Reeves.

Wright noted, "Last year rescue swimmers from CGAS San Francisco, Calif., were timed doing direct deployments averaging 20 seconds."

ASMCM Darrell Gelakoska, Rescue Swimmer Training Division Branch Chief, sees the addition of the attached deployments as an added asset to the rescue swimmer program. "Direct deployment is not replacing standard procedures; it is just another tool in the toolbox."

"Rescue swimmers have been used in the Coast Guard since 1985. We see this as part of the evolution of the rescue swimmer program," added Wright. "We feel we can handle any situation out there, but we are receptive to new ideas."

Training for the direct deployment method and equipment concluded 11 June at CGAS San Francisco. Unit instructors from all HH-60J *Jayhawk* air stations around the country attended seminars and were given a hands-on opportunity to test direct deployment on the cliffs in San Francisco. They are now able to train their unit's aircrews to use direct deployments as an option for search and rescue.

The rescue swimmer training team conducted the same training for HH-65A *Dolphin* crew members in Astoria, Oreg., bringing all air stations on line to use their new lifesaving "tool." ■

Long Range Command and Control Aircraft

On 27 July, the U.S. Air Force transferred a C-20B Gulfstream III to the Coast Guard. It is anticipated that the C-20B will be placed in service as the Coast Guard's Long Range Command and Control Aircraft (LRCCA) in early 1995. The aircraft is presently undergoing communications and navigation system installations and will be painted in late 1994. The C-20B will replace the Coast Guard's 26-year-old VC-11A Gulfstream II. The VC-11A had deficiencies in structural integrity, noise abatement, avionics, communications, passenger capacity and range. The VC-11A had reached physical, technological and programmatic obsolescence. The C-20B will provide increased range, and the six-year-old aircraft is in excellent condition. All are anxiously awaiting the LRCCA's anticipated 1 February 1995 operational date.


Coast Guard Air Stations
Kodiak, AK
6 HC-130H
4 HH-60J
4 HH-65A
Sitka, AK
3 HH-60J
Port Angeles, WA
3 HH-65A
Astoria, OR
3 HH-65A
2 HU-25
Traverse City, MI
3 HH-60J
Detroit, MI
3 HH-65A
Cape Cod, MA
4 HH-60J
6 HU-25
North Bend, OR
5 HH-65A
Humboldt Bay, OR
3 HH-65A
Brooklyn, NY
4 HH-65A
Chicago, IL
2 HH-65A
Cape May, NJ
3 HH-65A
San Francisco, CA
3 HH-60J
Sacramento, CA
4 HC-130H
Washington, DC
1 VC-11A
Elizabeth City, NC
3 HH-60J
4 HC-130H
Los Angeles, CA
3 HH-65A
San Diego, CA
4 HH-65A
3 HU-25
New Orleans, LA
5 HH-65A
Savannah, GA
6 HH-65A
Barbers Point, HI
3 HC-130H
3 HH-65A
Houston, TX
4 HH-65A
Borinquen, PR
4 HH-65A
3 HC-130H
Corpus Christi, TX
3 HH-65A
3 HU-25
Mobile, AL
3 HH-60J
8 HH-65A
5 HU-25
Clearwater, FL
12 HH-60J
6 HC-130H
Miami, FL
8 HU-25
9 HH-65A
2 RG-8A
1 CASA 212

CASA 212

HC-130H Hercules

By LCdr. Jim O'Loughlin, USCG

The HC-130H *Hercules* is the venerable workhorse of Coast Guard Aviation. There are a total of 30 airframes in the USCG inventory. While it has reached the status of a "mature" airframe, particularly in comparison to other Coast Guard aircraft, it is continually modified and improved through installation and development programs for new equipment so that it can be more mission capable. Recent programs include:

– Installation of the APS-137 Inverse Synthetic Aperture Radar has been completed for the entire fleet. This radar, the same radar that is used for the antisubmarine warfare mission in the Navy P-3 and S-3, has greatly improved the C-130's efficiency and capability to prosecute any mission involving searching or surveillance.

– The first aircraft is going through the prototype installation of an integrated Control Display Navigation Unit (CDNU) and Global Positioning System. The CDNU is essentially area navigation, allowing the majority of the navigation and communication tasks to be performed through a single display unit. While this concept is hardly new, it is a great change for most of the Coast Guard C-130 community and will almost certainly require it to address cockpit task management. For the majority of our C-130 fleet, there is no position information available directly to the pilots once the aircraft is out of VHF omnidirectional/tactical air navigation range, as is the case in much of our maritime surveillance missions. The pilots relied almost exclusively on the navigator. With the CDNU, the pilots will have the capability to perform most of the navigation functions from their seats. Clearly, there will have to be consideration of the formal and informal interaction between the navigator and the pilots. The GPS/CDNU installation on the C-130 fleet will run through FY 1998.

– Traffic Alert and Collision Avoidance system (TCAS) is currently being installed on the C-130 as it is on the rest of the Coast Guard's aircraft. The C-130 TCAS will have conflict resolution advisory capability. Coast Guard aircraft frequently operate from airports in high-density traffic areas, and TCAS will enhance safety and give pilots the opportunity to be aware of other aircraft around them to a greater degree. The TCAS installation is scheduled to be completed in early FY 1996.

The age of the Coast Guard C-130 fleet ranges from 21 years for the oldest airframe to 6 years for the newest one. The oldest models are approaching the end of their service life. The Coast Guard is in the initial stages of grappling with the issue of extending the service life of the aircraft versus procurement of new aircraft. There are several variables that are affecting this decision. The Coast Guard is faced with several major platforms, including cutters, that will be reaching the end of their service lives. With the current austere budget climate facing government agencies, hard decisions will have to be made. To provide a blueprint for these plans, the Coast Guard is in the midst of an exhaustive mission analysis. Once mission requirements are identified, the appropriate platform to fill these requirements will be chosen. Gone are the days of purchasing a specific number of aircraft purely based on the size of the fleet of the aircraft being replaced. Even with this hazy forecast, we are confident that the C-130 will have a significant role in the Coast Guard's future.

HC-130H

HH-65A Dolphin By LCdr. David Poulsen, USCG

HH-65A

The backbone of Coast Guard Aviation is the HH-65A *Dolphin*. Acquisition of this state-of-the-art helicopter began in 1983 to replace the aging fleet of HH-52A amphibious helicopters. Since then, a total of 96 airframes have been delivered and the HH-52A retired from the inventory. While initially burdened with some growing pains, the HH-65A has overcome those and now, with the exception of the two RG-8s, maintains the best mission-capable rate of all Coast Guard aircraft.

The HH-65, a product of Aerospatiale Helicopter Corporation (Eurocopter France), is a twin-engine, short-range recovery helicopter designed for short-range search and rescue operations. Secondary mission roles are patrol and observation, passenger transport and cargo hook operations. It is capable of operating from prepared and unprepared areas in visual and instrument flight conditions, day or night. It is powered by two Lycoming LTS101-750 turboshaft engines. It has a 4-blade main rotor system and an 11-blade shrouded tail rotor. It is equipped with two independent hydraulic systems to provide power for the flight controls, retractable landing gear and a 600-pound-capacity rescue hoist. The HH-65A has a mission control unit, flight director system and automatic flight control system. Additional equipment includes a search radar, environmental control system, emergency flotation system, a 2,000-pound capacity cargo hook and a 3.5-million candlepower controllable searchlight. Its radius of action is 150 nautical miles with 20 minute on-scene loiter time.

The HH-65A has the capability to transmit or receive on four different radios covering the spectrum of LO-FM, HF-AM/LSB/USB, VHF-AM/FM and UHF-AM/FM. The capability to transmit in a "voice-privacy" mode on VHF-FM and secure on UHF has been added. The advanced avionics suite has the capability to allow the helicopter to shoot fully coupled instrument approaches in zero/zero down to 50 feet. When over the water and no instrument approach is available, the mission computer unit will generate its own approach, oriented into the wind, with a standard procedure turn, five-degree glidescope terminating in a stabilized hover (adjusted for current winds) at 50 feet.

Since its delivery, the HH-65A has undergone many upgrades to enhance its mission effectiveness. Global Positioning System receivers have been integrated into the navigation package in about 70 percent of the operational aircraft. To reduce the hazards associated with securing a helicopter to the deck of a pitching cutter, a hydraulically actuated decklock system, called TALON, has been installed in about 90 percent of all operational aircraft.

In 1985, the Rescue Swimmer program began and now all units with helicopters assigned are rescue swimmer capable. The rescue swimmer was added to the standard crew of a Coast Guard HH-65A on search and rescue missions. This greatly enhanced the capability of the crew, because they no longer had an amphibious aircraft that could land in the water to help incapacitated persons. The cost of this capability is a shorter operating range, since fuel load must be reduced to accommodate the swimmer and remain within maximum allowable gross weight. Initiatives are under way, however, to recapture that lost fuel load. The main gear box is being upgraded so the maximum gross weight of the helicopter can be increased from 8,900 pounds to 9,200 pounds.

HH-60J Jayhawk

By Cdr. Tom Sparks, USCG

HH-60J

The HH-60J *Jayhawk* fills the Coast Guard's medium-range recovery aircraft role. It has been operational in the Coast Guard fleet since July 1991. The *Jayhawk* has an unrefueled radius of 300 nautical miles, with 15 minutes on-scene time, plus reserve. This gives it the longest unrefueled range of any H-60 helicopter.

The *Jayhawk* is a variation of the Navy's *Seahawk*, and it is most similar to the HH-60H combat search and rescue/naval special warfare helicopter. In addition to its long range, the *Jayhawk* is equipped with a weather radar, forward-looking infrared sensor, night sun searchlight and is suitable for flight with night vision goggles.

This combination of range and sensors makes the HH-60J a very capable aircraft for most Coast Guard missions. It is used most frequently for law enforcement patrol, including drug interdiction, fisheries patrols, migrant interdiction and pollution patrols. The aircraft's range, endurance and hoist capability also makes it an outstanding rescue platform, with many saves at sea, in remote mountain locations and in extreme weather conditions.

The power provided by the HH-60J's two T700-GE-401C engines gives the *Jayhawk* a great lift capability. This has allowed Coast Guard HH-60Js to transport navigational aid structures weighing up to 4,000 pounds to remote locations, to pluck entire crews from sinking boats or to carry law enforcement teams to the site of a drug bust.

Like other Coast Guard aircraft, the *Jayhawk* can communicate in crypto or clear modes on HF, VHF and UHF bands. Its Global Positioning System receiver and ASN-150 tactical navigation system give the *Jayhawk* the ability to prosecute a search. Several search and rescue patterns can be generated by the onboard computer to allow thorough coverage of a search area.

The HH-60J's tremendous capability allows the Coast Guard to better serve the maritime community into the 21st century.

HU-25 Falcon

By Cdr. Phil Coletti, USCG

In 1986, the Coastal Defense Authorization Account funded the "Nightstalker" Air Interdiction Sensor program. Nine of the Coast Guard's 41 HU-25 aircraft were modified to perform the air intercept mission. The nine aircraft were designated HU-25Cs after installation of the APG-66 interceptor radar and WF-360 forward-looking infrared (FLIR) sensor. The HU-25C modification entailed removing the drop hatch and installing a FLIR turret and plug in its place. The decision was based on ease of installation and a need to employ the FLIR as quickly as possible. Unfortunately, the modification eliminated the ability to drop items and, thus, diminished the multimission capability of the aircraft.

HU-25

All nine HU-25Cs now will be modified to multimission aircraft during the next 30 months. The modification will involve relocating the FLIR turret and reinstalling the drop hatch. This modification will enable the HU-25Cs to retain full air interdiction capability while restoring drop capability. All nine HU-25Cs should be modified by the summer of 1996.

Additionally, all operational HU-25s will have Traffic Alert and Collision Avoidance Systems and Global Positioning Systems (GPS) installed during the next year. The GPS upgrade has been much awaited. The GPS's accuracy will greatly enhance prosecution of search and rescue cases. Additionally, the HU-25 role in enforcing U.S. laws and treaties will benefit from GPS. In particular, drug interdiction and marine environmental and fisheries enforcement cases will be prosecuted with greater accuracy.

RG-8 . . . Coast Guard Goes Stealth

One of the Coast Guard's many missions is the Enforcement of Laws and Treaties (ELT) on, under and over the high seas and waters subject to the jurisdiction of the U.S. In an effort to stem the flow of illegal drugs into this country, the Coast Guard needed a covert surveillance platform to aid in this mission. The RG-8 was the answer. Originally a single-engine aircraft, a modification program is under way to add a second engine. This "twin" will enhance the crew's safety margin while operating in the night offshore environment.

The new modified RG-8 is a twin-engine, low-wing, fixed-gear monoplane built by the Schweizer Aircraft Corporation. It is a derivative of a formerly single-engine motor glider model, which proved the concept of a sensor-equipped aircraft capable of high-endurance and covert surveillance during both day and night conditions. The addition of a rear-mounted second engine is expected to extend the operating environment into which this aircraft can be deployed. Two RG-8s are based at Coast Guard Air Station, Miami, Fla.

The strengths of the modified RG-8 include endurance, stealth, low cost and easy deployability. It operates at speeds and altitudes comparable to a helicopter at a fraction of the hourly cost and without attracting attention due to noise or downwash. The aircraft's high aspect ratio wings allow loitering at low power settings. Special mufflers, large diameter propellers and geared engines provide ultra-quiet operation. A low-visibility, nonradar-reflecting gray paint scheme enhances the ability to operate virtually undetected above 1,500 feet. This aircraft is not utilized for passenger or cargo transport.

The crew consists of a single pilot and a sensor operator. The aircraft is optimized for endurance. Normal patrol speed is approximately 100 knots with a maximum speed of 140 knots. Maximum range is approximately 600 nautical miles. It can remain airborne up to six hours and still land with the minimum required fuel reserve.

The aircraft is capable of operating at altitudes up to 12,000 feet. Its gross weight is 5,300 pounds. The 335-horsepower Teledyne Continental piston engines use 100LL avgas, and the maximum fuel capacity is 100 gallons.

RG-8

The cockpit is well equipped with excellent navigation and communication capabilities. The stand-alone tactical navigation computer receives primary long-range input from the Global Positioning System (GPS) and OMEGA. A separate area navigation system combines standard VHF omnidirectional radio/tactical air navigation and Localizer/Instrument Landing System functions, and may be coupled to the autopilot.

The communications suite consists of dual VHF radios, VHF-FM with DES secure mode, HF with ANDVT, and UHF with KY-58 secure capability. The modified RG-8 has a DF-301 for radio direction finding capability.

The primary sensors on the modified RG-8 are a Westinghouse WF-360TL forward-looking infrared (FLIR) sensor and a laser illuminated low-light level video camera also located in the FLIR turret. This sensor package provides both visual and infrared imagery which can be permanently recorded (along with radio communications and GPS position annotation) on videotape. The cockpit uses Night Vision Goggle (NVG)-compatible lighting and the aircraft is certified for Level I NVG operation. The bubble-type canopy provides excellent visibility and facilitates photo intelligence collection with simple hand-held cameras. The modified RG-8 is equipped with an APN-215 radar and a WX-1000+ stormscope for weather avoidance.

A typical flight profile entails the modified RG-8 flying night surveillance in conjunction with a surface asset. Routine missions include drug interdiction, marine environmental protection, fisheries enforcement and alien migration interdiction. The aircraft can covertly surveil an area and pass detailed information on contacts of interest to the vessel. Prior to the appearance of the surface asset, the modified RG-8 covertly records the suspect's actions. The excellent resolution of the recorded imagery and the precise navigation capability provides compelling documentation of illegal maritime activities.

The aircraft can be deployed on short notice to virtually any location with a 3,000-foot runway and available avgas. It requires no special support facilities. A specialized support van may be driven to the base of operations, or all support materials can be shipped ahead of the aircraft. The aircraft has minimal anti-ice capability so it is prohibited from flying in icing conditions.

The first modified RG-8 aircraft is under construction at Schweizer Aircraft; its first operational Coast Guard missions are planned for early 1995.

Cigars and Rough Water

By Cdr. Ken Bilderback, USCG (Ret.)

Back in 1949 our commanding officer, Captain Donald "Mac" MacDiarmid, talked the Navy into loaning a PBM-5 seaplane to Coast Guard Air Station (CGAS), San Diego, Calif., to determine the best way to land a seaplane or to ditch a fixed wing landplane in the open sea. He also talked the Martin Aircraft Company into sending two technicians to San Diego. They installed gauges on the PBM-5 at stress points on the wings and hull to measure the pounding that the aircraft would take on various headings and sea conditions during landings.

Capt. Mac and his favorite copilot, John "the Greek" Vuckic, initiated the open-sea landing program. The pilots at CGAS San Diego were then brought into the test program on a voluntary basis to record a wider range of reactions. At this stage of the tests, Capt. Mac was in the copilot's seat for all of the landings and takeoffs. While the air station pilots (some had never made an offshore landing before) ricocheted, splashed, pounded and skipped across the hills and valleys of an unplacid Pacific, Capt. Mac would sit there smoking his cigar as if he were at home in his easy chair.

Meanwhile in the waist compartment, the three or four crewmen held on with white knuckles. Some were white to the elbow.

Usually three pilots went along with Capt. Mac. After one had made his series of landings and takeoffs, he would rotate with the pilot who had been riding with the crew in the waist compartment. The pilot who had been observing from the navigator's position would move into the pilot's seat. When the pilots rotated, the crew back aft would invariably ask, "Who is flying it now?" At times the knuckles would start bleaching even before the takeoff was started. Riding back aft gave the pilots a good idea of the stress to which the crew was subjected, and some of those white knuckles were mine.

It was rumored that Capt. Mac had told our barber that the only way he could find the limit for a rough sea landing was to crack up a plane. During each landing, the crew wondered how close they were to that limit.

In those ancient times, our survival equipment consisted of inflatable life jackets and life rafts. Survival suits and crash helmets were unheard of. Seat belts and shoulder harnesses were worn by the pilots—seat belts only for the navigator, radioman and flight engineer. The rest of the crew braced themselves and hung on for dear life.

Commander (later Rear Admiral) Charlie Tighe, a superb exec, kept the air station on an even keel, permitting Capt. Mac the freedom to devote most of his time to the offshore landing project. He would breeze into his office occasionally to catch up on the news, sign a few papers and replenish his supply of cigars.

Capt. Mac was cool and unflappable. Once, when we were tearing down the runway at Lindbergh Field in a PBM-5A, he dropped his cigar. He let go of the controls and started looking for the cigar under the seat. I completed the takeoff and had the gear up before he assumed command, with the cigar in its proper location.

One day in a PBM-5A, Charlie Tighe was flying with Capt. Mac. Charlie had a tough time getting the nose out of the water. It took both pilots on the yoke to lift the nose up for takeoff. They were able to land back at Lindbergh Field without further incident. Inspection showed that one end of one of the nose wheel doors had become detached, allowing the wheel well to fill with water. That was the type of structural failure in which the Navy's Bureau of Aeronautics was interested. By that stage of the program, the preferred rough water technique had been developed, and as time passed, additional aircraft were provided by the bureau for rough water evaluation. The PBM-3, PBM-5, PBM-5A, P5M and UF aircraft were evaluated.

Before making our first open-sea test landings, Capt. Mac would give us a quick course in oceanography. On

Capt. D. B. MacDiarmid

that particular day, he pointed out the large major swell coming down from the Aleutians. Another swell system rolled in from the southwest, generated by a low pressure area in the direction of Hawaii. Other storms would send swells in our direction, but on that day we saw only the two systems. From our altitude of 1,500 feet, the two systems looked like a checkerboard. Each swell system was traveling through the other. Occasionally, due to the difference in swell speed and the distance between crests of the two systems, one system would partially fill the trough between the crests of the other swell system. This momentarily formed a relatively smooth area where we would attempt to make a landing.

Local wind conditions formed waves that superimposed on both swell systems without influencing their pattern. When landing, we disregarded the wind direction unless it was blowing over 20 knots. We landed into the wind and parallel to the major swell system, if possible.

Our crash boat would be standing by near a swell height gauge in the

offshore landing area. The gauge, brought out and retrieved each landing test day, consisted of a length of pipe capped at both ends and marked in feet. A dampening plate, attached to the lower end, held the gauge upright and prevented it from moving up and down with the swells. During aircraft landings, the crash boat crew would record the height and speed of the major swells and calculate swell speed according to a formula.

Some landings were made with the swells 18 feet high and having a speed of 48.5 knots. The pilots who flew with Capt. Mac on this project kept a record of their landings and takeoffs along with their comments. The Martin Aircraft technicians used various instruments to record data for each landing and takeoff. Capt. Mac didn't keep records. He hated being a clerk.

To better understand the force within a swell, we learned from Bowditch that a four-foot swell moving at 30 knots and striking a coast will expend more than 35,000 horsepower per mile of beach in kinetic energy. Those 55-foot waves in the Aleutians became fast-moving swells as they passed San Diego southbound, increasing in speed, reducing swell height and increasing in distance between crests.

Landings and takeoffs into the fast-moving major swell system were quickly ruled out. Imagine, if you will, 24 tons of nuts and bolts neatly wrapped in a thin layer of aluminum colliding head on with a fast-moving mound of water that is packed with churning, tossing and heaving kinetic energy. Something has to come unglued. And it did several times. One PBM was lost. (I missed that one). Maybe the barber had the straight scoop after all about testing until destruction.

Prior to these offshore tests, the technique used by most seaplane pilots for landing in rough water was to touch down in a nose-high stall attitude with power off. The flight control wheel was held all the way back until the hull came

A PBM-5G makes a jet-assisted takeoff from CGAS San Diego, Calif.

off the step and the nose dropped to a level attitude. This procedure was satisfactory in light seas. The bad feature was that the pilot was committed to land. If the aircraft was thrown back into the air again by swell or wave action with its nose high and below stall speed, application of throttle would only make the bounce higher and the next touchdown harder than the first. A porpoising action would then begin which, when combined with prop torque, could end in serious aircraft damage.

The best landing or ditching technique was found to be parallel to the major swells and in the direction that the secondary swells were traveling. The next best choice was landing in the direction that the major swells were traveling and parallel to the secondary swell. Note that landing into any swell was avoided whenever possible. This applied to all aircraft and landing speeds. When winds were over 20 knots, the only choice was to land within a 40-degree arc centered on the wind direction. The aircraft was headed into the wind as long as possible to reduce drift, then turned either left or right about 20 degrees just before touchdown—like landing a fixed wing aircraft on a crosswind runway. Here again, the idea was not to smash directly into the seas.

The aircraft was leveled off just above stall speed, hanging on its props. When a relatively smooth area was sighted, power was reduced only enough to allow touchdown. The hull contacted the surface behind the aircraft's center of gravity which lowered the nose to a level attitude. Great effort was made to maintain that level of attitude as the power was gradually reduced. If the sea and swells appeared too rough to complete the landing, power was gradually applied until the aircraft was airborne.

Some of Capt. Mac's senior officers did not share his enthusiasm for seaplanes and open-sea landings. He told in a speech of one admiral for whom he had served who made all decisions on open-sea landings for him. Once, when Capt. Mac thought some lives were unnecessarily lost, he went to the admiral with a plea that the admiral consider the hundreds of times that he had landed in the open sea and leave the decision to land to his own judgment. The admiral grinned easily and said, "Mac, I don't think a man who would take an airplane into the sea hundreds of times has very good judgment."

Capt. Mac was awarded the coveted Octave Chanute Award in 1950. He was enshrined in the Naval Aviation Hall of Honor posthumously in 1986. Capt. Mac's open-sea landing test results have been used to train thousands of flight crews about ditching procedures and survival equipment use.

He had about 8,000 hours logged pilot time and some 400 open-sea landings and takeoffs. He was one of a kind—a great commanding officer who loved life, his family, airplanes, the sea, story telling and a good cigar.

I can fondly remember as a copilot having a right handful of throttles, left hand wrestling with the yoke, feet pumping up and down on the rudder pedals, squirming with body English, trying to keep that big *Mariner* straight on rough water after splash-down, and then glancing at Capt. Mac in the copilot's seat. There he sat, nonchalantly smoking his cigar. ■

OIS . . . The Way of the Future?

By LCdr. Jeff Ogden, USCG

There I was, just after dinner, doing what every H-60 pilot does while they have duty—watching reruns of "I Dream of Jeannie." Suddenly, the all-too-familiar sound of the search and rescue (SAR) alarm jump-started me from my near slumber. After running to the operations center, we learned there was a sinking 65-foot trawler 30 miles south of Martha's Vineyard with three persons on board.

We quickly signed for our plane, grabbed our kneeboard computers and were on our way. By the time the XO turned up the aircraft and was taxiing for takeoff, I had initiated the flight crew data for the Aviation Maintenance Management Information System (AMMIS), reviewed the pertinent weather for our flight (which was sent to us by the officer of the day from the ops center workstation) and signed on to the automatic position reporting system. I also punched up the summary case folder, which showed all the pertinent information for our case and displayed the search area from the Coast Guard Group on the area of responsibility page.

En route to the search area, we were able to confirm the positions of all other Coast Guard assets in the vicinity, along with their working frequencies. A 41-foot utility boat (UTB) and a 210-foot medium-endurance cutter (WMEC) were both in the area. We also received updated information on all of the personnel on board the subject vessel, including working frequencies, gender, age and survival equipment. We were only a few minutes from the search area, and the XO had just finished briefing the crew on the current situation when I received a signal on my kneeboard. The message said to stand down, the UTB was on scene initiating dewatering procedures and all personnel were accounted for. The WMEC would be on scene in 30 minutes.

While en route, I had sent a query back to the air station for weather and possible hospitals and airports for delivery of any passengers. A few minutes later, we received a Federal Aviation Administration weather report for each destination and the po-

sition of a front that was approaching fast. The entire coast would soon be under Instrument Meterological Conditions. I had the controls as we headed back home, while the XO finished transmitting our updated situation report (SITREP) information on his kneeboard.

Just then, the flight mechanic reported a small freighter off to the south and joked about how great it would be to have a SAR case and a drug bust on the same flight. The XO agreed to take a look. As we made our low approach, we spotted a couple of crew members on deck and we did our friendly wave as if to say, "We know you're doing something wrong, but we're here just to make sure you are okay." As we quickly grabbed all the pertinent information we could from the freighter, the flight mechanic typed it into his aft workstation and relayed it back to the operations center for a check on the "hit list." We continued toward the air station leaving the suspicious crew thinking we were gone for good and they were in the clear. We quickly opened a law enforcement (LE) case folder and sent the final data to close out our SAR SITREP.

It took just a short time before we received a reply that the vessel was on the suspect list. We were informed that the WMEC would be diverted to board the vessel and we were released to return to base. I remember thinking about the way we used to carry out LE patrols. We would complete a Summary Enforcement Event Report message then wait until the next day to receive tasking to go find the vessel again.

While shutting down the aircraft, we signed off of the automatic position reporting system and punched in the landing information for our LE SITREP. We then compiled our flight data for the AMMIS and entered the maintenance problems to be corrected. We walked into the operations center, plugged our kneeboard computers into the main computer and all of the information was automatically transmitted. I couldn't help but think how far we've come since filling out the blue and pink sheets with all of those confusing flight codes and then spending hours completing all the pertinent messages. Now back to the lounge and the important stuff . . . which channel was I watching anyway?

What you have just read is not something from the "Twilight Zone" or a copy of an article from *Readers Digest*. It is fiction, but it shows an example of a typical flight with technology that the Coast Guard is developing and currently using! It is called OIS or Operational Information System.

The story is fiction because it didn't happen, I am not an H-60 pilot and the examples of technology discussed were not scheduled to be operational at a Coast Guard air station until the fall of 1994. Otherwise, everything I said is true.

Every transmission mentioned in the story was done without voice communications! The only voice transmissions on this particular case would be to air traffic control facilities and directly to the subject vessel. All other information could be transmitted to and from Coast Guard units, with OIS, through some form of data link communication. The possibilities range from cellular link to satellite communications. Imagine how much confusion will be eliminated by not having to say, "Say again, all after . . . " every time a voice transmission was partially received or stepped on. We all know how easy it can be to misinterpret exactly what medical information was passed from the flight surgeon via the Coast Guard district and group for a victim on board. Now let me see, was that 10 milligrams of epinephrine or 10 milligrams of M & M's?

OIS is essentially a new system of collecting, processing and transferring information in the operational arena using current computer technology. OIS is being developed in phases with each phase affecting a different aspect of operational units and assets. Phase I has already been implemented and concerns operations at the group and shore station levels.

Phase II began in April 1993 with a development team, or field of users, to develop the prototype for the air station and district levels. The team includes pilots, flight mechanics, operations center controllers, a group operations officer and a headquarters representative from Aeronautical Engineering. As with Phase I, this group represents the future "users" of the system. They concentrate on solving problems that exist with the way we currently operate.

As of April 1994, the Phase II development team was meeting to identify possible systems to be used in the H-60. As stated in the opening story, the system will include two pen-based computers for the pilots. Each one will be approximately the size of a standard kneeboard. The software will be similar to the familiar Windows applications. The flight mechanic will have a larger "desk-type" station installed in the cabin. The rear station will have the same capability as the pilots, while the versatility of the system allows for excellent crew resource management. Any member of the crew can be assigned to transmit and receive data depending on the workload. Messages can be received and stored until the crew has the time to answer them. For example, when the entire crew is involved in a demanding hoist evolution, no one has to take the time to answer a radio call about a position report or weather report at home base. The position reports will automatically be sent at predetermined intervals. As soon as time allows, the crew can review any incoming information and take appropriate action.

The future of OIS is under the control of an entity more powerful than any of us—the budget! We have taken tremendous steps with Phases I and II in looking at the way we do business in the Coast Guard. The contents of future phases are not designed yet, but they will eventually incorporate every aspect of Coast Guard operations, including cutters, Vessel Traffic Services, Marine Safety Offices and more. Support for OIS is tremendously widespread and will shape how we operate in the future. The applications of OIS using future technology seem limitless. ■

HOS-1

By Hal Andrews

In contrast to an old popular song, the Sikorsky HOS-1 was "the little helicopter that **was** there" during early Coast Guard/Navy helicopter operations. However, one would hardly know it from most published accounts of the sea services' early helicopter days. The Sikorsky HNS-1 (*NANews*, May–Jun 92) was first, and feats performed by the first Coast Guard helicopter pilots were flown in HNSs. Not only was this the case in the sea services, the same was true in the Army Air Forces (AAF), responsible initially for all military helicopter development. The earlier R-4 (HNS) got the attention in spite of the fact that there were nearly twice as many R-6s (HOSs) in the AAF and the sea services.

With successful delivery of the XR-4 in late 1942, and a production order for service test models, Navy/Coast Guard interest focused on an upgraded version of the design for maritime use, including shipboard-based antisubmarine operations and search and rescue. The final result was a new experimental helicopter, the XR-6, five of which were ordered in October 1942 with three to go to the Navy as XHOS-1s. The three-bladed rotor system of the R-4 would be used on a new airframe powered by a lighter weight, higher power new engine—the horizontally opposed, air-cooled 220-hp Lycoming O-435—mounted with its crankshaft vertical. Minimum weight, drag and use of noncritical materials were all major design objectives. Maximum crew vision was provided by a large blown plexiglass bubble for the front of the two-man crew cabin. Bombs or depth charges would be dropped from fuselage mounted racks; alternatively, stretchers could be carried in

HOS-1

U.S. Coast Guard

XHOS-1

fuselage mounted capsules. Magnesium was used for the monocoque tail cone and the cantilever landing gear struts, while an early plastic-bonded, paper-based composite material was used for engine section panels over the steel tube center structure as well as for cabin framing and panels.

The mockup conference in December confirmed the design with the usual adjustments and improvements, and detail design proceeded. Early in 1943, Sikorsky was asked to initiate production of 26 service test YR-6s. Concerned with the adverse effect on Vought's collocated F4U *Corsair* production, it was decided that Nash-Kelvinator (N-K), already producing Pratt and Whitney engines and Hamilton Standard propellers under Sikorsky parent United Aircraft Company licenses, had available production capacity and could undertake R-6 production. The AAF production contract for 800 (typical WW II numbers!) in May 1943 was augmented by the Navy's request for 100 additional as HOS-1s for ship-based antisubmarine warfare. These were contracted to N-K, with Sikorsky to complete the XR-6s (a sixth having been added for Army testing) and provide overall engineering leadership. Production would follow automobile practice, with airframe components built in N-K's Grand Rapids, Mich., facilities and the final assembly line and flight testing at Detroit, Mich.

As design and development proceeded, problems with development of the Lycoming O-435 led to its replacement by the 235-hp Franklin O-405 with the Army's R-6s becoming X, Y and production R-6As. The first XR-6A lifted off in October 1943. While the rotor system was by now well established for the early R-4s, the new airframe, rotor drive and control systems presented a whole new set of problems, especially with respect to vibration characteristics and flight control. These were sufficiently solved in February 1944 for acceptance of the first XR-6A and its delivery flight to Wright Field in Dayton, Ohio, by way of Bolling Field in Washington, D.C. Demonstrations at Bolling elicited much favorable comment on the XR-6A's features, especially the visibility, quiet cabin and stretcher capsule to accommodate one rescuee on each side.

Again, behind this success was more work to achieve a fully satisfactory service aircraft, and the expected early delivery of the three XHOS-1s—as well as production aircraft—had to be postponed. N-K production was well underway, while Sikorsky continued to work out the problems with the X aircraft.

XR-6A

In October, the first XHOS-1 was delivered, while the first production YR-6A was being accepted at Detroit. The first XHOS-1 went to Naval Air Test Center (NATC), Patuxent River, Md., by way of Coast Guard Air Station (CGAS), Brooklyn, N.Y., where all Coast Guard/Navy helicopter operations were based. A limited flight test evaluation got underway at NATC in November, and the second XHOS-1 was delivered to CGAS Brooklyn for evaluation and operation. Its loss in an early December accident resulted in suspension of NATC test flying. In January 1945, the third XHOS-1 arrived at CGAS Brooklyn where that spring it was fitted with floats for flight test of an experimental dipping sonar system. Successful results led to a prototype operational system requiring a larger helicopter; the XHOS-1 returned to routine flight operations.

VX-3 HOS-1

Deliveries of R-6As at Detroit followed the YR-6As off the line at the beginning of 1945, building up gradually with initial acceptance of HOS-1s in April. These were delivered to CGAS Brooklyn starting in June, with ferry flight deliveries increasing over the next two months. Modifications for maritime use were done at Naval Air Material Unit (NAMU), Philadelphia, Pa.—initially radio modifications to permit air-sea rescue coordination, later a rescue hoist installation and other changes. With recognition of the HOS-1's performance limitations (bomb carriage had been deleted from all R-6As) and the end of hostilities, Navy HOS-1 procurement was cut back to 36. Production line termination after VJ day reduced the total production to 219, with 40 of these consigned to Britain as *Hoverfly IIs* under lend-lease.

A principle mission for the Brooklyn helicopters was serving as a radar calibration target for ship radar systems. In September, while hovering at 5,000 feet over Philadelphia, the entire main rotor and transmission left a recently delivered HOS-1. Fortunately, the two crewmen had been directed to have parachutes that day and were able to abandon the falling fuselage in time for their chutes to save them. All R-6/HOS helicopters were grounded while the cause was determined. Production and inspection discrepancies were highlighted and with full inspections and appropriate modifications, flying resumed in late December. Final deliveries of the 36 HOS-1s were completed in January 1946. By this time, Sikorsky had the full support role. Flight training and various missions continued at CGAS Brooklyn. Individual aircraft went to other assignments. Four went to *Shangri-La* (CV 38) in March for a helicopter unit in Operation Crossroads, the Bikini atom bomb tests. When *Shangri-La* reached San Diego, Calif., the aircraft were transferred to *Saidor* (CVE 117) and operated effectively for utility purposes during the tests—though maintenance had an adverse impact.

The Coast Guard was returned to the Treasury Department on 1 January 1946. Plans were subsequently initiated for splitting up the Coast Guard/Navy helicopter operations at CGAS Brooklyn. Starting in May, 18 HOS-1s, including the XHOS-1, were transferred to CGAS Elizabeth City, N.C., selected to be the new center for Coast Guard aviation, including helicopter operations. On 1 July, these became Coast Guard property. That same day, VX-3 was established at NAS Brooklyn to take over Navy operations, with 12 HOS-1s allotted, to be filled out as they became available from modification/overhaul at NAMU or other assignments. VX-3 moved to NAS Lakehusrt, N.J., in September, continuing its helo pilot training and other mission assignments, including radar calibration.

Meanwhile, the Coast Guard transported one of its HOS-1s (along with an HNS) to Newfoundland where the two helos played a major role in rescuing survivors of a transatlantic airliner crash. Use of helicopters in Coast Guard sea and shore operations continued with HOSs and HNSs.

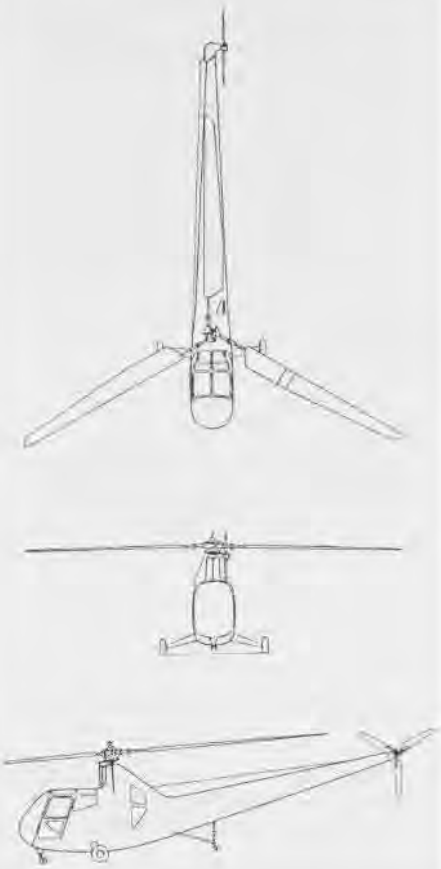
Two additional HOS-1s were added to the Navy inventory from returned lend-lease, but not used operationally, while four others, returned from Operation Crossroads duty, were overhauled and transferred to the Coast Guard. One Navy HOS-1 went with Operation High Jump to operate in the Antarctic late in 1946. Following successful operation of Sikorsky's civil certified S-51s as HO3S-1s in Operation High Jump, additional HO3S-1s were purchased for the fleet in 1947, as well as similarly certified Bell 47s as HTL-1s. As these came into Navy service and in smaller numbers for the Coast Guard, the HOS-1s were gradually phased out over the next two years. Most of the Navy ones were retired by the end of 1948, with the last few in early 1949. None went to the newly formed HUs 1 and 2 in 1948. The Coast Guard's HOS-1s followed a similar pattern.

While the HOS's accomplishments weren't up to its numbers, and it didn't meet expectations, it was the first production line helicopter and set the pattern for many small helicopters to come.

Thanks to U.S. Coast Guard Headquarters personnel for their assistance with this article. VR-48, Gulfstream Aerospace and USCG HQ personnel contributed to "Naval Aircraft," Sep–Oct 94.

HOS-1

Length (over rotor disks)	**48'0"**
Rotor diameter	**38'0"**
Height (over tail rotor disk)	**10'5"**
Engine: Franklin O-405-9	**235 hp**
Maximum speed	**94 mph**
Service Ceiling	**12,400'**
Maximum range	**245 mi**
Crew	**2**



Aviation Storekeeper

Story and Photo by JO1(SW) Eric S. Sesit

Remember all those movies about the Navy in WW II? Theatrical productions that often portrayed the men of the Supply Corps—service members responsible for handling the Navy's tons of supplies—as unsavory, conniving and ingenious sorts, smoking cigars in supply huts loaded with everything from toilet paper to whiskey? If a sailor needed something, he went to the supply chief and traded something or maybe sold his soul and, poof, his chief loved him, his division officer was happy and the sailor became an instant hero—all thanks to the supply folks.

That is **not** what this article is about!

Those were movies, folks. The only thing today's Aviation Storekeepers (AKs) have in common with those fictional characters is . . . well, nothing.

Today's AKs are highly trained individuals who manage one of the most complex systems in the world—the Navy's aviation supply system. For those of you who have experienced the thrill of ordering supplies through the Navy system, you know firsthand how valuable these troops really are. They are the people who make the system work by being able to wade through an electronic and paper maze of forms and financial data in order to get replacement parts where they have to go.

In a nutshell, AKs ensure that materials and equipment needed for Naval Aviation activities are available and in good order. Their duties include keeping fiscal records of the facility to which they are assigned, ordering, storing, checking and issuing naval aircraft and aeronautical equipment and accessories, preparing inventory reports and

Aircraft parts are his specialty. AK1 Jack Earlywine surveys a fraction of the thousands of parts for which he's responsible.

maintaining financial logs and records.

"Training begins for AKs at an eight-week "A" school located at NAS Meridian, Miss.," AKCS(AW) Mark E. Williams, the senior AK detailer, said. "There, they learn basic storekeeping procedures. These procedures are pretty much the same as those studied by the Navy's Storekeepers (SKs), enlisted troops who handle supplies for the rest of the Navy. Up until the early 1960s, SKs ordered parts for aviation as well as the surface Navy. As aviation became more complex, the need arose to have specialists trained in handling aviation supplies, and the AK rating was formed."

After graduation, an AK is assigned to a squadron, ship's company or to an Aviation Intermediate Maintenance Department (AIMD). "A young AK has many opportunities to shine at the squadron level," Williams said. "They can work in material control, tool control or even set their sights on becoming a plane captain when they are sent to work the flight line.

"As part of a ship's company, junior AKs will probably work at receiving and stowing parts, as well as issuing and breaking out those parts for issue."

AKC Randy E. Lussier, the other AK detailer, continued, "As an AK moves up the ranks, his or her opportunities for taking on added responsibilities increase. A second class petty officer, and, in some cases, a third class might supervise a work center. Additionally, they may be placed in a position where they are accountable for keeping track of millions of dollars in operating expenses."

As the Navy moves forward to the 21st century, the AK rating has kept pace with technical advances. A key tool for every AK shop is the Shipboard Uniform Automated Data Processing System (SUADPS), a computerized method of managing, ordering and tracking parts worldwide. "SUADPS requires specialized training in the form of a 60-day 'C' school that awards the numerical Navy Enlisted Classification [NEC] code 2824," Williams said. "This specialization means the sailor is now eligible for a Selective Reenlistment Bonus, money paid to a sailor as an incentive to 'Stay Navy.' It also means that sailors with this NEC will probably be assigned to work as SUADPS specialists for the remainder of their careers. The training these individuals receive is just too valuable not to let them work in their specialty."

Other specializations an AK can explore include hazardous material specialist (9595), responsible for the handling of materials that could cause a hazard to man or the environment, and air transportation specialist (2821), loading aircraft properly and safely.

AKC(AW) Roxana L. McCarthy, material control leading chief petty officer at AIMD Naval Air Warfare Center Aircraft Division, Patuxent River, Md., pointed out some of the fringe benefits of being an AK. "The thing I enjoy most is being able to work with different work centers. This allows us to learn the different ratings or jobs. We get to know an aircraft just through osmosis. After years of experience and working with different parts and different aircraft, we pretty well know what will work in an aircraft and what won't. We also get to work with everyone in the aviation community, and it's a challenge to search the world over to find a part to make an aircraft fly. With downsizing, sometimes parts are harder to locate. That means we have to work that much harder to find what we need."

AK1 Jack L. Earlywine, McCarthy's leading petty officer, supervises 16 people in his shop. He echoed McCarthy's comments and added, "We have to be flexible and people oriented. As AKs, we are in the customer service business and have to understand that our shipmates working on those aircraft are under a lot of pressure to get the job done. That means we have to work just as hard to get the parts they need.

"One of the things I like most about being an AK is the job diversity. We're needed wherever planes and helicopters fly and there is also plenty of independent duty," Earlywine added.

"We [senior petty officers] also have a responsibility to our junior troops. We have to ensure that these people are cross-trained and learn every aspect of their job," Lussier said. "For example, we might have a sailor who is a whiz at fiscal management. It's real tempting to leave that person in that job for the entire tour, since that position is extremely important and often tedious. However, it doesn't do a sailor or the Navy any good if that person moves on to the next tour and can't perform all the tasks that are required."

During the course of their career, AKs can expect to spend approximately 60 percent of their time assigned to sea billets. A new recruit will spend the entire first enlistment, or 42 months, at sea before reporting to shore duty for 36 months. From then on, every AK, regardless of rank, will serve four years at sea and three years on shore.

The future is bright for advancement of the 4,000-plus men and women of the AK community. "We're manned at 95 percent," Williams said. "Advancement is looking good and the opportunities for men and women have never been greater, since the carriers are now embarking women. I just want to tell everyone in our community to stay flexible, consider those overseas tours, earn your Enlisted Aviation Warfare Specialist designation and make the most out of every duty station to which you are assigned. Your hard work will pay off." ■

High-Tech Testing on a

By Cliff Lawson

Photos by Tim Tyson

An F/A-18 overflies the sensor line.

An F-15 banks low over the test site.

Viewed head on, the F/A-18 fighter is an imposing sight. The twin outward-canted fins and rudders form a wide "V" above a fuselage dominated by the twin black holes of the engine intakes. This view is even more impressive when the aircraft is hurtling directly towards you at close to the speed of sound, less than a mile away and still 100 feet below your position.

Most of the 75 people participating in August's Long Jump '94 exercise high in California's White Mountains were not watching the F/A-18's approach. They were too busy tending dozens of electro-optical (EO) and infrared (IR) seekers and sensors. These delicate electronic devices, affixed to tripods and tracking mounts, were watching the aircraft and tracing its path through the ground clutter before the fighter suddenly nosed up and flashed close overhead with an ear-splitting roar.

Long Jump '94 was hosted by the Naval Air Warfare Center Weapons Division (NAWCWPNS), China Lake, Calif. The participants, representing 12 defense contractors, three branches of the U.S. armed services and the United Kingdom, had come to this mountain outpost to see that every possible bit of data from the sensors was recorded: acquisition ranges, signal strength, tracking accuracy, clutter rejection and a host of other parameters.

In the months ahead, engineers and analysts in laboratories across the country will use this information to advance the state of EO/IR technology. This is the same technology that guides a heat-seeking missile to its target, lets an attack pilot find his prey in a desert dust storm and gives "eyes" to special-warfare units operating at night behind enemy lines. Not all applications are military; U.S. auto makers are investigating EO/IR sensors for automobiles to allow safe passage through areas of blowing dust or snow, and for school buses to guide them safely through morning fog.

Complex technology notwithstanding, the concept behind Long Jump '94 is simple and has remained essentially unchanged through the five Long Jumps that China Lake has held since 1985. Its purpose: to bring government and industry researchers and their equipment together in one place, fly every available type of aircraft at the site, record the signature data that the sensors receive from the aircraft, and share nonproprietary data.

Barcroft Laboratory in the White Mountains east of Bishop, Calif., is the site of the Long Jump exercises. Working in this remote location at an altitude of 12,470 feet has disadvantages. Even in August, when the tests are held, the temperatures drop into the 20s at night. The sun has a microwave-oven intensity that can inflict a bad sunburn in 15 minutes. Winds are tempestuous, and midsummer snow and hailstorms are common. The oxygen level is drastically less than at lower elevations—50 percent less than at sea level—and a brisk hike from the main laboratory building to the edge of the test site leaves the heart pounding and lungs gasping.

If that isn't bad enough, there's the road to Barcroft. The final 19-mile stretch is steep, winding and unpaved, a mix of jagged chunks of broken basalt and dust-filled washboard. The crane used for loading and off-loading equipment vans at the site took seven hours to cover the 160 miles from China Lake to Barcroft.

Why then did the Navy, Army, Air Force, Boeing, General Electric Aircraft Engines, Hughes, Loral Aeronutronic, Martin Marietta, Pacific Advanced Technology, Raytheon, Rockwell, Texas Instruments and the United Kingdom's Defense Research Agency send top-flight technical people and several hundred thousand dollars worth of delicate equipment to Barcroft? Why, particularly, when the Navy's China Lake facility with its million-plus acres of highly instrumented test ranges is only a short hop to the southeast?

The answer is altitude. The same thin air that makes breathing so difficult provides an ideal medium for testing EO/IR sensors. Absent at Barcroft is most of the smoke, moisture, dust and other particulates found at lower altitudes—contaminants that affect the passage of energy through the air and increase the difficulty of assessing subtle changes in IR/EO signals. The sensors set up at Barcroft view the targets against sky and terrain background in a setting that simulates an air-to-air environment. The site offers all the advantages of an airborne testbed without the constraints of weight

California Mountain Top

A view down the sensor line at Barcroft Laboratory during Long Jump '94.

Sensors on a Kineto tracking mount follow an incoming target.

or volume (most of the participants bring a van full of test equipment and spare parts) and high aircraft-testbed costs.

During the two weeks of Long Jump '94, 33 flights were made against the Barcroft sensors by military aircraft. The roster of targets included the A-10, AH-1W, AV-8B, B-1B, B-52H, E-2C, EA-6B, F-111, F-15C and E, F-16C and D, F/A-18, F-4G, KC-10, KC-135, SH-60B and a Royal Air Force *Harrier*. Each flight consisted of a straight-in

Looking down on an A-10 Thunderbolt against ground clutter as the aircraft approaches the test site.

run by the aircraft from Telescope Peak, 120 miles east of Barcroft, ending in a pass over the test site and followed by a serpentine outbound flight profile that passed through a dozen checkpoints.

The carefully designed flight profiles allowed the sensors to view the targets in multiple aspects and against a variety of sky and terrain backgrounds. Pilots were in constant contact with an air traffic coordinator at the site and were willing to adjust their patterns and re-fly legs as required.

Planning and executing the operation required massive preparation, complicated logistics, precise timing and teamwork. The exercise took well over a year to prepare for, and with 19 different types of aircraft participating and more than 35 sensors tested, this was the biggest Long Jump ever. NAWCWPNS support ranged from transportation and meteorology services to aircraft coordination and operations security. Long Jump '94 was financed by the participants, each of which paid $20,000 for the first three sensors and $5,000 for each additional sensor.

Military and contractor participants alike agreed that the exercise was a resounding success, producing a tremendous amount of valuable data that will serve government and industry in advancing EO/IR technology.

The attitude of the Long Jump team was summarized by one member, whose words reflect a 50-year China Lake tradition: "Whatever it takes, we just step up to the plate and do it." ■

Several Long Jump participants monitor their equipment from a test van.

Patrol Aviation in the Atlantic in World War II

By Captain Albert L. Raithel, Jr., USN (Ret.)

Patrol aviation in the Atlantic in WW II has been described as "thousands of hours of boredom interspersed with moments of sheer terror."

On 7 December 1941, patrol aviation in the Atlantic was organized under Commander Patrol Wings, U.S. Atlantic Fleet. Five wings were located as follows: Patrol Wing 3, Coco Solo, Canal Zone; Patrol Wings 5, 8 and 9, Norfolk, Va.; and Patrol Wing 7, Argentia, Newfoundland. Twelve Atlantic patrol squadrons were equipped with various models of the Consolidated PBY *Catalina*, with one squadron flying the Martin PBM *Mariner*. An additional squadron was transitioning to the Lockheed PBO *Hudson*.

Atlantic patrol aviation under Atlantic Fleet tasking was heavily engaged in Neutrality Patrol operations over a wide area. Patrols were flown from Iceland, Newfoundland, Bermuda, Puerto Rico, Trinidad and Brazil. Commander Patrol Wing 3 covered both the Caribbean and the Pacific approaches to the Panama Canal. Those few squadrons not flying Neutrality Patrols were occupied with providing operational training to recent graduates of the flight training programs or in transition training of squadrons reequipping with new aircraft.

In the weeks after Pearl Harbor, Patrol Wing 8 and four PBY squadrons were transferred to the Pacific. For practical purposes, the East Coast of the United States had been stripped of its patrol aviation shield. Following the German and Italian declaration of war against the United States on 11 December 1941, patrol aviation remaining in the Atlantic had its hands full with escort of North Atlantic convoys and stepped-up patrols from the offshore bases.

Very unlike current operations under unified commands supported by extensive worldwide command, control, communications and intelligence systems, antisubmarine air operations up to 150 miles off the East Coast at the time of the initial German submarine offensive were conducted under the operational control of Commander North Atlantic Naval Coastal Frontier, as a task force commander under Com-

U-848 under attack by VB-107 PB4Y-1, 5 November 1943.

80-G-44360

"MADCAT" PBY with magnetic anomaly detection equipment.
80-G-383725

ing and new squadron establishment and workup, patrol aviation was fully engaged in the Battle of the Atlantic. The American patrol aviation forces were only a portion of the much larger mixture of land, sea and air resources involved in what has been termed history's longest, most expensive and most critical naval battle.

The objective of antisubmarine warfare is to deprive the enemy of the effective use of its submarines. To this end, the recording of submarine losses tells just a small part of the story. Particularly, sightings by aircraft radioed ashore or to surface craft often resulted in numerous attacks by other

mander in Chief, U.S. Fleet. This control was exercised through the commandants of the First, Third, Fourth and Fifth Naval Districts. Forces assigned were those of the Naval Local Defense Forces drawn from air assets of the respective naval district commandants. Control was normally through naval communications facilities at the base of flight origin. Communications between bases and with the Naval Coastal Frontier were very limited. Long-range flight communications utilized high frequency continuous wave, with voice communications limited to short ranges. Very few frequencies were available to each aircraft, and coding was manual through the use of strip ciphers or code books.

The Battle of the Atlantic, from its inception in September 1939 until 8 May 1945, was a battle for the protection of shipping, supply and troop transport waged against the German submarine force, supporting Luftwaffe aircraft and occasional surface ships and Italian submarines. With the exception of those patrol organizations—including Fleet Air Wing 5 after September 943—in operational or transition train-

Three PV-1 Venturas awaiting takeoff clearance, NAS Port Lyautey, French Morocco. 80-G-K-5246

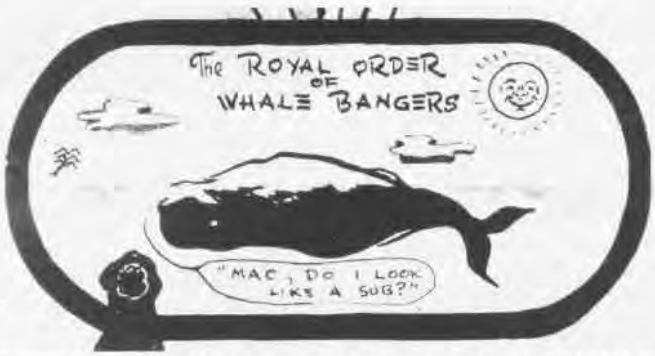
PBY on convoy patrol, Gulf Sea Frontier.
80-G-238408

surface or air units. In 1942, submarines were ordered to dive when they sighted an aircraft. Consequently, air patrols in the vicinity of surface vessels or convoys often contributed to the submarines' inability to position for an attack, and thus indirectly contributed to the objective.

Through the fall of 1941, most submarine operations in the Atlantic had been conducted against areas of shipping concentration and against convoys to and from Canada and the United Kingdom. Commander Patrol Wing 7 operated as a task group commander under Commander Support Force, Atlantic Fleet. Patrol PBY squadrons VPs 71, 72 and 73, and PBM squadron VP-74 supported convoy operations from Newfoundland and Iceland with primitive facilities and fierce winter weather conditions. Since operating conditions were becoming impossible for flying boats, a plea was made for land-based aircraft. In order to meet this immediate requirement, the Navy was able to divert 20 lend-lease Lockheed *Hudsons* from those destined for the Royal Air Force. These aircraft, the Navy's first landplane patrol bombers, were designated PBO-1.

Retreating before a determined British offensive in the autumn of 1941, the situation of the German Afrika Korps was critical. Hitler, with no prior warning of Japanese plans for the Pearl Harbor attack, ordered that most submarines be withdrawn from the Atlantic to operate against British shipping in the Mediterranean. Shortly after Germany and Italy declared war against the United States—with Admiral Karl Doenitz as Commander in Chief—U-boats received permission for submarine operations off the East Coast of the United States.

80-G-66071



All contacts weren't submarines! Medal presented for attacks on targets evaluated as whales.

With the departure of Patrol Wing 8 and four PBY squadrons to reinforce the Pacific fleet in mid-December, the North Atlantic Naval Coastal Frontier was left with only a few training squadron PBYs and Coast Guard aircraft and some trainers and carrier aircraft. When the German attacks on East Coast shipping began in January 1942, the Commander in Chief, U.S. Fleet, refused a request for transfer of Atlantic Fleet aircraft to the Naval Coastal Frontiers. In February, permission was granted for fleet aircraft to be used by Coastal Frontier commanders in emergencies only and not for routine patrols. Commander North Atlantic Naval Coastal Frontier also asked for and received operational control of 9 Boeing B-17 heavy bombers, 6 Douglas B-18s and 31 North American B-25 medium bombers from the Army's First Bomber Command. These aircraft carried only demolition bombs and flew only daylight missions, but they flew and fought. Inshore antisubmarine patrols up to 50 miles off the coast were flown by the Coast Guard, Army observation squadrons, trainers and after March 1942 by the Civil Air Patrol in support of Navy tasking. Also in March, a number of Vought OS2U *Kingfisher* aircraft, originally destined for the British, were assigned to inshore patrol squadrons.

Adm. Doenitz named his first mission against the East Coast, Operation Drumbeat. The first sinking occurred 300 miles east of Cape Cod, Mass., on 11 January 1942. The five U-boats which comprised the first group were detected by communications intercept and accurately plotted and reported by U.S. Naval Intelligence in the estimate for 12 January.

Unprepared to conduct antisubmarine warfare and without effective command, control and communications support, the meager surface and air forces available in the North Atlantic Naval Coastal Frontier were unable to cope with the German offensive. During the first quarter of 1942, 60 ships were sunk by U-boats in the area. Remedial action where possible was slow in com-

ing. Lights along the coast that silhouetted ships offshore were never blacked out and were only dimmed after strong representation by the Army. Effective antisubmarine search and localization devices were not available, and the only antisubmarine weapon, the depth charge, had limited lethal range.

As the German offensive gradually worked its way south along the coast, detachments of patrol aircraft were established at various points along the coast to enable them to base closer to their patrol areas. With the establishment of coastal convoys and the organization of the Eastern, Gulf, Panama and Caribbean Sea Frontier commands in April 1942, the command and control system for prosecution of antisubmarine warfare in the Atlantic began to take shape. Aircraft production and training programs at this time could not fill the worldwide force requirements, and shipping losses were enormous—154 ships lost in areas covered by American patrol forces, with the loss of only 2 submarines, U-656 and U-503. Both were credited to VP-82 flying the PBO-1 *Hudson*, the first German submarine sinking attributed to United States forces in WW II.

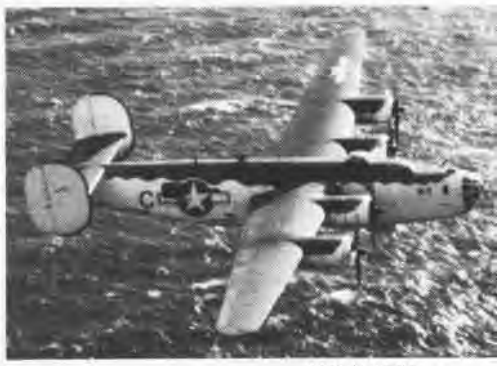
As the pressure of the coastal convoys began to take effect in the second quarter of 1942, the main offensive moved with a vengeance into the Gulf of Mexico and the Caribbean. Whereas the losses during the first quarter were 51 ships, the second quarter losses counted 167 ships in these areas. During the quarter, only VP-74, flying the PBM *Mariner*, scored a kill, sinking U-158.

Additional PBY squadrons came "on line" as fast as they could be trained, but the build-up was painfully slow as the demands of the Pacific Fleet were critical at this time. Deliveries of the PBM-3 to patrol squadrons were subject to production and configuration delays.

A decision in 1920 precluded the Navy from developing land-based patrol aircraft. The Navy's request for these aircraft was not favorably resolved until July 1942. At that time, an agreement with the Army resulted in the release of Consolidated B-24s (PB4Y-1s), North American B-25s (PBJ-1s) and Lockheed B-34s (PV-1s). These additional aircraft were pressed into action as soon as squadrons could be formed and crews trained.

80-G-2133

VP-73 PBY covered with snow, North Atlantic area, December 1941.



80-G-K-14059

Fleet Air Wing 7 PB2Y-1 on Bay of Biscay patrol, Summer 1943.

The summer of 1942 saw greatly increased concentration of submarine activity against the North Atlantic convoys and Canadian coastal zone shipping with the third quarter loss of 68 ships. A substantial decrease in losses was experienced in the Eastern and Gulf Sea Frontier areas, but continued strong activity in the Caribbean resulted in quarterly losses of 93 ships. Losses in the Brazilian area continued a small increase to 10 ships.

Partially offsetting these losses was the increase in submarine sinkings attributed to American air patrol activity. In July, the Army's 396th Bombardment Squadron sank U-701; VS-59, a Patrol Wing 3 inshore patrol squadron, joined surface units to sink U-153; and VS-9, an Eastern Sea Frontier inshore patrol squadron, joined with a merchant vessel to sink U-576. In August, Coast Guard Squadron 212 sank U-166 in the Gulf of Mexico.

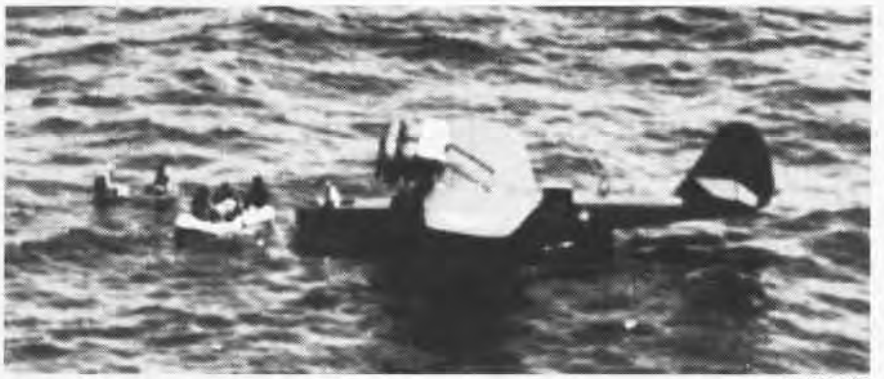
In August 1942, Patrol Wing 11 was established at San Juan, P.R., and was assigned to the Caribbean Sea Frontier. In September, Patrol Wing 12 was established at Key West, Fla., assigned to the Gulf Sea Frontier. These commands improved the administrative

NH 93645

The VP-55 commander's aircraft floats offshore in 1941. This was one of the first PBM-1s assigned to the fleet.

80-G-41878

Ltjg. John E. Dryden, USNR, of VP-53, paints U-boat kill symbol on his PBY after sinking U-156.



80-G-63675

Coast Guard Douglas Dolphin rescues survivors of SS Gulfstate, sunk by U-155, April 1942.

and material support for squadron operations in their respective areas. Also in September, Headquarters Squadrons (HEDRONs) were established in each wing to provide for the administration of the wing and attached squadrons. They also accomplished the maintenance and repair of all squadron aircraft by pooling all equipment and spare parts, and by transfer of ground personnel from squadrons to the HEDRON. Thus, squadrons were composed primarily of flight crews which, being freed of most administrative and maintenance responsibilities, could concentrate on flight operations. HEDRON detachments, called Patrol Service Units, provided maintenance

VP-211 PBM at Rio de Janeiro, Brazil. Note white tropical paint scheme.

NH 94555

services to deployed wing squadrons and detachments at outlying bases. In October, the inshore patrol squadrons were assigned to the administrative control of the Patrol Wings. Operational control remained with the Sea Frontier commanders.

On 1 November 1942, Patrol Wings were designated Fleet Air Wings as the basic structure for shore-based air and were to be composed of any types of aircraft required by the wing to perform its assigned functions in a peculiar area of operation. As antisubmarine measures became more effective, and as the number of squadrons available provided greater coverage, the effectiveness of submarines in the Caribbean area was sharply reduced. Adm. Doenitz shifted his area of concentration to the north. In the last quarter of 1942, losses mounted in the North Atlantic convoy area to 70 ships and decreased in the Caribbean to 48 ships. Losses mounted to 23 ships in the Brazilian area and to 35 ships in the southeastern Atlantic. There were no losses in the last quarter of 1942 in the Eastern, Gulf or Panama Sea Frontier areas. U-512 was sunk by the Army's 99th Bombardment Squadron, and U-408 by VP-84 in October. U-611 was sunk by VP-84 in December.

The decisive year in the Battle of the Atlantic was 1943. With increased numbers of submarines available, Adm. Doenitz formed large "wolf packs" to operate against the North Atlantic convoys.

VP-83 sank U-164 and U-507 in January, and the Army's 2nd Antisubmarine Squadron, assigned to Fleet Air Wing 15, sank U-519 in February. In March, U-156 fell prey to VP-53 and U-524 to the Army's 1st Antisubmarine Squadron, also of Fleet Air Wing 15. The second quarter results were even better. In April, VP-83 sank the Italian submarine *Archimede*, while VB-125 sank U-174. May saw the loss of U-657 and U-467 to VP-84. VS-62, a Fleet Air Wing 12 inshore patrol squadron, and a Cuban gunboat joined to kill U-176. VP-74 and surface units sank U-128. June brought the demise of U-388 and U-200, both to VP-84.

The fierce attacks against the convoys reached a climax in the spring of 1943. A number of significant factors contributed to the Allies turning the tide of battle.

Training programs and production lines combined to furnish the well-trained personnel, ships and aircraft required to provide the necessary protection for shipping. Atlantic patrol squadrons had increased in number from 16 in July 1942 to 30 on 1 January 1943. Long-range B-24/PB4Y-1 *Liberators* provided the range to help close the mid-ocean gap, along with the increasingly available Hunter-Killer Groups composed of escort carriers, their air group and accompanying surface escorts. A very important factor was the availability of 10cm airborne radar, which effectively reduced the ability of U-boats to remain undetected while repositioning on the surface.

In the face of determined opposition, the Germans were subjected to grievous losses, and on 24 May 1943, Adm. Doenitz withdrew his U-boats from the North Atlantic convoy routes.

In July, a decision was reached to assign all PBMs to the Atlantic Fleet for antisubmarine operations. It was not until December that PBMs would be assigned to the Pacific Fleet. Also in July, two squadrons of PB2Y *Coronado* flying boats were added to the patrol forces, and the first of the acoustic antisubmarine aerial torpedoes (*Fido*) reached the fleet. The build-up of patrol forces was accompanied by more responsive command and control measures, more reliable communications and proven tactics, which were widely disseminated and taught in the various training establishments supporting the fleet.

With the advent of more and better equipment, and additional squadrons to put on task, submarine losses to patrol aviation mounted through the summer. In July, VP-32 sank U-159, U-759 and U-359; VP-94 sank U-590 and U-662. U-135 was killed by VP-92 and British surface units, while Bombing Squadron (VB) 107 tallied U-613. VP-74 sank U-513 and in coordination with two Brazilian patrol planes sank U-199. U-43 was sunk by VB-127. In August, U-572 was dispatched by VP-205. In an eight-hour battle involving 7 PBMs, a PV, an Army B-18 and a K-type blimp, U-615 finally succumbed to the combined attacks of VP-204, VP-205, VB-130 and the 10th Bombing Squadron Army Air Force, with the assistance of ZP-51. Also in August, VB-129, VP-107 and USS *Moffett* combined forces to sink U-604 and Fleet Air Wing 7 deployed to the United Kingdom for operations under control of 19 Group, Royal Air Force Coastal Command.

In September, U-161 fell prey to VP-74. Also, the operational units of Fleet Air Wings 5 and 9 merged into Fleet Air Wing 9. Headquarters moved to New York, and Commander Fleet Air Wing 9 assumed additional duties as Eastern Sea Frontier Air Officer. Fleet Air Wing 5 became the Atlantic Fleet

OS2U on inshore patrol, Eastern Sea Frontier, July 1942.

80-G-13132

Training Wing for the remainder of the war. Also in September, Army antisubmarine units and Civil Air Patrol units supporting the Eastern Sea Frontier were replaced by units of Fleet Air Wing 9, and Civil Air Patrol units were no longer assigned to Gulf Sea Frontier operational control.

Following the withdrawal of submarines from the North Atlantic convoy area, Adm. Doenitz sent his force to operate in distant waters. This was done to preserve as much of the force as possible until new developments would again allow a return to attack on the vital North Atlantic convoys. These developments included installation of improved 20mm antiaircraft cannon, the acoustic torpedo, a new radar countermeasures receiver and a new radar decoy. Aerial reconnaissance by Luftwaffe Focke Wulf patrol planes provided advanced warning and location of Gibraltar and other southbound convoys. The submarine offensive in the Bay of Biscay and the other more remote operating areas proved to be costly largely due to excellent Allied communications intelligence and the new 10cm radars about which the Germans had no information. Losses through the summer and into the autumn convinced Adm. Doenitz to conclude in his memoirs that ". . . the era of success has ended. All we could now hope to do was fight a delaying action and . . . to tie down the forces of the enemy."

Submarine losses to American patrol aviation during the fourth quarter of 1943 included U-336, which fell to VB-128 in October; U-848 and U-849 sunk by VB-107; U-966 sunk by VB-103, VB-110 and a Royal Air Force Czech-manned B-24; and U-508 killed by VB-103 in November.

From November 1943 through the end of May 1944, the U-boats were important to Germany only in that they kept Allied shipping in convoy and tied down increasing numbers of antisubmarine warfare forces. During this period, Atlantic patrol aviation grew to peak at 25 patrol and 20 bombing squadrons. Significant new systems came into use and contributed to success: the sonobuoy, introduced in June 1943, and the L-7 searchlight, first used in a night attack in December. Magnetic Anomaly Detection (MAD) equipment was introduced in early 1944 and rockets were fitted to the PV in February.

Submarine losses to patrol aviation counted U-271 sunk by VB-103 in January and U-177 sunk by VB-107 in February. U-761 was detected attempting to pass through the Gibraltar-North Africa MAD barrier and was sunk by the concerted efforts of VP-63, VB-127, the Royal Air Force and two surface units. March and May saw the loss of U-392 and U-731, both to VP-63 and two surface units.

In an attempt to foil Allied plans for a possible invasion, Adm. Doenitz communicated anti-invasion dispositions to his submarines in May 1944. Communications intelligence intercepted and decoded this information. When the Germans recognized the Normandy landings were under way, Doenitz signaled execution of his plan. The intense Allied antisubmarine efforts which followed prevented significant loss to the invasion forces.

The invasion of France, Allied countermeasures, increased air patrols and the availability of timely, accurate and decrypted radio intelligence worked together to drive the U-boats from their French bases. The availability of the snorkel underwater breathing device enabled many to evade, but the submarines were never an effective force after August 1944. The only submarine loss to American patrol aviation during the remainder of 1944 was U-863 sunk by VB-107.

On 1 October 1944, all VP and VB squadrons were redesignated VPB (multi-engine patrol bombing) squadrons.

In February 1945, U-327 was sunk by VPB-112 and five surface units; U-681 was sunk in March by VPB-103; and the last U-boat lost to American patrol aviation in WW II was U-1107, sunk by VPB-103. The European war ended with the surrender of Germany on 8 May 1945, VE day.

The Germans hoped to deploy their new design Type XXI, XXIII and XXVI submarines, with submerged endurance and high underwater speed, in numbers which would change the outcome of the war. Like many other German "miracle weapons," the advent of these submarines was far too late to have any effect on the war. Only two Type XXI boats came into service.

In the final analysis, patrol aviation in the Atlantic in WW II played a significant role in winning the Battle of the Atlantic and established the basis for future American and allied advances in air antisubmarine warfare through the years of the cold war submarine threat and up to this time. ■

6 Nov: Recognition of the future importance of turbojet and turboprop power plants led the Bureau of Aeronautics to request the Naval Air Material Center to study requirements for a laboratory to develop and test gas-turbine power plants. This initiated action which led to the establishment of the Naval Air Turbine Test Station, Trenton, N.J.

29 Nov: The changing character of the war was reflected in a revision of the aircraft complement of *Essex*-class carrier air groups to 73 VF, 15 VB and 15 VT. The fighter complement was to be filled by two squadrons of 36 planes each, plus one for the air group commander, and to include 4 VF(N), 2 VF(P) and 2 VF(E). The change to the new figures was gradual, beginning with the assignment of Marine fighter squadrons in December and continuing with the establishment of VBF squadrons the following month.

7 Dec: *Chourre* (ARV 1) was commissioned as the first aviation repair ship of the U.S. Navy, Captain A. H. Bergeson commanding.

12 Dec: Three Evacuation Squadrons (VEs) were established in the Pacific from Air-Sea Rescue Squadron elements already providing evacuation services.

30 Dec: The specification on aircraft color was amended to provide that patrol and patrol bombing landplanes received a color scheme that was similar to that prescribed for carrier-based airplanes. Specifically, the patrol planes and patrol bombers were to be painted semigloss sea blue on top and bottom surfaces of wings and on all horizontal tail surfaces; other tail surfaces and the fuselage were to be nonspecular sea blue.

Super Sara

"Truly this is a name which rings with the courage and might of our sea power."

Adm. Arthur Radford

By Steven D. Hill

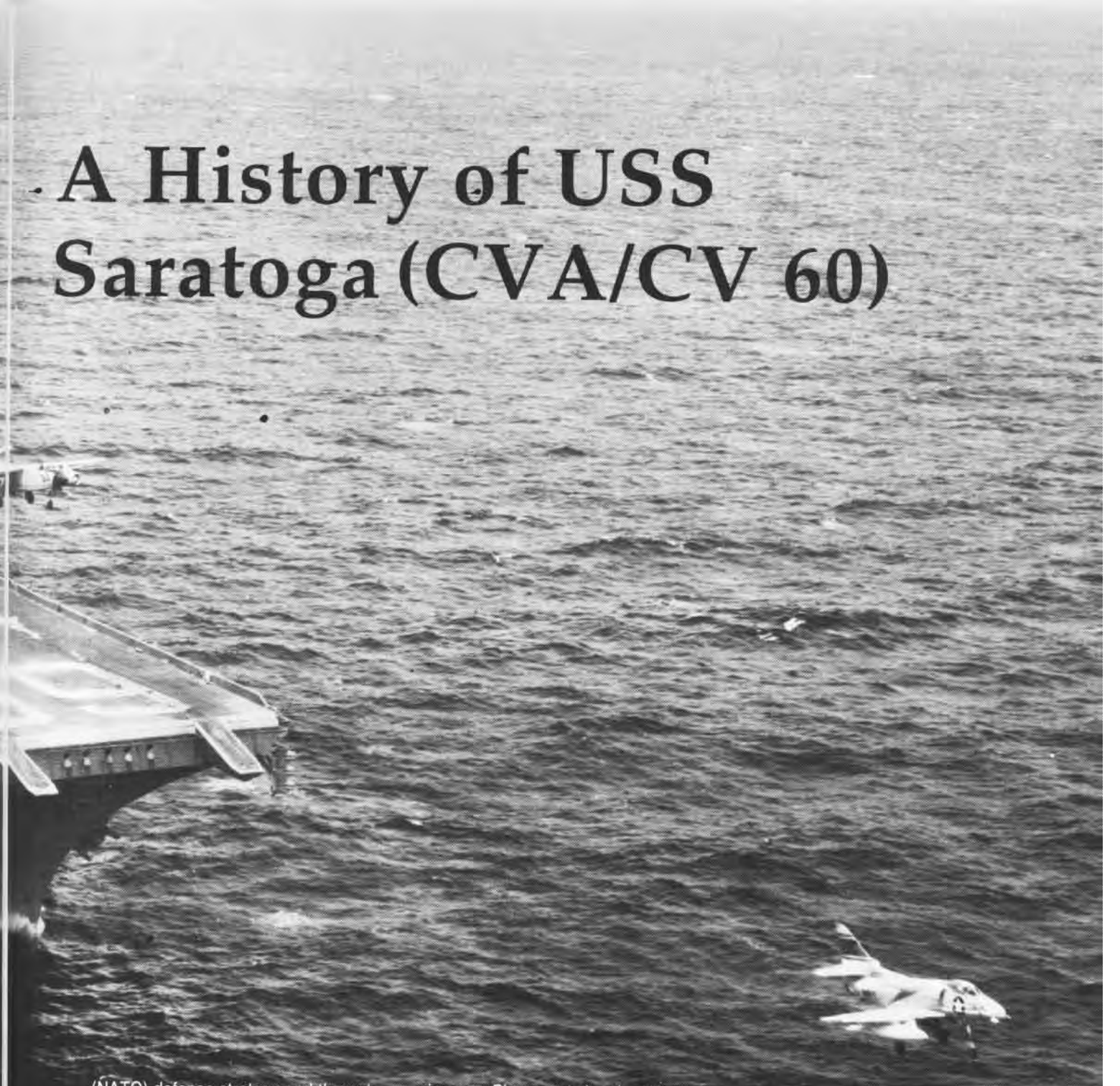
There is a rich heritage behind the name *Saratoga*. From the age of sail to the birth of Naval Aviation and the emergence of the aircraft carrier as the centerpiece of our Navy's fleet, the name *Saratoga* has served with distinction. This heritage is vital to the morale of the men and women of our Navy, and it is with great sadness that we must bid farewell to this name.

Saratoga, the sixth warship of the United States Navy to bear that name, was laid down on 16 December 1952. Three years and four months later, on 14 April 1956, CVA 60 was placed in commission, Captain R. J. Stroh commanding. The carrier was redesignated CV 60 on 30 June 1972, making her the first CVA to receive the CV designation.

Saratoga, like her older sister, *Forrestal* (CV 59), was destined to be an Atlantic Fleet flattop for the entire length of her service. In 14 years, from 1958 through 1971, she completed a total of 11 cruises to the Mediterranean.

Sara was on station during the Suez Crisis in 1958 and in 1962 participated in the quarantine of Cuba during the Missile Crisis. She was a key element in North Atlantic Treaty Organization

A History of USS Saratoga (CVA/CV 60)



(NATO) defense strategy and throughout this period participated in numerous NATO naval exercises.

Following her tenth Mediterranean cruise, *Sara* was chosen to test the CV concept. Up to that time, the antisubmarine warfare (ASW) mission had been handled mostly by old *Essex*-class carriers. Toward the end of the sixties, the *Essex*-class CVSs were beginning to show signs of their age and were being retired from service. It was theorized that ASW carrier groups could be merged with attack air groups aboard the supercarriers, forming an all-purpose air group. Plans went ahead and it was decided that on her next deployment, set to begin on 7 June 1971, *Saratoga* would deploy with Air Antisubmarine Squadron (VS) 28, with S-2E *Trackers*, and Helicopter Antisubmarine Squadron (HS) 7, with Sikorsky SH-3D *Sea King* helicopters, embarked.

In addition to her new squadrons, *Sara* received a fully equipped Antisubmarine Classification Analysis Center. Modifications were also made to her support aviation spaces to enable operation of SH-3D, S-2E and EA-6B aircraft.

Saratoga (CVA 60) simultaneously launches a VA-34 A4D-2 Skyhawk and a VAH-9 A3D-2 Skywarrior during operations at sea, May 1959.

Following sea trials and carrier qualification training, *Saratoga* was ready to deploy with her modified air wing. Operations during the cruise indicated that the S-2 *Tracker* with its two reciprocating engines was not satisfactory. Those in favor of the all-purpose CV concept pointed to the jet-powered Lockheed S-3 *Viking*, then in development, as the type that would prove the practicality of an integrated air wing.

During the spring of 1972, the war in Vietnam was rapidly intensifying. The North Vietnamese had launched a major invasion of the south. In response, the Nixon administration began gradually lifting the restrictions that had been placed on bombing in the north since 1968. More carriers were required on station, and by 5 April four carriers were operating in the Gulf of Tonkin. The carriers present were *Hancock* (CVA 19), *Coral Sea* (CVA 43), *Kitty Hawk* (CVA 63) and *Constellation* (CVA 64).

Back in Florida, *Sara* had just returned from her final sea trial/carrier qualification period before her next scheduled deployment to the Mediterranean, which was set to begin on 1 May.

Many of her officers and men had departed on leave in order to spend some time with their families. The following afternoon, on 8 April, *Sara* was informed that her services were required in Southeast Asia. Being the most fully trained flattop available, *Saratoga* was directed to "proceed to the Gulf of Tonkin in order to discourage North Vietnamese aggression and to hold the line, thus protecting U.S. lives in South Vietnam." All personnel were recalled, and on 11 April *Sara*, with Carrier Air Wing (CVW) 3 embarked, departed Naval Station (NS), Mayport, Fla., to begin her first ever combat deployment.

On 8 May, *Saratoga* arrived at Subic Bay, Republic of the Philippines, via the Indian Ocean. Nine days later, she was operating from Dixie Station in defense of An Loc, Kontum and Quang Tri in South Vietnam.

Sara sailed north to Yankee Station on the first of June, and began launching Alpha strikes, armed reconnaissance sorties and mining operations on the second.

During an Alpha strike on the Hon Gai coal processing facility on 7 June, an RA-5C from Reconnaissance Heavy Attack Squadron 1 was shot down by an SA-2 surface-to-air missile (SAM) while making a reconnaissance run over Haiphong Harbor. Both crewmen were rescued. One week later, antiaircraft artillery destroyed an A-7A *Corsair II* of Attack Squadron (VA) 37 being flown by Lieutenant Commander John Davis, who was declared missing in action.

Aircraft from CVG-3 fill Saratoga's flight deck. VF-31 F3H Demons, VA-34 A4D Skyhawks, VAH-9 A3D Skywarriors, VA-35 AD-6 Skyraiders and VF-32 F8U Crusaders are all visible, an indication of the diversity of air group composition in the late fifties.

Being at Subic Bay, *Sara*'s *Phantom* units, Fighter Squadrons (VFs) 31 and 103, had missed the big dogfight of 10 May. MiG activity had diminished by the time *Saratoga* arrived at Yankee Station, but on the final day of her first line period, the opportunity to engage hostile MiGs finally availed itself. Two F-4J *Phantom IIs* from the VF-31 *Tomcatters* engaged three MiG-21s in an elaborate dogfight. After dodging four SAMs, Commander Sam Flynn, the squadron's XO, and his Radar Intercept Officer (RIO), Lieutenant Bill John, destroyed one of the MiGs with an AIM-9 Sidewinder.

During the second line period on 11 July, the MiGs avenged their loss. CVW-3 was ordered to strike an enemy supply build-up deep in the heartland of the Red River Delta at Hai Duong. MiG combat air patrol for the strike was provided by VF-103 *Sluggers* Lieutenants Bob Randall and Frederick Masterson in Clubleaf 212 and Lieutenants Alvin Merriam and Michael Linn in Clubleaf 211. The section was engaged by two MiG-17s. Lt. Merriam went to full afterburner and jettisoned his centerline drop tank. Lt. Randall was seen going high. The MiGs crossed under Randall. Merriam called, "212, they're passing under you," and attempted a borsesight radar lock-up which was not successful. The MiGs separated, one diving for the deck, the other executing a climbing turn. Lt. Merriam attempted to chase the diving MiG but lost him after about 10 seconds. He then turned to look for the other MiG and tried to contact Lt. Randall in 212. Several seconds later, Clubleaf 211 sighted two aircraft, one trailing

USS Saratoga (CVA/CV 60) Deployments

Shakedown
18 August to 19 December 1956

CVG-4	(Tailcode: F)
VF-22	F2H-4
VF-43	F9F-8
VA-44	F9F-8B
VA-45	AD-6
VMF-533	F2H-4
HU-2 Det 43	HUP-2

North Atlantic
(NATO Fall Exercises)
3 September to 22 October 1957

CVG-7	(Tailcode: AG)
VF-61	F3H-2M
VF-101	F4D-1
VA-72	A4D-1
VA-75	AD-6
VAH-9	A3D-2
VFP-62 Det 43	F2H-2P
VA(AW)-33 Det 43	AD-5N
VAW-12 Det 43	AD-5W
HU-2 Det 43	HUP-2

Mediterranean
1 February to 1 October 1958

CVG-3	(Tailcode: AC)
VF-31	F3H-2N
VF-32	F8U-1
VA-34	A4D-1
VA-35	AD-6
VAH-9	A3D-2
VAW-12 Det 43	AD-5W
VA(AW)-33 Det 43	AD-5N
VFP-62 Det 43	F9F-8P
HU-2 Det 43	HUP-2

Mediterranean
15 August 1959 to 26 February 1960

CVG-3	(Tailcode: AC)
VF-31	F3H-2
VF-32	F8U-1E
VA-34	A4D-2
VA-35	AD-6
VA-36	A4D-2
VAH-9	A3D-2
VAW-12 Det 43	AD-5W
VAW-33 Det 43	AD-5Q
VFP-62 Det 43	F8U-1P
HU-2 Det 43	HUP-2

Mediterranean
22 August 1960 to 26 February 1961

CVG-3	(Tailcode: AC)
VF-31	F3H-2
VF-32	F8U-1E
VA-34	A4D-2
VA-35	AD-6
VA-36	A4D-2
VAH-9	A3D-2
VAW-12 Det 43	WF-2
VFP-62 Det 43	F8U-1P
HU-2 Det 43	HUP-2

Mediterranean
28 November 1961 to 12 May 1962

CVG-3	(Tailcode: AC)
VF-31	F3H-2
VF-32	F8U-2N
VA-34	A4D-2
VA-35	AD-6/AD-5
VA-36	A4D-2N
VAH-9	A3D-2
VAW-12 Det 43	WF-2
VAW-33 Det 43	AD-5Q/W
VFP-62 Det 43	F8U-1P
HU-2 Det 43	HUP-3

Cuban Missile Crisis
3 December to 21 December 1962

Mediterranean
29 March to 25 October 1963

CVG-3	(Tailcode: AC)
VF-31	F-3B
VF-32	F-8D
VA-34	A-4C
VA-35	A-1H
VA-36	A-4C
VAH-9	A-3B
VAW-12 Det 60	E-1B
VFP-62 Det 60	RF-8A
HU-2 Det 60	UH-25B

Mediterranean
28 November 1964 to 12 July 1965

CVW-3	(Tailcode: AC)
VF-31	F-4B
VF-32	F-8D
VA-34	A-4C
VA-35	A-1H
VA-36	A-4C
RVAH-9	RA-5C
VAW-12 Det 60	E-1B
HU-2 Det 60	UH-2A

Mediterranean
11 March to 26 October 1966

CVW-3	(Tailcode: AC)
VF-31	F-4B
VF-103	F-4B
VA-34	A-4C
VA-46	A-4C
VA-106	A-4C
RVAH-12	RA-5C
VAW-12 Det 60	E-1B
HC-2 Det 60	UH-2B

Mediterranean
2 May to 6 December 1967

CVW-3	(Tailcode: AC)
VF-31	F-4B
VF-103	F-4B
VA-176	A-1H
VA-216	A-4B
VAH-10 Det 60	KA-3B
RVAH-9	RA-5C
VAW-121 Det 60	E-1B
HC-2 Det 60	UH-2A

Mediterranean
9 July 1969 to 22 January 1970

CVW-3	(Tailcode: AC)
VF-31	F-4J
VF-103	F-4J
VA-46	A-7B
VA-113	A-7B
VA-75	A-6A
VAW-125	E-2A
RVAH-1	RA-5C
VAH-10 Det 60	KA-3B
HC-2 Det 60	UH-2C

Mediterranean
17 June to 9 November 1970

CVW-3	(Tailcode: AC)
VF-31	F-4J
VF-103	F-4J
VA-37	A-7A
VA-105	A-7A
VA-75	A-6A
RVAH-9	RA-5C
VAQ-130 Det 4	EKA-3B
VAW-123	E-2A
HC-2 Det 60	HH-2D

Mediterranean
7 June to 28 October 1971

CVW-3	(Tailcode: AC)
VF-31	F-4J
VF-103	F-4J
VA-37	A-7A
VA-105	A-7A
VA-75	A-6A/KA-6D
VMCJ-2 Det A	EA-6A
VAW-123	E-2B
VS-28	S-2E
HS-7	SH-3D

WestPac/Vietnam
11 April 1972 to 13 February 1973

CVW-3	(Tailcode: AC)
VF-31	F-4J
VF-103	F-4J
VA-37	A-7A
VA-105	A-7A
VA-75	A-6A/B/KA-6D
RVAH-1	RA-5C
VAW-123	E-2B
HS-7	SH-3D

Mediterranean
27 September 1974 to 19 March 1975

CVW-3	(Tailcode: AC)
VF-31	F-4J
VF-103	F-4J
VA-37	A-7E
VA-105	A-7E
VA-75	A-6E/KA-6D
RVAH-11	RA-5C
VAW-123	E-2C
HS-7	SH-3H

Mediterranean
6 January to 28 July 1976

CVW-3	(Tailcode: AC)
VF-31	F-4J
VF-103	F-4J
VA-37	A-7E
VA-105	A-7E
VA-75	A-6E/KA-6D
VAQ-131	EA-6B
VAW-123	E-2C
VS-22	S-3A
VFP-63 Det 5	RF-8G
HS-7	SH-3H

Mediterranean
11 July to 23 December 1977

CVW-3	(Tailcode: AC)
VF-31	F-4J
VF-103	F-4J
VA-37	A-7E
VA-105	A-7E
VA-75	A-6E/KA-6D
VS-22	S-3A
VAQ-138	EA-6B
VAW-123	E-2C
HS-7	SH-3H

Mediterranean
3 October 1978 to 5 April 1979

CVW-3	(Tailcode: AC)
VF-31	F-4J
VF-103	F-4J
VA-37	A-7E
VA-105	A-7E
VA-75	A-6E/KA-6D
RVAH-12	RA-5C
VAQ-136	EA-6B
VAW-123	E-2C
VS-22	S-3A
HS-7	SH-3H

Mediterranean
10 March to 27 August 1980

CVW-3	(Tailcode: AC)
VF-31	F-4J
VF-103	F-4J
VA-37	A-7E
VA-105	A-7E
VA-75	A-6E/KA-6D
VS-22	S-3A
VAW-123	E-2C
HS-7	SH-3H

Mediterranean
2 April to 20 October 1984

CVW-17	(Tailcode: AA)
VF-74	F-14A
VF-103	F-14A
VA-81	A-7E
VA-83	A-7E
VMA(AW)-533	A-6E/KA-6D
VAW-125	E-2C
VMAQ-2 Det X	EA-6B
VS-30	S-3A
HS-3	SH-3H

Mediterranean/Indian Ocean
25 August 1985 to 16 April 1986

CVW-17	(Tailcode: AA)
VF-74	F-14A
VF-103	F-14A
VA-81	A-7E
VA-83	A-7E
VA-85	A-6E/KA-6D
VAQ-137	EA-6B
VAW-125	E-2C
VS-30	S-3A
HS-3	SH-3H

Mediterranean
5 June to 17 November 1987

CVW-17	(Tailcode: AA)
VF-74	F-14A
VF-103	F-14A
VA-81	A-7E
VA-83	A-7E
VA-85	A-6E/KA-6D
VAW-125	E-2C
VAQ-137	EA-6B
VS-30	S-3A
HS-3	SH-3H

Mediterranean/Red Sea
(Desert Shield/Desert Storm)
7 August 1990 to 28 March 1991

CVW-17	(Tailcode: AA)
VF-74	F-14A+
VF-103	F-14A+
VFA-81	FA-18C
VFA-83	FA-18C
VA-35	A-6E/KA-6D
VAW-125	E-2C
VAQ-132	EA-6B
VS-30	S-3B
HS-3	SH-3H

Mediterranean
(Provide Promise)
6 May to 6 November 1992

CVW-17	(Tailcode: AA)
VF-74	F-14B
VF-103	F-14B
VFA-81	FA-18C
VFA-83	FA-18C
VA-35	A-6E/KA-6D
VAQ-132	EA-6B
VAW-125	E-2C
VS-30	S-3B
HS-9	SH-3H

Mediterranean
11 January to 24 June 1994

CVW-17	(Tailcode: AA)
VF-103	F-14B
VFA-81	FA-18C
VFA-83	FA-18C
VA-35	A-6E
VAQ-132	EA-6B
VAW-125	E-2C
VS-30	S-3B
HS-15	SH-60F
VQ-6 Det A	ES-3A

the other. The trailing aircraft launched a missile that impacted the lead aircraft's aft fuselage. Lts. Merriam and Linn in Clubleaf 211 could not identify either the downed aircraft or the shooter. They orbited the area for a short time searching but were soon forced to retire with low fuel. Lts. Randall and Masterson were later confirmed as prisoners of war (POWs).

The *Sluggers* were not finished with the MiGs. One month later, on 10 August, Lieutenant Commander Gene Tucker and Lieutenant (jg) Bruce Edens, in Clubleaf 206, destroyed a MiG-21 with AIM-7 Sparrow radar-guided missiles. Because the engagement took place at night, neither Tucker nor Edens visually sighted the MiG impacting. Confirmation of the kill was finally made on 12 August.

Saratoga and CVW-3 completed a total of six line periods off the coast of Vietnam. The carrier departed Yankee Station on 7 January 1973 and sailed back to Mayport via Subic Bay, Singapore and the Indian Ocean, returning home on 13 February. During her combat tour, *Sara* averaged more than 100 carrier landings per combat day. CVW-3 had flown some 15,000 combat missions, expending over 14,000 tons of ordnance. The *Saratoga*/CVW-3 team did not return untouched, however. Thirteen of their planes had been lost in combat. Twelve aircrewmen were either killed or missing.

Following her Vietnam service, *Sara* spent time at Norfolk, Va., undergoing an extensive refit. Repairs were made and modernization took place. New jet-blast deflectors were installed and other improvements were made enabling *Sara* to operate the Navy's new fleet defense fighter, the Grumman F-14A *Tomcat*.

Saratoga resumed her Mediterranean deployment routine on 27 September 1974. She completed five additional Mediterranean deployments before entering Philadelphia Naval Shipyard in the fall of 1980 to become the first carrier to take part in the Service Life Extension Program (SLEP).

Sara emerged from the shipyard on 2 February 1983 and sailed for Mayport. Routine training and a post-SLEP shakedown kept the carrier occupied throughout the spring and summer.

In March of 1984, *Sara* was making final preparations for her first post-SLEP deployment to the Mediterranean. CVW-17 replaced CVW-3. Reorganization of these two air wings resulted in VF-103 chopping to CVW-17. VF-103 had flown from *Sara*'s deck since 1966 and would continue to do so until the carrier's final deployment in 1994.

Sara departed Mayport bound for the Mediterranean on 2 April and completed a successful deployment. She returned home to Florida on 20 October 1984.

On 7 October 1985, terrorists highjacked the Italian cruise liner *Achille Lauro*. In the process of taking control of the vessel, the highjackers murdered American citizen Leon Klinghoffer, an elderly man confined to a wheelchair. After maintaining control of the ship for two days, the terrorists released control of the *Achille Lauro* to Egyptian authorities, who had promised the terrorists safe passage out of their country.

On 10 October, President Ronald Reagan issued a "no notice" tasking to *Saratoga* and CVW-17 that an Egypt Air Boeing 737 be intercepted. *Sara*, having been on deployment since 25 August, dispatched a flight of four F-14A *Tomcats*, two from VF-74 and two from VF-103. Operating in conjunction with an E-2C *Hawkeye* from Carrier Airborne Early Warning Squadron 125, the *Tomcats* completed the interception and forced the 737 to land at NAS Sigonella, Sicily. The highjackers were taken into custody by Italian authorities. The stunning success of the operation prompted President Reagan to state, "You can run, but you can't hide."

For the next several months, *Sara* continued her cruise. In April 1986, things heated up again. This time Libya was the focus of *Sara*'s attention.

Saratoga, together with *America* (CV 66) with CVW-1 embarked and *Coral Sea* (CV 43) with CVW-13 embarked, conducted Freedom of Navigation exercises in waters claimed by Libya to be her own. International law permits a three-mile territorial limit on surrounding bodies of water. Libya claims a 12-mile limit and all of the Gulf of Sidra. Libyan leader Muammar Qaddafi was threatening the U.S. Sixth Fleet with destruction if any of its vessels or aircraft crossed a "Line of Death" that stretched across the Gulf of Sidra.

On 24 March, A-7E *Corsair IIs* from VAs 81 and 83 participated in a retaliatory strike against SA-5 SAMs based at Sirte. The *Sunliners* of VA-81 acted as the decoy group for the HARM (High-speed Anti-Radiation Missile) firing A-7Es of sister squadron VA-83, the *Rampagers*.

Meanwhile, A-6E *Intruders* from VA-85, aboard *Saratoga*, and VA-34, from *America*, attacked a missile boat with Rockeye cluster bombs.

The following day, VA-85 attacked a Libyan *Nanuchka II*-class corvette utilizing Harpoon antiship missiles. VA-55 A-6Es from *Coral Sea* attacked the same warship with Rockeyes. The corvette was hit, and sank. A second corvette was heavily damaged but managed to limp back to the port of Benghazi.

The Sixth Fleet was recalled and during the respite *Saratoga* was allowed to return to Mayport, bringing to a close what had been a very eventful deployment. *Sara* returned to Florida on 16 April 1986.

Following another Mediterranean deployment in 1987, *Sara* was due for a refit and general maintenance period. CVW-17 went through a sort-of overhaul itself. VFs 74 and 103 completed transition to the new F-14A Plus, an upgraded F-14 powered by General Electric 110 engines. The light attack squadrons VAs 81 and 83 became strike fighter squadrons, flying the new McDonnell Douglas F/A-18C *Hornet*. Veteran medium attack squadron VA-35, the *Black Panthers*, joined CVW-17, as did the *Scorpions* of Tactical Electronic Warfare Squadron 132.

Things were moving progressively toward yet another Mediterranean deployment, until 2 August 1990. On that date Iraq invaded Kuwait. The Bush Administration soon asked, "Where are the carriers?"

Independence (CV 62), with CVW-14 embarked, was directed to proceed to the Gulf of Oman. On 7 August, *Dwight D. Eisenhower* (CVN 69) and CVW-7 transited the Suez Canal, and *Saratoga* and CVW-17 departed Mayport for a previously scheduled Mediterranean deployment. On 22 August, *Saratoga* transited the Suez Canal and relieved *Eisenhower*.

As time wore on, it became clear that Iraq would not leave Kuwait on its own accord. By 16 January, six carriers were on station, the largest gathering of flattops since Vietnam. The carriers present were *Saratoga*, *Theodore Roosevelt* (CVN 71), *Midway* (CV 41), *John F. Kennedy* (CV 67), *America* and *Ranger* (CV 61).

Before entering the Red Sea for the final run-down to what would prove to be war, *Sara* anchored off Haifa, Israel, for a port call. On 21 December, an Israeli-chartered liberty ferry shuttling

102 crew members from Haifa back to Saratoga capsized and sank. Twenty U.S. sailors died, one crew member was missing and presumed drowned.

On 17 January, the liberation of Kuwait commenced with a massive air assault. Over 100 Tomahawk cruise missiles were launched from Navy warships in the Mediterranean, Persian Gulf and Red Sea. Next, the Navy launched 228 combat sorties from its 6 aircraft carriers.

Saratoga launched *Hornets* from VFA-81 (VA-81 had been redesignated a strike fighter squadron) for their first strike of the war. One of the *Sunliners*, Lieutenant Commander Michael S. Speicher, did not return. His *Hornet* was destroyed, it was presumed, by an Iraqi SAM. The Gulf War Air Power Survey, however, attributes the loss of LCdr. Speicher to an Iraqi MiG-25 *Foxbat*.

The *Black Panthers* of VA-35, fighting in their fourth war, were heavily engaged the first night of Desert Storm. Two of their birds were hit; one managed to land in Saudi Arabia with extensive damage. The other, carrying Lieutenants Robert Wetzel, pilot, and Jeffrey N. Zaun, bombardier navigator, was destroyed. Both Wetzel and Zaun ejected safely, only to be captured by Iraqi forces.

The *Sunliners* provided four *Hornets* for the first day strike of the war, concurrent attacks on western Iraqi airfields by aircraft from both CVWs 17 and 3. Inbound to the target, the flight lead, Commander Bill McKee, received the following call from an E-2 *Hawkeye* controller, "400, bandits on your nose, 15." A short time later, two Iraqi MiG-21s were destroyed. Lieutenant Commander Mark Fox got the first, and Lieutenant Nick Mongillo accounted for the second.

Having destroyed two would-be interceptors, the four *Sunliners* proceeded to carry out their attack on the airfield. The strike/fighter concept had been validated in combat. These kills were the only fixed wing victories for the Navy during the Gulf War, and they were also the first ever for the F/A-18 *Hornet*.

After the first couple days of the air campaign, it became clear that the Iraqi air force could not defend its own airspace from attacks by coalition aircraft. Losses to Iraqi air defenses ceased for the Navy until 21 January. On that date, an F-14A Plus of VF-103—flown by Lieutenants Devon Jones, pilot, and Lawrence Slade, RIO—was shot down by a SAM. Lt. Jones was rescued by helicopter, with the assistance of an Air Force A-10 "Sandy" flying rescue combat air patrol. Lt. Slade was captured and sat out the rest of the war as a POW.

Angelo Romano

A VFA-81 Sunliners' FA-18C Hornet lands on board Saratoga during a Mediterranean deployment in 1992. This Hornet, piloted by LCdr. Mark Fox, was credited with the destruction of an Iraqi MiG-21 during the Gulf War.

Several times during the deployment, rumors of pending relief by *Forrestal* and CVW-6 abounded. The rumors proved false and *Sara* completed the war from beginning to end. On 11 March, *Saratoga* departed the Persian Gulf area bound for Mayport. She arrived 28 March to a rousing welcome from a grateful nation. Super *Sara* had seen as much combat as she would in her career.

That was not exactly clear at the time, however. The situation in the Balkans, specifically, in the region formerly known as Yugoslavia, had deteriorated. Serbians, Muslims and Croatians began fighting a savage war against each other in the province known as Bosnia-Herzegovina.

Saratoga got under way on 6 May for her first postwar cruise. The following month *Sara* became the first U.S. flattop to conduct sustained flight operations from the Adriatic Sea. She was directed to that area in response to the situation in Bosnia. In August, *Sara* sailed toward Iraq to enforce a "no fly zone" over southern Iraq.

Before completing her deployment, *Saratoga* participated in NATO Exercise Display Determination '92 in the Aegean Sea in October. During the exercise, two Sea Sparrow ship-to-air missiles were accidentally fired from *Sara*. The missiles struck the Turkish destroyer *Muavenet*, killing 5 crew members and injuring 14. *Saratoga* was relieved by *John F. Kennedy* and returned to Mayport on 6 November. Upon her return, the Navy, after reviewing its needs and budget, decided that *Sara* would make one final deployment in 1994 before being decommissioned.

Sara's farewell tour commenced on 11 January. During her deployment, she was ordered to the coast of Bosnia and enforced a "no fly zone" in that area. When a violation did occur, *Sara* was making a port call. Consequently, her pilots were not able to participate in the great "*Galeb* Turkey Shoot," in which two Air Force F-16s destroyed four *Super Galeb* close-air-support attack aircraft.

Sara completed her deployment in June, following a turnover with *George Washington* (CVN 73). The Navy's oldest and newest flattops passed close by one another in a fitting farewell to a true "cold war warship." CV 60 returned to Mayport for the last time on 24 June. On Saturday, 20 August 1994, *Saratoga* was decommissioned.

Growing up in north central Florida, I saw *Saratoga*'s aircraft train in the skies above the Ocala National Forest. I have been to Mayport, and one day in 1978, I saw a huge gray flattop moored to the pier. Her name was *Saratoga*, and she was the first carrier I ever saw. Goodbye, Super *Sara*. ■

Mr. Hill is an archives technician in the Naval Aviation History Branch of the Naval Historical Center.

V-4's Fuel Keeps Air Wing Flying

By JO2 Lance Lindley

A lot of factors go into successfully launching an aircraft. There must be qualified sailors to direct the plane, run the catapult and control the existing air traffic. There must be a trained pilot and a properly maintained aircraft.

And there must be fuel—Clean, Clear and Bright (CCB)—or it will be a very short trip.

Air Department's V-4 Division is tasked with receiving, storing, testing, purifying and providing all the JP-5 aviation fuel used by Carrier Air Wing 5 on board *Independence* (CV 62) and the lube oil used by *Indy*'s four catapults.

When JP-5 is brought aboard during an underway replenishment, it travels through V-4's transfer main system into one or more of its 53 stowage tanks. At this point, it is under the control of the pump room operator, who works on the seventh deck. He sends the fuel through a centrifugal purifier that spins at 4,100 revolutions per minute, separating water and sediment from the fuel. The fuel is then sent to the four service tanks to await its trip to the flight deck. Combined, V-4's stowage and service tanks can hold more than 1.5-million gallons of JP-5.

Before fuel can be fed into a thirsty aircraft, it has to be inspected a final time to make sure it is CCB. This vital task falls to one of V-4's filter operators.

"When they go to fuel aircraft," explained Aviation Boatswain's Mate-Fuels First Class (Air Warfare) (ABF1(AW)) David Young, "they turn on the service pump, which sends fuel up to the filter operator.

"He opens the inlet, checks the pressure and takes a visual sample," Young continued. "If there's water in the fuel, there will be droplets inside. Then he spins the fuel in his jar and makes a vortex. If there's water and sediment in there, it will dance along the bottom."

ABF3 Mark Mooney checks an aircraft fuel sample for water and sediment aboard Independence (CV 62).

JO2 Lance Lindley

If the fuel is CCB, it is sent up to the fueling stations on the flight deck to be pumped into aircraft. If not, the filter operator stops the fuel at his station, sends a lab sample up to V-4's quality control and contacts V-4's nerve center, called "belowdecks." They would then send a man to check another filter station. If that fuel is contaminated as well, they would try a different pump room.

But what if the entire batch of fuel is below standards? Do the planes stay on deck until new fuel is obtained?

Hardly. "V-4 can purify bad fuel on board," explained ABFAN Robert Robinson. "First we run it through a prefilter and a reclamation filter, then we send it on to the centrifugal purifier."

"It's a lot of work on the equipment, cleaning so much water and sediment using those filters," added Young, "so we check the fuel as it comes on board. In the long run, it's the commanding officer's call whether we accept it or reject it."

V-4 is responsible for more than the storage and cleanliness of the JP-5 on board. The division refuels the aircraft on the flight deck, controls all the fuel station isolation valves and provides the lube oil for the catapults.

These missions give the division of just over 100 personnel a lot to do, and when it comes to a dangerous, vital asset like fuel, there's no room for error.

ABF3 Cleveland Parker, a V-4 filter operator, added, "I'm the safety man. We make sure there's no water in the fuel to foul up the lines or sediment to mess up the engine. We prevent accidents and keep the pilots alive." ■

JOC Lance Johnson

ABF2(SW) Marvin Moss refuels an F-14 aboard Independence (CV 62) while under way in the western Pacific.

Tactical Information Broadcast Service

By Lieutenant R. Scott Martin

As most of you know, present Navy doctrinal focus is on joint/littoral warfare. Currently, carrier battle groups and attached operational air wings have a shortfall in their ability to coordinate and execute an airborne, quick-reaction, suppression-of-enemy-air-defenses effort against high-threat, high-priority surface-to-air missiles (SAMs)/electronic targets. Suppression of enemy air defenses can be extremely difficult due to the movement of fixed and mobile SAM sites. Lack of near-real-time (NRT), over-the-horizon (OTH) targeting data to tactical airborne assets deters aircraft destruction of sites due to delayed scheduling of those strike assets once a target is detected. However, projects such as "Talon Sword" and "Radiant Oak" demonstrated the utility and feasibility of delivering data via tactical receive equipment/tactical-related applications (TRE/TRAP) to tactical cockpits (in NRT) in order to augment existing onboard systems. This data improved aircrew situational awareness in OTH scenarios, enhanced aircraft survivability and provided an additional means and increased capability in targeting.

It is important to note that, unlike the TRAP broadcast, another data stream available via the Tactical Information Broadcast Service (TIBS) is more timely. TIBS offers off-board support via an almost instantaneous correlation and fusion of data from numerous tactical intelligence sensors. Prototyped prior to Desert Shield and becoming fully operational by the end of Desert Storm, this national data stream has become the standard for U.S. Army and U.S. Air Force command and control warfare and command platforms. Increased accuracy and timeliness of information via TIBS significantly enhances the EA-6B's survivability and operational effectiveness via improved threat warning, situational awareness and reactive cuing for onboard systems.

On 6 January 1994, at NAS Whidbey Island, Wash., Tactical Electronic Warfare Squadron (VAQ) 130 became the Navy's first tactical squadron to have an aircraft receive both TIBS and TRAP broadcasts simultaneously. The data was presented on a single display, in the cockpit, in near-real-time. The test and evaluation was given the name "Prowler Hammer", a VAQ-130 initiative demonstrating the utility of the TIBS broadcast.

In preparation for "Prowler Hammer," squadron aviation electronics technicians and contractor engineers installed a Commanders Tactical Terminal/Hybrid Receiver (CTT/H-R) in one squadron aircraft. A Toshiba 6400 laptop computer configured with TIBS and TRE software displayed the data. In the future, upgrades could involve the addition of a prototype onboard processor for enhanced threat recognition and a full-duplex TIBS link between the EA-6B and the carrier battle group. This full-duplex capability would allow *Prowler* aircrew to query the various producers on the network for amplification of any contacts of interest and allow the EA-6B to transmit its own information over TIBS.

Flight testing was conducted on 13 January 1994 at Majors airfield in Greenville, Texas. During testing, the EA-6B flew against simulated targets being generated by the Multi-Sensor Test Facility (MSTF) located there.

During the approximately three-hour flight, an RC-135, using onboard sensors, collected and reported target activity to the EA-6B via TIBS. Differences between time of intercept (TOI) of MSTF's signals reported by the RC-135 and reception on board the EA-6B via TIBS was significant. In addition to testing/measuring the difference between the RC-135's TOI to the CTT/H-R signal reception, the TIBS message content was demonstrated for the *Prowler* aircrew. Graphics-oriented composite situational data included aircraft tracks and fixed and moving ground targets. Track amplification included friendly, hostile and unknown designations (color coded) and pairing lines associating certain airborne tracks correlated by ground radar systems. Activity annotations indicated the target tracks mission and status. Finally, global situational awareness was demonstrated via TIBS by observing real-time U.S. flights in the Mediterranean.

Continued testing took place on 16 February 1994 while under way on *Dwight D. Eisenhower* (CVN 69). This first tactical aircraft at-sea TIBS test was conducted approximately 70 nautical miles east of Norfolk, Va. The TIBS network sign-on was expeditiously accomplished and produced another real-time display of the U.S. in the Mediterranean. Both ashore and at-sea tests were conducted with the CTT/H-R in the satellite mode of operation.

TIBS is a major tactical information source that can provide aircrew and carrier battle group warfare commanders with better targeting and expanded littoral coverage via superior threat warning and situational awareness. This tactical information is near-real-time and within the accuracy parameters of the various intelligence sensors.

Future plans for the incorporation of Aegis/carrier battle group data-stream line tracks into the TIBS broadcast will further complement the *Prowler*'s existing capabilities. Even without the RC-135 and other national asset support, the EA-6B could operate in the autonomous mode by correlating off-board tracks with onboard system data. However, it is very important to realize that advances in technology, such as the CTT/H-R, that enhance situational awareness should not be a tactical aircraft's sole source of data. Line-of-sight considerations (terrain masking), national asset availability, etc., reinforce the need for tactical command and control warfare aircraft to have their own capability to act autonomously. For example, nothing can replace the EA-6B's reactive ability to detect and suppress tactical pop-up SAMs while escorting a low-level strike group. Therefore, for augmentation purposes only, serious consideration should be given to incorporating TIBS on board other electronic support measures/command and control platforms such as the E-2, ES-3 and S-3. Lastly, the "Prowler Hammer" concept is based on off-the-shelf technology that is in use today around the world. ■

Lt. Martin is VAQ-130's Tactical Development and Evaluation Officer.

NAMP Replaces MI's with NAMPSOP

By Cdr. Pete Laszcz and LCdr. Duane Mallicoat

Well, the first question is obvious. What is a NAMPSOP? The acronym stands for Naval Aviation Maintenance Program Standard Operating Procedures (NAMPSOP), which in English means a standard operating procedure, or procedure document, for the 6 managed and 18 monitored quality assurance programs currently requiring a NAMP-mandated maintenance instruction (MI). NAMPSOP's purpose is to provide standardized procedures for management of programs that are in sufficient detail to allow NAMPSOP to become a "stand-alone" procedure document, replacing all lower-level supplemental instructions and MIs.

So why change from MIs? MIs have served their purpose well for more than 20 years within Naval Aviation. Why change now? Research with type commander (TYCOM) inspection teams and the Naval Safety Center indicates that around 80 percent of existing MIs and lower-level supplemental instructions are rehashed from the Naval Air Systems Command or TYCOM instruction, and only 20 percent deal with actual program management and responsibilities. By using the 80 percent that all TYCOMs agree with as the basis for NAMPSOP, and mediating the other 20 percent within all the TYCOMs, we can produce a stand-alone document for all of Naval Aviation. Yes, you're right. MIs work. However, research has overwhelmingly shown that they are redundant. The NAMPSOP will eliminate, or at least vastly reduce, this redundancy.

Will I see these before I retire? I've heard all the stories about the timetables inside the beltway! The answer is, yes! The current plan calls for implementation for the first five programs to coincide with the effective date of the Naval Aviation Maintenance Procedures manual (4790.2F) on 1 June 1995. Those five are: Fuel Surveillance, Oil Analysis, Aviators Breathing Oxygen Surveillance, Hydraulic Contamination, and Tire and Wheel Maintenance. Upon receipt of the initial NAMPSOP, all supplemental instructions and MIs relating to these programs are obsolete. The initial NAMPSOP will be mailed out with your copies of the 4790.2F. The other 13 monitored and 6 managed programs will become Volume 5 of the 4790.2F Change 1 effective 1 June 1996. Volume 5 will become the NAMPSOP and each program will have its own chapter. With the CD ROM NAMP you will be able to instantaneously review any and all requirements for any program within the NAMP. NAMPSOP chapters will be reviewed and updated as part of every NAMP upgrade. Remember that the CD ROM NAMP will be updated and issued annually.

Does this really save anything? Do I gain anything for my maintenance department? Chief of Naval Operations research with TYCOMs revealed that the NAMP requirement for MIs on the monitored and managed programs had generated in excess of 5,900 supplemental instructions and over 11,000 MIs at the organizational and intermediate levels Naval Aviation wide. If you use an average of five man-hours for annual review, rewrite, routing and signature, and add in the trees and forests we will save, the savings becomes evident. Over 85,000 man-hours! This will allow quality assurance to spend time monitoring and managing, instead of writing. So our answer is, yes, you gain efficiency and add man-hours back to "hands-on" maintenance, vice administrative support!

The biggest advantage to NAMPSOP is that it standardizes programs and provides procedures for a major part of Naval Aviation as we know it today. Just think . . . *all* maintenance activities, inspection teams, type/model/series wings, air stations, carrier air groups and TYCOMS using the same sheet of music. This will save a lot of training time for new people, because they won't have to learn new procedures every time they transfer.

Who's going to write the NAMPSOP? The NAMPSOP is essentially written . . . and it was written by you, the fleet. The Naval Aviation Maintenance Office (NAMO) at Naval Air Warfare Center Aircraft Division, Patuxent River, Md., is charged with consolidating the existing MIs and instructions and producing the NAMPSOP. NAMO is staffed with top flight people who have all recently been in the fleet and will ensure the NAMPSOP is a quality product you can actually use. Maintenance people from the TYCOM staffs will assist in this process.

If you have any questions on NAMPSOP or any other NAMP issues, feel free to call DSN 227-9725 or commercial 703-697-9725. Suggestions from the fleet are always solicited. ■

Awards

The **Marine Corps Aviation Association** presented the 1994 Annual Aviation Awards at the MCAA Reunion/Symposium held 15–18 September. The winners were:

Award	Winner
Alfred A. Cunningham (Aviator of the Year)	Lt. Col. M. D. Peatross
Robert Guy Robinson (Marine NFO of the Year)	Maj. B. B. Bizzell
Aviation Ground Officer of the Year	Maj. L. L. Denn
Marine Electronic Technician of the Year	SSgt. A. M. McLaughlin
Ordnance Technician of the Year	SSgt. L. A. Borbe
Air Command and Control Officer of the Year	Maj. W. L. Clemente
Air Command and Control Marine of the Year	MGySgt. D. L. Kopff
Bud Baker Trophy (V/STOL Enhancement)	Maj. J. M. Davis
Special Category (Exceptional Achievement)	1st Lt. E. L. Rine
Fixed Wing Aircrewman of the Year	MGySgt. E. N. Dicandia
Helicopter Aircrewman of the Year	SSgt. J. Womak
Marine Plane Captain of the Year	Cpl. W. J. Timms
James Maguire (Enlisted Aviation Safety)	MSgt. W. Wilber
James E. Nicholson (Enlisted Leadership)	GySgt. T. P. Hinger
Commandant's Aviation Efficiency Trophy	SOES, MCAS Cherry Point, N.C.
Edward S. Fris (Air Command and Control Unit of the Year)	MACS-4
Robert M. Hanson (Fighter Squadron of the Year)	VMFA-312
Lawson H. M. Sanderson (Attack Squadron of the Year)	VMFA(AW)-533
Keith B. McCutcheon (Helicopter Squadron of the Year)	HMM-268
Henry Wildfang (Aerial Refueler Squadron of the Year)	VMGR-152
Aviation Logistics Squadron of the Year	MALS-36
Wing Support Squadron of the Year	MWSS-174
Pete Ross (4th MAW Safety Award)	VMFA-134

The following annual awards were announced 20 August at the end of Prowler Week '94: **VAdm. John Perry Award**, Capt. Tom Dolan; **Adm. Arthur Radford Award**, VAQ-138; **Prowler Tactical Excellence Squadron of the Year**, VAQ-130; **Electronic Combat Competition Award**, VAQ-131; **Pilot and ECMO Instructor of the Year**, Capt. Joel Strieter, USMC and LCdr. William Reavey; **Maintenance Officer of the Year**, Lt. Tim Hooyer; **Prowler Maintenance Squadron of the Year**, VAQ-129; **Fleet Replacement Pilots of the Year**, Lts. Mike Halsey and Mark Troyer; and **Fleet Replacement ECMO of the Year**, Ltjg. Joe Gadwill.

Maintenance Personnel Awards: **Chief Petty Officer of the Year**, ADCS(AW) Larry O. Hanson; **Administration**, AZ1(AW) Edward L. Jensen and AZ2 Karen L. Robson; **Corrosion Control**, AMS1(AW) Gary C. Wandell; **Maintenance Instructor**, AE1(AW) William K. Fields; **Avionics/Armament**, AT1(AW) Scott J. Kubale; **Line/Troubleshooter**, AMS1(AW) Todd C. Robison; **Aircraft**, AMS1(AW) Robert D. Glass; and **Safety/Quality Assurance**, AD1(AW) Michael L. Mason.

Administration Personnel Awards: **Administration**, YN2(AW) Mark A. Purnell and **Career Counselor**, PN1(AW) Robert D. Brown.

Intelligence Award, CTT1(AW/NAC) Neil M. Wasserman. **FOD Excellence Award**, VAQ-134. **Seadog Fodor Memorial Award**, Lt. Chris Monroe. **ALQ-99 Excellence Award**, Bud White of Reflectone.

Lt. John Malsbury, Naval Postgraduate School, was awarded the **Rothschild Maintenance/Logistics Manager** award by Strike Fighter Wing and the Association of Naval Aviation. During the majority of the competition year, Lt. Malsbury was assigned to the NAS Lemoore, Calif., Aircraft Intermediate Maintenance Department.

VA-85 was recognized 27 August as the Atlantic Fleet's **1994 Intruder Derby Champion** bombing winner.

HS-1 was presented a **Meritorius Unit Commendation** 3 June by VAdm. R. C. Allen, COMNAVAIRLANT.

VFA-25 won the **1993 Arleigh Burke Trophy**, which recognizes the ship, submarine or aircraft unit that achieves the greatest improvement in combat readiness in the Pacific Fleet.

VS-29 was awarded the **1993 Captain Arnold J. Isbell Trophy** for excellence in antisubmarine warfare.

The **CNO Bronze Hammer Award** for best shore establishment improvements through local self-help went to NAS Meridian, Miss.

Correction

The new hangar under construction at NAS/JTB New Orleans, La., is being built for the *Revelers* of VR-54. The wrong squadron was listed on p. 44 of *NANews*, Sep-Oct 94.

AE2 Randall Smith, VP-47, was awarded the **Navy Commendation Medal** for heroism when he and AO1 Shawn Norton, formerly of VP-47, rescued a neighbor as she was being attacked in her residence by a man with a knife.

The **Air Medal** was presented to Maj. Mike A. Santacroce, VMA-214, for saving his AV-8B *Harrier* when its engine experienced a "rollback" shortly after takeoff 20 September 1993.

AW2 Robert McNair, VP-8, was awarded the **Navy Achievement Medal** for aiding a car accident victim in Texas in July.

MAG-42 and Marine Aviation Training Support Group, NAS Cecil Field, Fla., recognized Sgt. Edward K. Fulcher and Sgt. Dirk D. Kuntz as **Marines of the Year**.

Lts. Ronald L. Pawlo and Patrick B. Metz were honored with the Order of Daedalians' **San Diego Flight 13 Distinguished Airmanship** award for saving their F-14D after it suffered an engine stall during catapult launch from *Carl Vinson* (CVN 70).

VFA-146 won the **1993 Captain Michael J. Estocin** award as the best strike fighter squadron in the Navy.

Cdr. Richard B. Grahlman, CO, HS-14, received the **John Paul Jones Award** for inspirational leadership from the Navy League 5 August.

VAQ-139 received the **CVW-14 Top Hook Award** for Exercise WestPac '94.

AG1(SW) Jim Clontz was selected as **1993 Sailor of the Year** for *Dwight D. Eisenhower* (CVN 69).

VP-16's AO1 Jesse Davis was awarded the **Navy Achievement Medal** for saving a neighbor who was lying unconscious on the bottom of his swimming pool 11 July. Davis pulled the man from the water and performed unassisted CPR until paramedics arrived and took over.

VFA-204 was rated **Best in Air Wing** after their command inspection held in July by Reserve Carrier Air Wing 20.

LCdr. Rick Crange of VF-102 was named **RIO of the Year** at 1994's Fighter Fling.

NADEP Jacksonville, Fla., received the **1994 Governor's Business Leadership Award** 20 September. This marked the first federal government business to receive the Florida award. The award was given for outstanding achievement in boosting Florida's economy and quality of life and for making strides in employment expansion, recycling, drug-free workplace programs and quality improvement programs.

Sacramento (AOE 1) and HC-11 Det 8 were the winners of the **CNO Ship-Helicopter Safety Award** in the category of logistics. Runners-up were *Savannah* (AOR 4) and HC-8 Det 4.

Records

Several units marked **safe flying time:**

Unit	Hours	Years
HC-3	130,000	20
HMM-365 (Rein)	25,000	5
HSL-42		8
HSL-46	8,542	5
HSL-84	35,000	15
PATWING 11	1,000,000	31
SOES Cherry Point	147,670	30
VA-52	30,000	7
VAQ-132	40,773	24
VAW-116	38,000	18
VF-301	71,322	24
VFA-204	50,000	
VMFA-251	50,000	8
VMFAT-101	60,000	3.5
VP-5	85,000	15
VP-16	198,000	29
VP-24	166,000	26
VP-45	162,000	25
VR-59	63,000	
VS-31	98,500	25

HMM-365 celebrates 25,000 mishap free hours.

Anniversaries

Guadalcanal (LPH 7)	**31 years**
HMH-463	**50 years**
HMM-262	**43 years**
HSL-48	**5 years**
NAWC	**50 years**
VA-35	**60 years**

VMA-231 celebrated **75 years** and claimed the title as the Marine Corps' oldest squadron.

VMFA-321	**50 years**
Nassau (LHA 4)	**15 years**

Special Records

Cdr. Kenneth Parks, CO, VAQ-139, logged his 1,000th trap 30 March, aboard

Cdr. Parks' 1,000th trap.

Cdr. Noble's 1,000th trap.

Carl Vinson (CVN 70), while **Cdr. Richard Noble**, CO, VA-196, logged his 1,000th trap 24 June, aboard the carrier.

VA-196's **Cdr. Joe Killkenny** and **LCdrs. Walt Bankowski, Gary Poe, Paul Webb, John Alexander and Eamon Storrs** all surpassed 2,000 A-6 hours. Logging 1,000 A-6 hours were: **LCdrs. Paul Schmidt, Robert Papadakis and Brad Leppla**; and **Lts. John Burgek, Mark Herath, Jeff Bay and Rick Labranche**.

VAQ-140 CO **Cdr. T. C. Bennett** logged his 1,000th carrier landing 4

August, aboard *George Washington* (CVN 73).

AW1 Patrick Dailey, HSL-48, completed 3,000 flight hours.

VMA-211 CO **Lt. Col. Billy Williams** logged his 3,000th AV-8 V/STOL hour.

VMFA-101 CO **Col. Ronald W. Richards** recorded his 4,000th career flight hour.

HT-18's **Maj. Gary W. Fife** surpassed 6,000 career flight hours.

LCdr. Larry Coy, VF-143, logged his 500th trap and his 3,000th F-14 flight hour while deployed aboard *George Washington* (CVN 73).

LCdr. Larry Coy

AWC Dave Weiner of HS-10 surpassed 5,000 career helicopter flight hours.

Cdr. Kevin McNamara, CO, VF-154, made his 1,000th trap while aboard *Independence* (CV 62).

HMLA-269 CO **Lt. Col. R. E. St. Pierre** achieved 3,000 career flight hours. Also from HMLA-269, **Capts. C. R. Zelez, S. C. Mykleby and W. R. Dunn** surpassed 2,000 hours.

HS-1's CO, **Capt. J. J. Waickwicz**, surpassed 4,000 career flight hours.

Rescues

An SH-60B from **HSL-42** rescued two teenagers in a four-foot rubber raft several miles off the Florida coast near NS Mayport on the evening of 21 July. The teens were adrift without personal flotation equipment.

An **HS-6** *Seahawk* aboard *Abraham Lincoln* (CVN 72) made a dramatic night rescue of two *Lincoln* sailors. An airman was blown over the side by an E-2C *Hawkeye* turning up its propellers. After witnessing this, another sailor jumped over the side to save him. The helicopter crew launched immediately and, fighting pitch blackness and 10-foot seas, located the two men and lowered their rescue crewman into the water to save the victims. Both sailors were quickly returned to the ship. The sailor blown overboard sustained a concussion and lacerations but the second sailor was uninjured.

On 31 July, three squadrons and *Abraham Lincoln* teamed up to rescue a sixteen-year-old girl who had fallen 90 feet from the mast of a sailboat to its deck and sustained life-threatening injuries. **HS-6** and **VS-33** launched SH-60F and S-3B aircraft, respectively, to locate and effect the rescue and **HS-14** launched a helicopter from Astoria, Oreg., to *Lincoln* to transport the patient to a hospital. After VS-33 located the boat, HS-6's helicopter crew conducted an involved and dangerous rescue and flew the girl to *Lincoln* where she was treated and stabilized. She was then flown by HS-14's aircraft to a hospital in Portland, Oreg.

NAS Lemoore's SAR (search and rescue) unit conducted three rescues within seven days on 27 August and 1–2 September. The first rescue assisted a rock climber with a back injury and partial paralysis sustained on a 13,000-foot ridge line in Sequoia National Park. The second involved rescuing a young girl with a broken ankle in Yosemite National Park, and the third helped a California Department of Corrections inmate, with broken ribs and a possible back injury, who was part of a team of forest firefighters.

During a port visit in Corfu, Greece, 13 August, ***Guam*** (LPH 9) sailors and Marines rescued eight British citizens whose boat capsized in rough seas. After spotting the people in the water, *Guam* personnel launched two boats into the rough seas to rescue the civilians. All were brought aboard, treated and then transferred to shore after the sea calmed.

An **HS-8** aircraft made a night rescue of a man overboard from *Carl Vinson* (CVN 70) in the Arabian Gulf. The sailor was returned to the carrier flight deck uninjured within minutes.

An HH-46 from **HC-6 Det 5** rescued two crewmen from a civilian vessel approximately 30 miles off the coast of Morehead City, N.C., 15 August. The two were taken to *Inchon* (LPH 12) for treatment and then flown to the hospital at Camp Lejeune, N.C.

Three sailors from ***Guam*** (LPH) saved a Nigerian soldier's life 14 July while on liberty in Mombasa, Kenya. FC3s Raymond W. Sandage and Michael L. Helton with AN Robert G. Strickland, Jr., were relaxing at a resort when summoned to the pool. There, they found a man lying unconscious on the bottom of the pool. They pulled him from the water and administered assisted CPR for over 15 minutes. The man became stabilized after several more minutes and was transported to a hospital for treatment.

Scan Pattern

On 23 August, the last six **T-2** *Buckeyes* departed NAS Kingsville, Texas, en route to NAS Meridian, Miss. The trainer aircraft had been flying at Kingsville since 1960, but all T-2 operations will now be conducted at Meridian and NAS Pensacola, Fla. In conjunction with this consolidation, **VT-23** moved to NAS Meridian.

Lts. Carey Lohrenz and Kara Hultgreen, **VF-213**, became the first female pilots permanently assigned to an operational F-14 squadron.

The **Defense Technical Information Center** (DTIC) provides scientific, technical and engineering information services to U.S. government agencies, their contractors, subcontractors and potential contractors. It provides a collection of products and services from easy-to-use online systems to print and nonprint products for virtually every organization. It is the central point within the Department of Defense for acquiring, storing, retrieving and distributing scientific, technical and engineering information. For details about DTIC's services, contact the Product Management Branch, 703-274-6434, DSN 284-6434, or write to the Defense Technical Information Center, DTIC-BCP, Building 5, Cameron Station, Alexandria, VA 22304-6145.

U.S. Naval Test Pilot School, NAS Patuxent River, Md., and Russia exchanged aviator and engineer visits this past summer. First, the Test Pilot School group visited Zhukovsky, Russia, and flew in the MiG-29, MiG-25 and TU-134. Then, in August, the Russians came to Patuxent River and flew in F/A-18 and T-38 aircraft. The Russians were also interested in American business and lifestyle. The visits were made possible by funds from Nunn-Lugar technical exchange legislation.

NADEP Jacksonville, Fla., received

its first EA-6B *Prowler* for induction into Standard Depot Level Maintenance 13 July. The process will begin in October and will involve complete aircraft disassembly and rework of the components, restoring the airframe to like-new condition, reinstalling components, complete refurbishment and repainting. It will take about 20,000 man-hours. The NADEP is funded to process eight aircraft during FY 1995.

A rollout ceremony was conducted 29 September at **NADEP Cherry Point, N.C.**, marking the completion of the first H-53 helicopter to undergo Standard Depot Level Maintenance there. The aircraft was inducted 11 January and was the first of four H-53 aircraft scheduled by the depot during FY 1994. The Air Force has also committed to transition their MH-53J and TH-53A rework programs from Pensacola, Fla., to Cherry Point.

The Chief of Naval Education and Training and the Escambia County, Fla., School District launched a new educational program called **STARBASE-ATLANTIS** 13 September. NAS Pensacola commands participating are: Naval Aviation Schools Command, Naval Aerospace and Operational Medical Institute, National Museum of Naval Aviation and the Navy Flight Demonstration Squadron, *Blue Angels*. The program curriculum is designed to get Pensacola-area children "turned on" to math and science and motivated to set and achieve positive goals through the activities and classes conducted by the Navy. Topics will include astronomy, aerodynamics, model rocketry and computer flight simulation. Over the course of the school year, 25 fifth grade classes and their teachers or about 1,000 students will attend classes at NAS Pensacola one day per week over a five-week period.

On 26 July, **VQ-1** retired the oldest active P-3 aircraft in the fleet (BuNo 148887). Beginning its career 26 November 1962, the aircraft was the fifth P-3A built by Lockheed and has logged over 5,000 landings and 25,000 flight hours.

Alex Trebek of the TV game show "Jeopardy" visited **NAS Sigonella**, Sicily, 18 and 19 June in the show's search for contestants. Trebek's support team administered a written test to many hopeful contestants on the first day of the visit. Two out of 200 passed the test, but they must await an invitation to be a guest on the show. Trebek toured some of the squadrons based at Sigonella on the second day of the visit.

All active duty and reserve members are eligible for the new **Military Outstanding Volunteer Service Medal**, which honors those who perform exceptional community service work or support. The volunteer work must be performed over several years and produce tangible results, such as manning a crisis hot line, serving as a Scout leader or with the Big Brother/Big Sister program. Service members can be recommended by anyone senior to them and must submit an OPNAV 1650/3 via their commanding officer.

The ***Blue Angels*** have several new officers. LCdr. Andrew Nelson, M.D., left NAS Lemoore, Calif., and joined the Navy Flight Demonstration Squadron in September as their flight surgeon. Lts. Mark Provo and Ryan Scholl left VFA-106 and VFA-105, respectively, at NAS Cecil Field, Fla., and reported to the *Blues* in October. Lt. Tom Munson, VF-124, is the new events coordinator, and Marine Capt. Stuart Smith, VMGR-352, will be the replacement C-130 *Hercules* pilot.

Active duty **Aviation Ordnancemen** (AOs) lost their flight status. On 30 September, all AOs began working on the ground rather than as part of P-3 flight crews. Reservists received a one-year extension.

The **last Marine A-4 squadron** was disestablished and for the first time in many years, Marine Aviation will not have any *Skyhawks*. **VMA-131** ceased operations in August and transferred all A-4s to Davis-Monthan AFB, Ariz. The squadron flew the aircraft for 32 years.

Change of Command

CGAS Barbers Point: Capt. F. Sutter Fox relieved Capt. David S. Belz, 7 Jul.

CGAS New Orleans: Cdr. Dana Gowand relieved Cdr. Skip L. Gingrich, 29 Jun.

CVW-2: Capt. David C. Nichols relieved Capt. Daniel J. Hacker, 13 Jul.

CVW-5: Capt. Brian M. Calhoun relieved Capt. Kenneth F. Heimgartner, 13 Jul.

CVW-15: Capt. Stanford H. Hlavka relieved Capt. Michael J. McCamish, 17 Jun.

Dubuque (LPD 15): Capt. Kenneth E. Golden relieved Capt. Ronald L. Christenson in April.

1ST LAAM BN: Lt. Col. V. M. Dubois relieved Lt. Col. D. A. Richardson, 1 Sep.

FLELOGSUPPWING: Capt. Michael B. Bryant relieved Capt. Mike King.

Guam (LPH 9): Capt. David Architzel relieved Capt. Thomas D. Barnes in July.

HC-8: Cdr. Dennis DuBard relieved Cdr. Daniel Struble in July.

HM-14: Cdr. Kurt D. Grabow relieved Cdr. Daniel N. Hartwell, 23 Sep.

HM-15: Cdr. William E. Shannon relieved Cdr. Thomas B. Davilli, 9 Sep.

HMM-163: Lt. Col. Andrew P. Frick relieved Lt. Col. William Catto, 5 Aug.

HS-2: Cdr. Thomas L. Walston relieved Cdr. Carl D. Robertson, 26 Aug.

HS-6: Cdr. Michael F. Wanjon relieved Cdr. James A. McDonell, 8 Sep.

HS-14: Cdr. John G. Steele relieved Cdr. Richard B. Grahlman, 15 Jul.

HSLWINGLANT: Capt. Augustus W. Clark III relieved Capt. William C. Turville, Jr., 21 Jul.

HSL-40: Cdr. Joseph E. Belinski relieved Capt. Frederic R. Ruehe, 21 Jul.

HSL-44: Cdr. Michael H. Orfini relieved Cdr. Kenneth D. Beeks, 8 Sep.

HSL-48: Cdr. Andrew R. MacConnell relieved Cdr. Keith S. Laser, 25 Jul.

ICEDEFFOR: RAdm. Stanley W. Bryant relieved RAdm. Michael D. Haskins.

MAG-11: Col. William G. Bowden relieved Col. George C. Tullow, 20 Jul.

MAG-12: Col. Jon A. Gallinetti relieved Col. Dennis T. Krupp, 8 Jul.

MAG-13: Col. Ross J. Hieb relieved Col. John Bioty, Jr., 27 Jun.

MAG-36: Col. James P. Hopkins relieved Col. William C. Peoples, 5 Aug.

MASS-1: Lt. Col. John Jagielski relieved Lt. Col. Paul Hill, 4 Aug.

MATSG Meridian: Maj. Edwin L. Koehler, Jr., relieved Lt. Col. Phillip Newman, 29 Jul.

MATSG Whidbey Island: Col. Robert S. Nasby relieved Col. Paul E. Hanover, 5 Aug.

MATSS-901: Maj. Nicholas J. Smith relieved Maj. Richard A. Dorn.

MAWSPAC: Cdr. Dave Flagg relieved Cdr. Jerry McWithey, 16 Jun.

NAF Atsugi: Capt. Phillip H. Mills relieved Capt. John W. Curtin, Sr., 4 Aug.

NAMI: Capt. Jerry C. Patee relieved Capt. Alfred J. Mateczun, 11 Aug.

NAS Barbers Point: Capt. Edward C. Waller relieved Capt. Timothy A. Rocklein, 1 Sep.

NAS Brunswick: Capt. David J. Nelson relieved Capt. Robert L. Rachor, 12 Aug.

NAS Keflavik: Capt. W. Robert Blake relieved Capt. C. Thomas Butler.

NAS Lemoore: Capt. G. C. Woodridge relieved Capt. A. R. Gorthy, Jr., 12 Aug.

NAS Norfolk: Capt. Daniel J. Franken relieved Capt. Eddie L. Duckworth, 14 Oct.

NAS Pensacola: Capt. Timothy Thompson relieved Capt. William T. R. Bogle, 27 Jul.

NAVAIRRES Whidbey Island: Capt. Michael E. Schum relieved Capt. Thomas L. Bush, 2 Sep.

NAWC: RAdm. William E. Newman relieved RAdm. George H. Strohsahl, 8 Jul.

NROTCU Jacksonville U.: Capt. R. L. Johnson relieved Capt. R. J. Burns.

NROTCU U. of Wisc.: Capt. John W. Peterson relieved Capt. Richard G. Fenn.

NS Mayport: Capt. Scott Cantfil relieved Capt. R. Timothy Ziemer, 29 Jul.

PACFLT: Adm. Ronald Z. Zlatoper relieved Adm. Robert J. Kelly in August.

PACFLTFITWING: Capt. Mark P. Grisson relieved Capt. Daniel M. Chopp, 15 Jul.

Safety Center: RAdm. Joseph S. Mobley relieved RAdm. Andrew A. Granuzzo, 7 Sep.

Saipan (LHA 2): Capt. Ralph Zia relieved Capt. George Rhodes in July.

STRIKEFITWINGLANT: Capt. John L. Fleming relieved Capt. Kenneth C. Cech, 23 Sep.

SWATSLANT: Cdr. Timothy D. LaBelle relieved Cdr. David J. Mercer, 15 Sep.

Theodore Roosevelt (CVN 71): Capt. Ron Christenson relieved Capt. Stanley Bryant, 15 Jul.

VA-115: Cdr. D. Alan Kuntz relieved Cdr. Richard O. McHarg, 1 Sep.

VA-196: Cdr. Joe Kilkenny relieved Cdr. Rick Noble, 26 Aug.

VAQ-130: Cdr. Randy Rice relieved Cdr. Jim Coulson, 1 Sep.

VAQ-140: Cdr. Robert K. Crumplar relieved Cdr. Thomas C. Bennett, 1 Sep.

VAQ-141: Cdr. Brian E. Bennett relieved Cdr. John P. Cryer, 11 Aug.

VAW-113: Cdr. Myles E. Roeling relieved Cdr. Tom C. Trudell, 16 Sep.

VAW-116: Cdr. Stephen B. Sale relieved Cdr. Michael R. Wertz, 18 Aug.

VC-8: Cdr. Bernd A. Foerster relieved Cdr. Randal C. Sweeney, 31 Aug.

VF-24: Cdr. Jason A. Leaver relieved Cdr. Robert E. Adamson.

VF-143: Cdr. Peter J. Williams relieved Cdr. Thomas B. Hill, 19 Aug.

VFA-113: Cdr. Garry R. White relieved Cdr. Mark T. Emerson, 25 Aug.

VFA-136: Cdr. John Leenhouts relieved Cdr. Carl Braun, 17 Jul.

VFA-195: Cdr. David Martin relieved Cdr. Perry Maxwell, 2 Sep.

VFA-204: Cdr. Gerard A. Mumfrey II relieved Cdr. John G. Cotton, 10 Sep.

VMFA-122: Lt. Col. Wesley Jarmulowicz relieved Lt. Col. Jason Britt, 9 Sep.

VMFA(AW)-225: Lt. Col. J. C. Rader relieved Lt. Col. J. Bruce Hulick, 8 Jul.

VMFT-401: Lt. Col. Steven W. Rawson relieved Lt. Col. Jerry P. Breen III, 22 Jul.

VP-1: Cdr. Woody T. Shortt relieved Cdr. Mark E. Wisniewski, 6 Jul.

VP-11: Cdr. Paul J. C. Hulley relieved Cdr. Anthony L. Winns, 29 Jul.

VP-17: Cdr. Robert J. Quinn relieved Cdr. George G. Brown, Jr.

VP-62: Cdr. George F. Poelker relieved Cdr. Barry A. LaVigne.

VP-94: Cdr. Thomas H. Hutchinson relieved Cdr. Michael D. Rouen, 16 Jul.

VQ-3: Cdr. Christopher P. Schnedar relieved Cdr. Michael J. McDermott.

VR-52: Cdr. John M. Thompson relieved Cdr. Richard C. Wiedenhaefer, 1 Oct.

VR-59: Cdr. Stephen V. Roth relieved Cdr. G. W. Knell, 13 Aug.

VS-22: Cdr. Les Pontes relieved Cdr. Robert E. Snyder, 2 Sep.

VS-31: Cdr. Jansen Buckner relieved Cdr. Joseph J. Paulis III, 26 Jul.

VS-43: Cdr. Richard V. Kikla relieved Cdr. Thomas M. Cirillo, 1 Sep.

VT-4: Cdr. Gerald E. Vandam relieved Cdr. Frederick C. Cook, 30 Sep.

VT-6: Cdr. Allan R. Topp relieved Cdr. Joe B. Gheesling, 15 Jul.

VT-7: Cdr. D. A. Burdine relieved Cdr. T. P. Quinn, 2 Sep.

VT-22: Cdr. Calvin J. Felte relieved Cdr. Joseph J. Spurr IV, 30 Sep.

VT-23: Cdr. Patrick A. Jacobs relieved Cdr. Christopher D. Quinn, 7 Jul.

VT-86: Lt. Col. David L. Barraclough relieved Cdr. Scott T. Thomas, 31 Aug.

VTC-11: Cdr. Leo F. Murphy relieved Cdr. William M. Lipsmeyer.

ANA Bimonthly Photo Competition

Right: Ted Carlson photographed three VF-41 *Black Aces* as they lined up after refueling over Colorado on their way to a CVW-8 deployment at NAS Fallon. Below: PH1(SW) Bob Lindel took this photo of ABE3 Manuel Marrero and ABEAN Brett Lewis peering out the access to the number three steam catapult water brake on George Washington (CVN 73) after spending all night working on it.

The Association of Naval Aviation and its magazine, *Wings of Gold*, is continuing its annual photo contest which began in 1989. Everyone is eligible except the staffs of *Wings of Gold* and *Naval Aviation News*. The ONLY requirement is that the subject matter pertain to Naval Aviation. Submissions can be in black and white or color, slides or prints of any dimension. Please include the photographer's complete name and address, and **PHOTO CAPTION.**

Cash Awards: Bimonthly - $100; Annual - First, $500; Second, $350; Third, $250.

For deadline and submission details, call (703) 998-7733. Mail photographs to: Association of Naval Aviation Photo Contest, 5205 Leesburg Pike, Suite 200, Falls Church, VA 22041-3863.

Cdr. Peter Mersky, USNR (Ret.)

Dorr, Robert. *US Coast Guard Aviation.* Motorbooks International, Box 2, Osceola, WI 54020. 1992. 128 pp. $19.95.

There has been a small, but steady trickle of books about Coast Guard history and operations in recent years. The Gulf War also gave more coverage to Coast Guard activities, both surface and air.

Robert Dorr's latest effort is a medium-format picture book, a showcase for good color photography of colorful aircraft whose mission seldom receives the media exposure that other services do. Because of the generally red-and-white markings of USCG aircraft, the photos are bright, even in a night or cloudy setting.

Beginning with the lengthy, but well-written introduction, the author's affinity for Coast Guard aviation is clear. He obviously enjoyed visiting several bases and experiencing some of the crews' missions. The narratives would have sounded a little more professional, however, if he had not occasionally inserted a complaint of how ill-fitting and uncomfortable his borrowed flight gear was or pointed out such things as the hotel he stayed in while visiting a particular base.

That one small nit aside, this is a good book, and should be considered for its photos and resume of this service's aircraft, past and present.

Phillips, William S., and Edwards Park. *The Art of William S. Phillips: the Glory of Flight.* The Greenwich Workshop Press, Inc., 1 Greenwich Place, Shelton, CT 06484. 1994. 172 pp. Ill. $60.

Strictly a publicity showcase for the artist's admittedly admirable talent, this book features some of the best modern aviation art by one of the period's most well-known artists. The text, by a one-time fighter pilot (he flew the colorful Bell P-39 in the Pacific—no mean accomplishment in itself), occasionally struggles to set the scene. Case in point, on p. 18, "Dauntless planes and dauntless men," or on p. 68, "a long swale of pasturage." Really? The writer's language is a bit too saccharine for my taste.

There are also occasional mistakes in basic historical knowledge, such as calling Midway the first naval engagement fought entirely by aircraft (p. 18). Actually, this milestone occurred a month earlier, in May 1942, at the Battle of Coral Sea.

It was Lieutenant Colonel Harold Bauer who said, "When you see *Zeros*, dogfight 'em!" not Joe Foss (pp. 98–99). And, Marion Carl was "blooded" at Midway, with a single kill over a *Zero*, not Guadalcanal (p. 103).

The subjects of the paintings run the gamut of aviation history, from WWs I and II, to Korea and Vietnam, and the Persian Gulf. Naval Aviation is well served—plenty of F-4s and F-14s here—and is well displayed in war and peace. Civilian aviation is also represented.

There are several outstanding illustrations in this collection. One of my favorites shows the launch of an X-15 from a B-52, accompanied by an F-104 chase plane. This painting's rather odd, but its highly successful perspective and vantage point really give an impression of being in the air with the subject aircraft.

Bill Phillips is, first and foremost, a landscapist (branching out into skyscapes, as well), harkening back to early 19th century English artists of the genre. He also enjoys using brilliant, but closely valued colors, especially in striking, fiery skies, or with stage-setting sunsets. His image of the *Enola Gay*, the B-29 that dropped the first atom bomb on Hiroshima on 6 August 1945, is an unusual, disturbing impression of that important point in the war—and in history.

Phillips' style is clean, painterly and ultimately exhibits a basic love of his subject. The amount of published work included in this book is amazing. Obviously, this book is a browser's delight. Budding young artists might also look at it as a learning tool.

Lundstrom, John B. *The First Team and the Guadalcanal Campaign: Naval Fighter Combat from August to November 1942.* Naval Institute Press, 118 Maryland Ave., Annapolis, MD 21402-5035. 1994. 627 pp. Ill. $44.95.

Continuing the saga of early Pacific war action begun by the first volume, which covered from Pearl Harbor through Midway, this new book maintains the high level of historical research and reporting. However, it does take some reader dedication to complete due to the tremendous amount of detail.

The book's photographs are poorly reproduced and presented. Details, including aircraft markings which are pointedly described in captions, are often lost because the halftone is too soft or the photo is badly cropped. A prime example appears on page 395, where the caption brings attention to the "Death of a Samurai" and remarks on the striking bands on the vertical tail of a Japanese "Kate" torpedo bomber. I literally needed a magnifying glass to see these important markings.

However, the sheer scholarly presentation *is* admirable. Lundstrom dived right into heretofore unknown—except in accounts published in Japan—records of the Imperial Navy squadrons that fought so hard to dislodge the American invaders, leaving the cream of their fighter and bomber squadrons scattered on the Solomons' shores and sea bottoms.

The author scrupulously uncovers the names and combat records of the men in the *Zeros* and "Betty"s, placing them in the same piece of sky as well-known American aviators like Smith, Carl, Galer, Bauer and Flatley, making the accounts of aerial combat more personal.

Lundstrom describes daily life on the 'Canal and personalities during the campaign. His dissection of the Japanese orders of battle is also masterful and adds much to existing historical material on the Solomons action. Sorting out the changes of command, particularly within the U.S. Navy, at this critical point of the war requires a thoroughness and understanding that only someone like John Lundstrom can bring. His description of the pivotal Battle of Santa Cruz on October 26, 1942, is probably the most detailed popular account of this major engagement.

Two *NANews* Staffers Depart

In August, **JOCS(AW) Theresa L. Dunn** retired after 23 years of naval service. During her career, she served with almost every community in the Navy—from aviation to surface to submarine, from communications to recruiting to duty with the Seabees, as well as on a joint staff at an Army post. While Associate Editor of *Naval Aviation News*, she contributed her journalistic expertise to the magazine, as well as serving as Senior Enlisted Advisor of the Naval Historical Center, where she provided invaluable leadership and guidance to the enlisted troops and developed the Command Assesment Team. At her retirement ceremony, she concluded with this thought: "In the Bible, Paul wrote, 'I have fought the good fight, I have finished the race, I have kept the faith.' Today, I feel like I have fought a good fight, I have finished the race, and although hard at times, I have kept the faith." Best wishes in your future "career," Senior Chief Dunn.

When **JO1(SW) Eric S. Sesit** leaves *NANews* in November, he heads toward a much warmer climate—in Diego Garcia—and a job with the Navy Broadcasting Service Detachment. During his three and one-half years on the magazine staff, Eric distinguished himself as a true professional with superb writing and editing skills. Besides serving as Assistant Editor, on his own initiative, he developed and wrote a complete 16-article series on aviation enlisted ratings, while also acting as the primary typesetter for the magazine and books of the Naval Historical Center. As career counselor and command photographer, he exhibited outstanding leadership skills and photographic expertise. Managing Editor Sandy Russell said, "His tremendous contributions to the staff are much appreciated and will be greatly missed. I can always count on Eric to complete the job, no matter what I ask him to do." Good luck, Eric. Stay cool!

Kamikaze

Your continuing accounts of WW II are written with great expertise and information. The July–August 1994 issue dealing with the kamikaze menace in the Philippine and Okinawa campaigns brought back vivid memories. The destroyers, destroyer escorts and lesser-sized vessels assigned to picket stations around Okinawa bore the full brunt of the suicide attacks. The carrier battle groups and Kerama Retto anchorage came under attack many times, resulting in heavy casualties. But the picket ships were in reality the first line of defense against the suicide attacks of the 15 picket stations around Okinawa; few ships came through unscathed or sunk.

On the morning of 27 May 1945, one of our VH-3 crews (led by Lt. Maynard W. Kouns) picked up 10 survivors from *Braine* (DD 630) 50 miles east of Okinawa, after the destroyer was crashed by two suicides and 159 officers and men lost their lives in the harrowing 30-second attack.

VPBs 18, 21 and 27 arrived at the Kerama Retto island ring three days prior to the Okinawa invasion and kept the enemy surface and submarine vessels bottled up within their home waters. VH-3, flying six unarmed PBM-3Rs, also arrived the same morning, 29 March 1945, and was assigned the air-sea rescue until 24 June when VH-1 came on station.

The picket ships deserve a well done from all hands who served there in 1944–1945. Their courage and devotion undoubtedly saved many other ships and lives. Today's Navy still maintains the highest degree of devotion to this great nation.

Lee Roy Way
2800 Roberts Circle
Arlington, TX 76010-2419

In Memoriam

The staff of *Naval Aviation News* recently learned about the passing of former Managing Editor Helen F. Collins, who was killed in an automobile accident earlier this year.

In January 1985, Helen retired from the magazine staff after 15 years. She became an institution, contributing her superior writing and editorial skills to the pages of *NANews* and fondly guarding the finished product with a critical eye. Besides a fervent interest in maintaining the quality of the magazine, her relationship with the staff was one of deep affection. Upon retirement, she stated, "Not everyone can say they enjoy what they do, but I have loved it . . . . Because *NANews* has a small staff, we are like a family. I will miss that family very much."

Helen was an exceptional person who lived her convictions and fought for what she believed was right. The *Naval Aviation News* and Aviation History Branch staffs feel the loss of a treasured friend. Our "family" is sadly diminished by her absence.

She is survived by her husband, George; son, Gary; daughter, Gabby; and grandchildren.

Correction

Sep–Oct 94, p. 31: Carol Livanis, PMA-2482C, Naval Air Systems Command, wrote "Laser Evaluator System-Mobile (LES-M)" vice Lt. Chuck Babcock.

Reunions, Conferences, etc.

VT-8/Bennington (CV 20) (1945) proposed reunion, POC: Gene Watts, POB 165, Union Star, MO 64494, 816-593-2309.

50th anniversary of kamikaze strike against Lexington, 5 NOV, Corpus Christi, TX. POC: Mary Holzhauer, POB 23076, Corpus Christi, TX 78403-3076, 512-888-4873.

VP-40 reunion, 9–13 NOV, San Diego, CA. POC: F. W. Humphries, 3746 Cameo Ct., San Diego, CA 92111-4038, 619-292-4974.

AVCADs/NAVCADs 1936–present reunion, 10–13 NOV, Pensacola, FL, 800-327-5002.

VA-23 reunion, 10–13 NOV, Pensacola, FL. POC: Chuck Wolf, 530 Heyward Circle, Marietta, GA 30064, 404-422-1752.

WW II Deland Naval Air Station Veterans reunion, 11–12 NOV, Deland, FL. POC: J. V. Hays, POB Drawer 449, Deland, FL 32721-0449, 904-736-3900, ext. 746.

VC-41 reunion, 11–12 NOV, Pensacola, FL. POC: James Williams, 1545 Gulf Shores Pkwy. #193, Gulf Shores, AL 36542, 205-948-4240.

Vietnam Veterans Memorial 10K Run & 5K Walk, 13 NOV, Washington, DC, 703-525-1107.

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