

# NAVAL AVIATION NEWS

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COVERS – Front, Capt. B. D. Rohdenburg, USMCR, Peterboro, N.H., shot this closeup of a Marine Corps A-4M Skyhawk refueling from an Air Force KC-10 tanker. The photo won the final 1989 bimonthly competition in the Association of Naval Aviation Photo Contest. Back, the newest carrier, Abraham Lincoln (CVN-72), sports the Lincoln penny as its insignia. (Photo by JO1 Jim Richeson)

**Publication Policy:**

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# Steady As She Goes

By VAdm. Dick Dunleavy, ACNO (Air Warfare)

One of the clearest messages from the news headlines, which seem more astonishing everyday, is that the Navy is sailing into the decade of the 1990s during a period abounding in uncertainty. The phenomenal changes under way throughout the Communist world and the necessity of coming to grips with our budget deficit here at home are creating turbulent seas through which we'll have to navigate. Just where those currents will take us remains to be seen, but they're sure to have a profound effect on the course of Naval Aviation.

In recent months we have witnessed the most dramatic political developments since the end of WW II, almost 45 years ago. The opening of borders which had been closed for decades, the Soviet admission of ABM treaty violations and aggression in Afghanistan, and the steps toward democracy in the Warsaw Pact countries have produced a highly charged atmosphere of optimism in our own country. It's too soon to tell if these positive developments will be irreversible, given the staggering economic, ethnic, and political problems facing the Soviet Union and its satellites, but the perception of less threat from the East will surely increase pressures on us to reduce force levels as we fight the deficit.

During the cold war, Naval Aviation has been indispensable in keeping the peace and maintaining stability. Momentous changes in the Warsaw Pact do not translate into a reduction in the importance of Naval Aviation. At the present time more than two dozen conflicts are in progress around the globe, many of which could directly affect the United States and our allies, and long gone are the days when Third World countries had no more than arrows and spears to hurl at us.

Many are armed with the most modern weapons available, including chemical and biological weapons. The proliferation of nuclear weapons makes the problem worse.

The need for carrier battle groups and the rest of Naval Aviation will thus remain. In all of the crises and brush wars in the world since 1945, carriers were brought to bear in two thirds of them. As Secretary of Defense Cheney recently told two sailors aboard *America*, "When I sit down ... with the president at the Oval Office and we've got to deal with the hostage crisis, literally the first thing he always says is 'How are we fixed for carriers?'"

As a major beneficiary of the build-up of the last decade, Naval Aviation

is in good shape. I've seen that firsthand in the fleet. I saw it in the pride and professionalism of the crew of *Abraham Lincoln* as she recently joined the fleet. We have been and still are on the right track.

There's no doubt that adjustments will be required. But they'll be refinements of a product which isn't broken. We'll need to scrutinize the way we operate and the types of planes and ships that we buy. Taking care of our people will stay at the top of our priority list. By holding our basic course, the result will be a better, leaner Naval Aviation.

Through these turbulent times, it's steady as she goes. Keep strokin'. ■



USS John F. Kennedy (CV-67) escorted by USS Curts (FFG-38).

## Fumin' Phantom

A pair of F-4N *Phantoms* executed a section takeoff from a West Coast air station and soon entered a thick overcast. Noting that his fighter-bomber's exhaust appeared to be whitish rather than the customary black, the radar intercept officer (RIO) in the second *Phantom* asked his pilot to check his gauges. (There is no fuel gauge in the rear cockpit of the F-4N). The pilot reported that all appeared normal. He added that he was very busy just trying to maintain visual contact with the lead aircraft as they climbed through the weather.

At 34,000 feet, the clouds began to thin and the pilot got a good look at his gauges. He noticed that half his fuel was gone and the *Phantom* had been airborne for only 10 minutes!

Assuming he had a serious fuel leak, the pilot immediately broke away for home base. Time being critical, the pilot and RIO knew that if they flew a bingo profile, they would run out of gas. So the pilot declared an emergency and hurried back to the point of departure at 450 knots. With the gauge virtually on empty, the *Phantom* touched down safely. The pilot cleared the runway and immediately shut down the aircraft, the entire bottom of which was covered with fuel. Fuel also flowed from each intake. The crash crew arrived and prevented a fire.

Investigation revealed that this squadron was to transition to F/A-18 *Hornets* in a few weeks and the maintenance troops got careless. The aircraft had a previous fuel gripe and the day crew had worked on it but didn't finish the job. The message in

*Remember St. Valentine's Day!*



the pass-down log to the night crew said, "Defueled and flamed out aircraft 03." But they didn't mention that they had popped the turtleback fixture and taken the probe out of the number 2 fuel cell. They had rested the probe back in the hole and tacked the turtleback on.

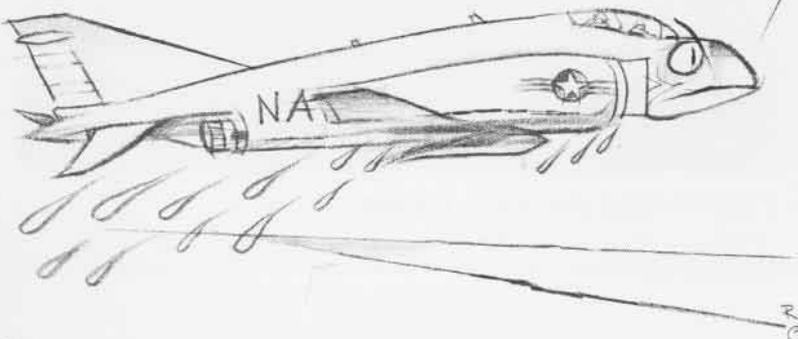
The night crew worked on the problem but didn't look under the turtleback. They just screwed it down without securing the probe.



**Grampaw Pettibone says:**

**Bet that Phantom crew breathed real deep when they got their bird**

*maybe THEY ought to be drilled with a plug or two!*



back onto the concrete. Bet they were real mad, too.

Ain't no excuse for this kind of carelessness – even if the squadron was givin' up one set of birds for another. What bothers me is if this outfit acted like this at the end of their *Phantom* "tour," what's to say it'll be any different at the beginnin' of *Hornet* time. Makes me shiver!

## What a Break!

The pilot was relatively new to the squadron. He and his crew were on a field carrier landing practice flight at an outlying field. They were fast approaching the field. The landing signal officer (LSO) had visual contact with the aircraft and cleared it to break at the numbers. Paddles transmitted, "Show me something in the break."

The pilot broke over the approach end of the runway and initially rolled into a 60 to 70-degree bank. The aircraft continued the turn, the roll increasing to nearly 120 degrees. Excessive rate of descent also developed. Paddles issued an altitude warning call. The aircraft was now in a 25-degree, nose-down attitude.

At approximately 400 feet above ground level, the crew ejected. But they were beyond limits for the aircraft's attitude and none survived.



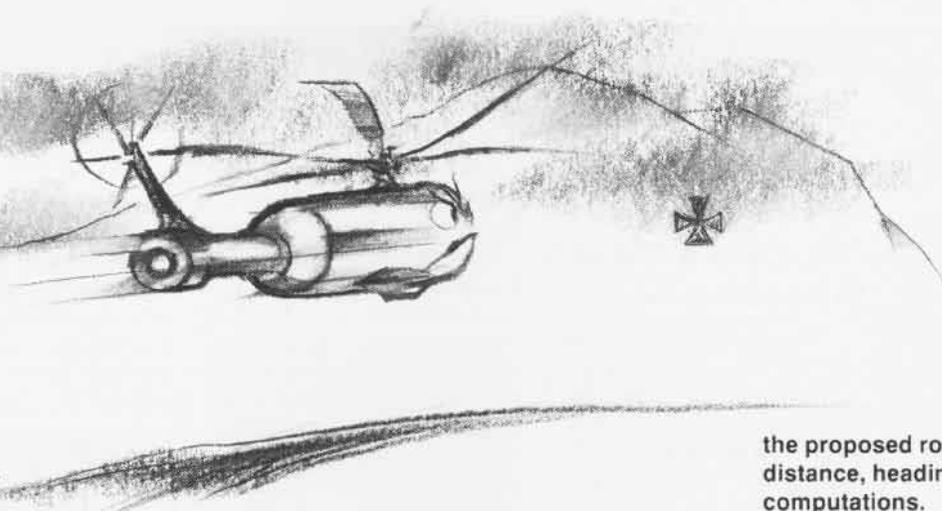
**Grampaw Pettibone says:**

This one's got nothin' to do with type aircraft or souls onboard. It's got to do with attitude and smarts. Poor and lacking in this case.

Apparently, at this particular stage of training, squadron LSOs liked to "instill a sense of confidence" in the pilots ... buck up their "stick and throttle" skills, so to speak.

Nothin' wrong with that. BUT ... how well did the pilot know departure procedures? And ejection envelope parameters? Why didn't the call to "recover" or "neutralize controls" come sooner. What's "show me somethin' in the break" mean?

6.



## Helo versus Hill

A CH-53D *Sea Stallion* launched from one overseas air station to overseas home base on a day VFR flight plan. Although the weather forecast met the minimums, there were clouds and reduced visibility along the route. Also, there were impending typhoon conditions some distance from their destination.

The day before takeoff, the pilot advised his squadron at home base that weather was expected to be clear enough for the trip. He added that on the day after the planned flight, a front was expected to move into the area. He received word indirectly that his C.O. said, "Good, tell him to launch if they have the weather."

The ceiling was 3,000 feet, visibility two miles at the departure point, and the helo was allowed to launch via a special VFR departure procedure. The helo launched and proceeded normally. Radar service was terminated when the CH-53 was a few miles south of the base.

The *Sea Stallion* climbed to about 1,000 feet and continued on course overwater. About 25 minutes later, a few seconds after crossing the shoreline of an isthmus and traveling at about 110 knots, the aircraft crashed into a hillside at a point approximately 800 feet above sea level. All seven personnel onboard were killed.



**Grampaw Pettibone says:**

**Terrible toll! Old man weather – with help from poor judgment – was the victor on this one. It was another easy win for him.**

**We don't know for sure what happened because there were no**

**witnesses, but evidence indicated that the copilot was at the controls when the *Sea Stallion* struck the ground. The copilot had been in the officers club until 2200 the night before, and an autopsy showed that he had enough alcohol in his system to impair motor and sensory functions. The helicopter aircraft commander had no alcohol in his system, but he knew the copilot had been drinking the night before.**

**Appears the crew used an operational navigation chart (ONC) in planning, which is normally OK since most of the flight was to be overwater. 'Cept an ONC doesn't have the contour detail of a larger scale map and, using an ONC for this particular region, it is possible to believe that the highest obstruction in the area was at 400 feet. An ONC – but no other VFR navigational maps – was found in the wreckage. It's also probably true that the pilots got themselves forced into IFR conditions but may not have been alarmed due to their flight altitude.**

**This aircraft and crew had been away from home base for three weeks and the squadron was soon to depart for their return to CONUS after six months. The crew coulda had a touch of "get-home-itis." The weather forecaster at the departure base indicated the crew displayed typical impatience with delays associated with poor weather conditions. There was also some question as to the thoroughness of the crew's overall planning for the flight. For example, no evidence was recovered of a jet log listing**

**the proposed route of flight, time, distance, headings, or fuel computations.**

**So, you pour these nuggets of information into a sack, shake 'em up, roll 'em out, and they spell "accident waitin' to happen."**

**And it did.**

## Osborn Exhibit Opens

On November 28, 1989, Vice Admiral R. M. Dunleavy, Assistant Chief of Naval Operations (Air Warfare), was guest speaker at the opening of the Navy Museum's exhibit which salutes Robert Osborn's contributions to the Navy through his art. Mr. Osborn's characters Grampaw Pettibone, Dilbert the Pilot, and Spoiler the Mechanic have been known in the Naval Aviation community for almost 47 years, first appearing on the pages of the *BuAer News Letter*, which later became *Naval Aviation News*.

Miss Izetta Winter Robb, who served on the *NA News* editorial staff for over 26 years and retired as managing editor in 1969, cut the ribbon, officially opening the display which will remain at the museum for six months.

In the photo, Miss Robb and Dr. Dean Allard, Director, Naval Historical Center, listen to VADM. Dunleavy chronicle Osborn's artwork.



Ed Frasher

## "Coral Maru" Returns Home for the Last Time

The "Ageless Warrior," *Coral Sea* (CV-43), returned from the Mediterranean to Norfolk, Va., on September 30, 1989, ending her last deployment with the fleet. Although not scheduled for decommissioning until April 1990, removal of salvageable stores and equipment began soon after arrival at home port. Final disposition of "Coral Maru," as she was affectionally known by her crew, has not yet been determined by the Navy.

*Coral Sea* was commissioned in October 1947 and saw action during the Vietnam conflict and in operations against Libya. *Naval Aviation News* will run an in-depth story on *Coral Sea* in an upcoming issue.

## USMC Phasing Out A-6E for F/A-18D

The Marine Corps has begun its phaseout of the Grumman A-6E *Intruder* all-weather attack aircraft, with VMA(AW)-121 being the first A-6 squadron to commence transition to the McDonnell Douglas F/A-18D *Hornet*.

The decision to transfer the Marine A-6s to the Navy is intended to alleviate a shortage of A-6s in the fleet caused by wing fatigue and the need to re-wing many of the aircraft. The Marine transition to the two-seat, all-weather F/A-18D will also accelerate reaching the goal of reducing the variety of different types of aircraft in the Marine Corps and thus reducing the as-

sociated operating and training costs.

The F/A-18D will assume the missions of four aircraft types presently in the Marine Corps inventory. The two-seat *Hornets* will not only replace the A-6E in the all-weather attack role, but will also replace the RF-4B *Phantom II* in the photoreconnaissance mission and the OA-4M and TA-4F *Skyhawk* in the forward air control and tactical air control missions.

One Marine A-6E squadron per fiscal year will transition to the F/A-18D and will be redesignated as Marine All-Weather Fighter Attack Squadrons (VMFA(AW)) upon transition. (See Table 1.) In addition to the five A-6E squadrons that will transition, a sixth squadron, VMFA(AW)-225, will stand up at MCAS El Toro, Calif., as the Marine RF-4B photoreconnaissance unit, VMFP-3, stands down. VMFA(AW)-225 will be a reactivation of a Marine A-6 squadron, VMA(AW)-225, that was deactivated on June 15, 1975.

The squadrons of Marine Aircraft Group (MAG) 11 at El Toro will all transition first while the A-6 units at MCAS Cherry Point, N.C., participate in the Unit Deployment Plan rotation to MCAS Iwakuni, Japan. When the MAG-11 units have all completed transition, their F/A-18Ds will assume the Iwakuni rotation as the MAG-14 squadrons at Cherry Point enter the transition cycle. VMFAT-101 at El Toro is the unit conducting the transitions.

The A-6 has served with the Marines since 1964, flying combat missions over Southeast Asia during the Vietnam war from bases at Da Nang and Chu Lai in South Vietnam and Nam Phong, Thailand. One unit, VMA(AW)-224, flew strikes from *Coral*

*Sea* in 1972 as part of Carrier Air Wing 15, as well as participating in the successful mining of Haiphong harbor. In recent years, Marine A-6 squadrons have deployed regularly aboard several carriers.

### USMC A-6E - F/A-18D Transition Plan

Table 1.

| *Unit                      | Transition Year |
|----------------------------|-----------------|
| <b>MAG-11 El Toro</b>      |                 |
| VMA(AW)-121                | FY 90           |
| VMA(AW)-242                | FY 91           |
| **VMFA(AW)-225             | FY 92           |
| <b>MAG-14 Cherry Point</b> |                 |
| VMA(AW)-224                | FY 93           |
| VMA(AW)-332                | FY 94           |
| VMA(AW)-533                | FY 95           |

\*All squadrons will be redesignated VMFA(AW) upon transition.

\*\*Unit will reactivate as VMFP-3 stands down.

## NASM Opens New Carrier Exhibit

The National Air and Space Museum in Washington, D.C., recently opened two new exhibits in the popular Sea-Air Operations Gallery. "Carrier War in the Pacific" chronicles the six carrier-versus-carrier battles fought between the U. S. and Imperial Japanese navies during WW II, using maps, charts, artifacts, models, newsreels, and photographs to trace the war from Pearl Harbor through the battles of Coral Sea, Midway, the Eastern Solomons, Santa Cruz, the Philippine Sea, and Leyte Gulf.

"Squadron Ready Room" is modeled after the ready room of the *Black Aces* of VF-41 aboard the carrier *Theodore Roosevelt* (CVN-71) and features original furnishings and

memorabilia, including charts, bulletin boards, flight suits, and other items actually used by the *Black Aces* during their 1988-89 Mediterranean deployment. Also depicted are charts and news clippings from VF-41's 1981 downing of two Libyan Su-22 *Fitter* aircraft. A new film, *Ready Room*, produced by *Aviation Week & Space Technology* magazine at the request of the Association of Naval Aviation, accompanies the exhibit. The film features footage from the Navy Fighter Weapons School.

As an additional improvement, the carrier launch and recovery film sequences featured in the simulated bridge and pre-fly exhibits have been updated with footage from *Theodore Roosevelt* flight operations, featuring all 10 squadrons which comprise Carrier Air Wing Eight.

## HS-10 Brings SH-60F into Fleet Service

HS-10 took delivery of its first SH-60F *Seahawk* on June 22, 1989, at NAS North Island, Calif., marking the introduction of the latest antisubmarine helicopter into fleet service. As the West Coast fleet readiness squadron (FRS) for carrier-based, rotary-wing antisubmarine (ASW)/search and rescue (SAR) personnel, HS-10 will transition all Pacific HS squadrons from the SH-3H *Sea King* to the new CV inner-zone ASW helicopter - beginning with HS-2.

HS-10 has turned over its SH-3 FRS responsibilities to

HS-1, the East Coast SH-3 FRS (for ASW) at NAS Jacksonville, Fla., and to HC-1 at North Island for SAR/utility training.

Sikorsky Aircraft



The new SH-60F employs its dipping sonar.

## USCG Doubles E-2 Anti-Drug Force

The Navy recently transferred two more E-2C *Hawkeyes* to the Coast Guard, bringing to four the number of such early warning aircraft operated by the Coast Guard in the drug interdiction role. They are based in St. Augustine, Fla.

The transfer is part of a realignment of aircraft assets brought to bear against drug smugglers. Two E-2Cs operated in the same role by the U. S. Customs Service were recently returned to the Navy for overhaul in exchange for the two transferred to the Coast Guard.

## Portugal to Buy SH-2F Helos

Portugal has decided to purchase five Kaman SH-2F *Seasprite* LAMPS MK I antisubmarine warfare helicopters for operations from its *Vasco da Gama*-class frigates presently under construction. The delivery of the first Portuguese H-2 is expected in 1991.

Portugal will be the second foreign nation to operate the *Seasprite* (following Pakistan), which first entered service with the U. S. Navy in 1962. After being out of production for 16 years, the H-2 was again procured by the Navy starting in 1981 to maintain a sufficient level of LAMPS MK I helicopters aboard frigates in the fleet. A new version, the SH-2G, is currently under development.



Ensign Rebecca Yaites

The fleet's newest TACAMO aircraft, the Boeing E-6A, completed its first operational mission on October 31, 1989, flown by 18 "Ironmen" of VQ-3, with skipper Cdr. Vernon C. Lochausen at the helm. VQ-3 has grown to be the largest squadron in the Navy, with over 750 members. A VQ-3 E-6A is shown over Diamond Head in Oahu, Hawaii.

## Two USN MIA Remains Identified

The remains of two Naval Aviators missing in combat over North Vietnam were recently identified from sets of remains returned to the U.S. from Vietnam. The two aviators, LCdr. Wilmer P. Cook of Annapolis, Md., and Lt. David A. Kardell of Sonoma, Calif., were both with CVW-15 aboard *Coral Sea*.

Lt. Kardell of VF-154 was lost while flying an F-8D *Crusader* on a reconnaissance mission on May 9, 1965. VA-155's LCdr. Cook was lost on December 22, 1967, when his A-4E *Skyhawk* caught fire and crashed after a bombing run. The frigate *Cook* (FF-1083) was named in his honor in 1971.

A total of 260 Americans have been identified from returned remains, while 2,323 Americans are still unaccounted for in Indochina.

## V-22



Ted Hayes, Bell Helicopter Textron

The first formation flight of the Bell/Boeing V-22 "Osprey" was logged on November 3, 1989, as the first and second prototypes (BuNos 163911 and 163912) joined over Arlington, Texas.

## FY-89 Pilot/NFO Rates Achieved

The Naval Air Training Command achieved the Navy's aviator and Naval Flight Officer (NFO) training goals for FY 89, producing 1,528 pilots and 591 NFOs for the fleet. This was the highest production rate since 1973.

The goal was achieved despite instructor shortages and an aging training aircraft fleet. Meeting the training rate is vital to the fleet in terms of manning aviation squadrons. It also has a subsequent effect, when combined with an adequate level of retention, of providing enough experienced personnel to fill instructor billets, as well as eventually providing Naval Aviation a talented pool of leaders from which to select squadron department heads and commanding officers.

## HCS-4 Established, HAL-4 Disestablished

Another step in the modernization of the Naval Air Reserve took place on September 23, 1989, when Helicopter Combat Support Special Squadron (HCS) Four was established at a ceremony at NAS Norfolk, Va. Simultaneously, Helicopter Light Attack Squadron (HAL) Four was disestablished (officially October 1) as the Navy's last HAL squadron, its mission being absorbed by HCS-4.

Like its West Coast counterpart, HCS-5, the new squadron will operate eight new Sikorsky HH-60H *Seahawks* in the strike rescue and special operations role. In the rescue role, the HH-60H can extract an aircrew of four

in hostile territory and in all-weather conditions from a radius of 250 nautical miles. As a special warfare aircraft, it can insert or recover eight combat-equipped Navy SEAL team members from a radius of 200 nautical miles. The HH-60H is equipped with M-60 machine guns, chaff and flare dispensers, and infrared jamming gear. HCS-4's aircraft will bear the tail code "NW" of Helicopter Wing Reserve.

HAL-4's disestablishment brings to an end the role of the *Huey* gunship in the Navy, an impressive history that began in the mid-1960s in Vietnam with the *Seawolves* of HAL-3. Established on July 1, 1976, HAL-4 operated the Bell HH-1K version of the famous *Huey*.

Cdr. Wilbur E. Edwards, Jr., turned over command of HAL-4 to Cdr. Early H. Frazier, Jr., 10 minutes before HAL-4 was disestablished. Cdr. Frazier then became the first C.O. of HCS-4.

## Reserves Modernize with SH-3H

HS-75, the East Coast reserve H-3 antisubmarine warfare (ASW) squadron, has completed transition to the SH-3H series of the Sikorsky *Sea King* ASW helicopter. This transition at NAS Jacksonville, Fla., marks another milestone in the modernization of reserve carrier wings to equip all of their squadrons with fleet standard aircraft.

HS-75 previously operated the SH-3D, many of which are being converted to SH-3Hs. The squadron's West Coast counterpart, HS-85 at NAS Alameda, Calif., will soon trade in its SH-3Ds for the improved "Hotel" version. While both versions have a dipping sonar, the SH-3H also has a

TAC/NAV system and the capability to deploy sonobuoys and process their acoustic signals.

## Coast Guard Modifies Ex-USAF H-3s

The Coast Guard has acquired several ex-USAF Sikorsky CH-3E "Jolly Green Giant" helicopters and has modified three of them as search and rescue helicopters for service at CGAS Traverse City, Mich.

Six CH-3Es transferred from the Air Force and three more ex-USAF CH-3Es acquired from the Navy inventory were used to produce three rescue helicopters to augment the Sikorsky long-range HH-3F *Pelicans* that have long served in the Coast Guard. The three helicopters were overhauled at Elizabeth City, N.C., with updated avionics, radar, a rescue hoist, and auxiliary fuel tanks to increase endurance to six hours. The other six CH-3Es will be retained for airframe spares support.

Although similar to the HH-3Fs, the overhauled helicopters retain the CH-3E designation, and carry the last four digits of their USAF serial numbers (9691, 2791, and 2793) as their Coast Guard serials. For simplicity of logistics, all three have been assigned to CGAS Traverse City, displacing three HH-3Fs which were transferred to reinforce CGAS Clearwater, Fla., which now operates 12 HH-3Fs and is heavily involved in drug interdiction operations.

## VAW-112 First with E-2C Group I Update

VAW-112 became the first operational E-2C squadron in the fleet to receive the Update Development Program (Group I) version of the E-2C when it took

delivery of BuNo 163538 on August 9, 1989. The new variant incorporates both avionics and engine improvements that will benefit the carrier battle group with improved battle management capability.

The Group I Update included the APS-139 early warning radar, which offers improved detection in a variety of operating environments, and a high-speed processor which improves automated target tracking.

The extra horsepower and new fuel control system provided by the new T56-A-427 engines improves mission performance with greater on-station time, a more rapid climb to station, and an increase in divert and bingo ranges. Another engine feature is the new Low Speed Ground Idle, which significantly reduces engine noise on the deck.

## Night-Attack AV-8B Delivered

The first production AV-8B *Harrier II* equipped for night attack was delivered to the Marine Corps on September 15, 1989. The VTOL aircraft was flown to the U.S. Naval Weapons Center (NWC) at China Lake, Calif., from the McDonnell Douglas factory in St. Louis, Mo.

The delivery of the first production night-attack AV-8B follows, by a little over two years, the June 1987 first flight of the night-attack prototype, which is also based at China Lake, being tested and developed by VX-5 and NWC crews.

The night-attack AV-8B features several new avionics systems that will enable Marine attack squadrons to provide battlefield close air support around the clock. A forward-looking infrared (FLIR) sensor provides a video image of terrain and aids in identifying targets. Night-vision goggles and reduced cockpit lighting will

enable the pilot to visually acquire targets in the dark. A color digital moving map display in the cockpit will help the pilot navigate to the target



and will display threat information. The FLIR and map display controls are mounted on the control stick to reduce the workload on the pilot in the demanding night environment.

The last 157 of 323 AV-8Bs projected for the Marine Corps will be equipped with the night-attack avionics.

## Reserves Deploy P-3C Update III

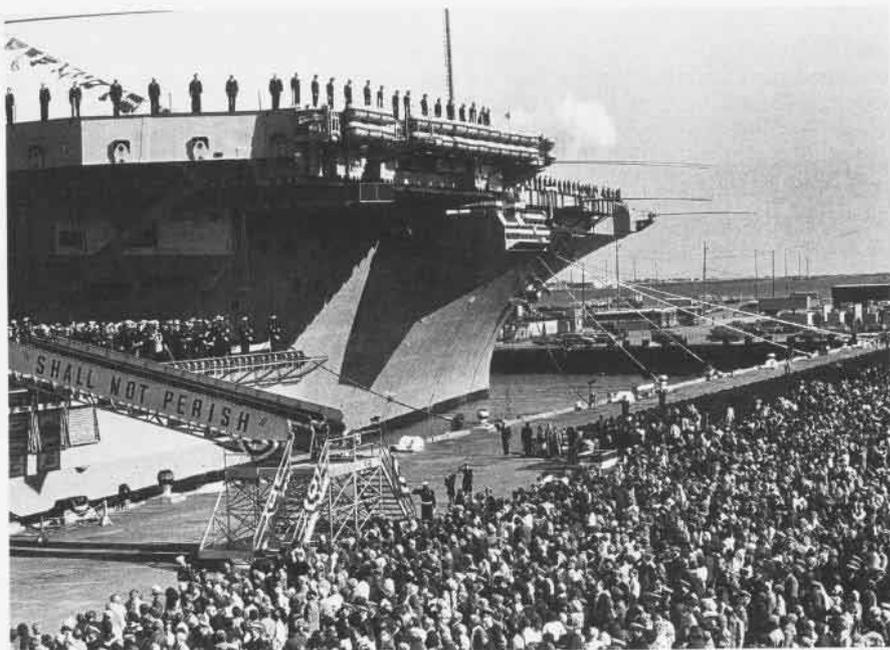
The first overseas deployment by a Naval Air Reserve unit with the P-3C Update III antisubmarine aircraft occurred in August 1989 when VP-62 conducted its annual training from NS Rota, Spain. This marked another milestone in the modernization of the Naval Air Reserve and its integration into the total force concept.

VP-62 is the first reserve force squadron to transition to the P-3C. It traded the last of its P-3B TAC/NAV MOD aircraft earlier this year for new production P-3C Update III versions, equipped with an integrated sensor data processing capability, as well as the Single Advanced Signal Processor, which incorporates the latest improvements in acoustic processing.

## Errata

VMAQ-4 was incorrectly noted on page 4 of *NA News*, November-December 1989, as having transitioned to the EA-6B. VMAQ-4 still flies the EA-6A.

## “Shall Not Perish”



# USS Abraham Lincoln

Story and Photos by JO1 Jim Richeson

Captain William B. Hayden turned to Rear Admiral John K. Ready, Commander Naval Air Force, U.S. Atlantic Fleet, and said, "Sir, the United States Ship Abraham Lincoln is in commission, I have assumed command, and I report for duty."

Capt. Hayden then ordered his executive officer, Captain Robert L. Peterson, to set the first watch.

"Boatswain's mate, pipe the first watch," Capt. Peterson directed. The ship's whistle pierced the crowd's eardrums calling all hands to attention. "Sir, the officer of the deck has set the watch," Capt. Peterson replied.

"Very well, bring the ship to life," ordered the ship's commanding officer. Capt. Peterson's voice boomed, "United States Ship Abraham Lincoln, come alive."

As soon as the words were spoken, the aircraft carrier USS *Abraham Lincoln* (CVN-72) became the latest addition to the U.S. Navy's fleet as it was commissioned on November 11, 1989, at Pier 12, Naval Station, Norfolk, Va.

More than 15,000 friends, relatives, visitors from the state of Illinois, and distinguished guests celebrated Veterans' Day as witnesses to the largest Navy ship ever built (by weight)

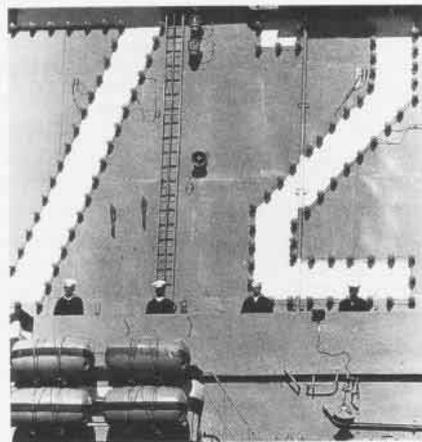
being called to active duty.

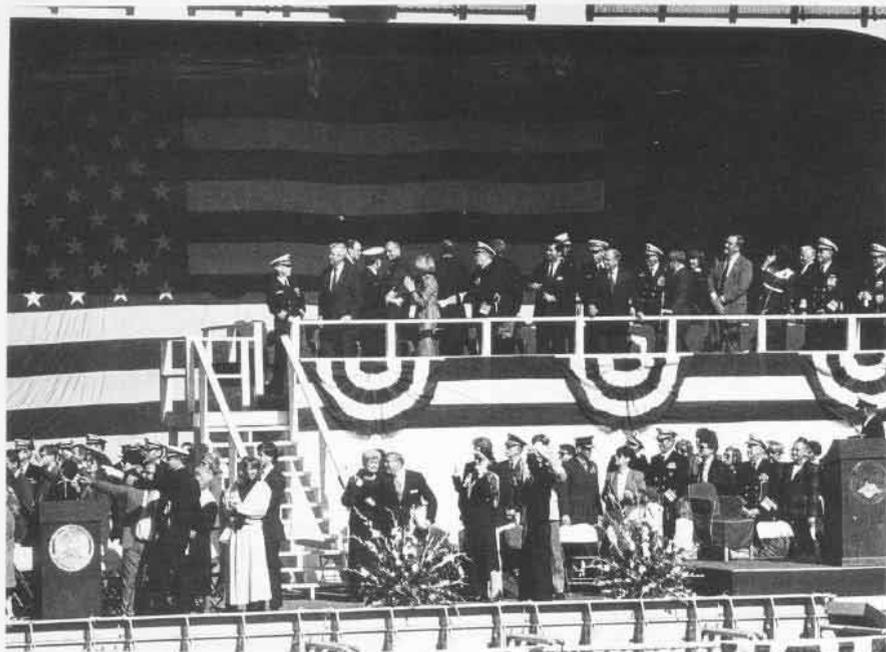
Mrs. JoAnn K. Webb, the ship's sponsor, headed the list of dignitaries, which included Virginia Senator Charles S. Robb; several members of the House of Representatives; Illinois Governor James R. Thompson; Navy Secretary H. Lawrence Garrett III; Chief of Naval Operations Admiral C. A. H. Trost; Admiral Frank B. Kelso II, Supreme Allied Commander, Atlantic/Commander in Chief, U.S. Atlantic Command; Assistant Chief of Naval Operations (Air Warfare) Vice Admiral Richard M. Dunleavy; and Secretary of Defense Dick Cheney, the event's principal speaker.

"This is a magnificent day for the great state of Illinois," Adm. Trost said as he announced *Abraham Lincoln's* arrival.

He added, "The mention of Abraham Lincoln evokes images of freedom in every American, and every citizen of the world who has tasted the sweet fruit of liberty. The name Lincoln also evokes powerful images of strength and national resolve. This ship honors a man who led our country through its most bitter and divisive period."

Adm. Trost concluded his address





Far left, more than 15,000 spectators welcomed the arrival of the Navy's newest aircraft carrier. Left, distinguished guests anticipate the arrival of a 16-plane flyby from Abraham Lincoln's air wing. Above, the ship's crew grew from three original plankowners to more than 2,800 sailors.

# Joins the Fleet

Left, ship's company mans the rails. Bottom left, PFC Lewis L. Evans, a member of the carrier's Marine detachment. Below, Capt. William B. Hayden reports for duty as he takes command of the Navy's fifth Nimitz-class ship.



by leaving the aircraft carrier's 2,800 crew members a charge that President Lincoln wrote to one of his generals during the civil war: 'Beware of rashness, but with energy and sleepless vigilance go forward and give us victories.' The admiral said, "Your victories, and the victories of this ship, will be measured in the wars that never were because you were there."

Defense Secretary Cheney emphasized that commissioning a great carrier is proof to veterans that the nation will be capable of defending the ideas and values they fought for. "The

naming of this ship, Abraham Lincoln, confirms our adherence to the principles of liberty and equality that Lincoln stood for and that our veterans have defended."

He continued, "And just look into the faces of these plankowners, whose average age is about 19. Seeing this crew in action tells us, more than words can, that America's defense remains in capable hands."

Secretary Cheney said, "Many words have been and will be spoken about this great ship, about its enormous power, and about its part in America's global military reach. But no words can be as important as ones I know all of us want to say: Sailors of *Abraham Lincoln*, thank you for your willingness to put on our nation's uniform, to spend months at sea in every part of the globe, and to place yourselves in harm's way for the sake of America's freedom."

He pointed out that he is convinced the key to the nation's military strength isn't technology but young people prepared to take on the duties and risks of military service.

"This carrier will join the other battle groups in a world marked by many threats, but also by remarkable

change," Secretary Cheney went on. "The changes are especially clear in the Communist world where nations may be moving closer to the dream Abraham Lincoln spoke of over 125 years ago.

"*Abraham Lincoln* will serve this nation well into the next century. It's now capable of accepting our most advanced weapons. It can also handle any new weapons we expect to deploy. *Lincoln's* F-14 force will be replaced one day by the Advanced Tactical Fighter, and the A-12 will replace the A-6. This carrier and its crew will be ready for the future," he concluded.

The ceremony capped more than five years of construction by Newport News Shipbuilding, Va. The three-billion-dollar vessel is the fifth *Nimitz*-class ship built and the second to bear the name of the 16th president. The first *Abraham Lincoln* was a 382-foot, nuclear-powered, *Polaris* ballistic missile submarine, which was commissioned in 1961 and decommissioned in 1982.

The name of the resolute Midwestern lawyer and former president will be proudly served by the Navy's newest supercarrier. ■

# Sea Guard Retires at 26 Plus

By LCdr. Rick Burgess



With VAdm. Howard B. Thorsen, Commander, Atlantic Area, at the controls, Coast Guard HH-52A serial number 1383 flew for the last time on September 12, 1989, closing out the Coast Guard career of the Sikorsky HH-52A *Sea Guard* helicopter after over 26 years of yeoman service, much of it involved in saving lives.

The last two HH-52As in service returned from an arctic deployment aboard Coast Guard cutter *Polar Star* (WAGB-10). One of them, 1462, was transferred to the Army's Aberdeen Proving Ground in Maryland for conversion into a target drone. Following its last flight, 1383 was flown to Fort Eustis, Va., for screening and eventual display at the Mariner's Museum in Hampton, Va.

The turbine-powered HH-52A, a version of the Sikorsky S-62 commercial model, was selected by the Coast Guard in 1962 as a replacement for its Sikorsky HH-19G and HH-34F radial-

engined rescue helicopters. First delivered on January 16, 1963, a total of 99 *Sea Guards* were eventually procured by the Coast Guard, with production ending in 1968.

The HH-52A bears strong resemblance to its larger, twin-engined cousin, the Sikorsky H-3 *Sea King*, with its amphibous boat hull and landing gear sponsons. Designed as a short-range rescue and utility helicopter, it had a range of 300 nautical miles, a search and rescue (SAR) radius of 110 nautical miles, and an endurance of over three hours. The crew was normally comprised of two pilots and one flight mechanic/hoist operator.

During its long career, the *Sea Guard* performed a wide variety of missions, among them SAR, maritime law enforcement, environmental protection, port security, servicing of navigational aids, polar operations, and in the Alaskan Fisheries Patrol.

The HH-52A was a familiar sight to boaters all along the coasts of the U.S. Some 15,000 people were rescued by

*Sea Guards* during the course of their service; another 25,000 people in distress were assisted by Coast Guard HH-52A crews, and an estimated half-billion dollars worth of property damage and loss was averted by their actions.

While the HH-52A has been retired, its mission has expanded with the increased attention in the areas of law enforcement and drug interdiction. Replacing the HH-52A in its many roles is the Aerospatiale HH-65A *Dolphin*, a fast, modern design that was first delivered in November 1984.

The Coast Guard has taken care to memorialize the *Sea Guard* by earmarking several examples for museums and displays around the country, as listed in the table. Others have been set aside for possible display. ■

*Special thanks to LCdr. Tom King of the Coast Guard for assistance in preparation of this article.*

## Sea Guards on Display

| HH-52A | Last Unit             | Display Location                                 |
|--------|-----------------------|--|
| 1355   | CGAS Barbers Pt., HI  | National Museum of Naval Aviation, Pensacola, FL |
| 1378   | ATC Mobile, AL        | Battleship Alabama, Mobile, AL                   |
| 1415   | CGAS Port Angeles, WA | Pacific Museum of Flight, Seattle, WA            |
| 1426   | CGAS Houston, TX      | Valley Occupational Center, Mission Hills, CA    |
| 1428   | CGAS Detroit, MI      | New England Air Museum, Windsor Locks, CT        |
| 1429   | CGAS Brooklyn, NY     | Intrepid Sea-Air-Space Museum, New York, NY      |
| 1459   | CGAS Chicago, IL      | Museum of Science & Industry, Chicago, IL        |
| 1466   | CGAS Detroit, MI      | Selfridge ANGB Museum, Mt. Clemens, MI           |

## Sea Guards Planned for Display

| HH-52A | Last Unit        | Display Location                            |
|--------|------------------|---|
| 1383   | ATC Mobile, AL   | Mariners' Museum, Hampton, VA               |
| 1394   | CGAS Chicago, IL | Mid-Atlantic Air Museum, Reading, PA        |
| 1403   | ATC Mobile, AL   | USS Cabot Museum, New Orleans, LA           |
| 1416   | CGAS Houston, TX | Undetermined                                |
| 1450   | CGAS Houston, TX | Pima County Air Museum, Tucson, AZ          |
| 1455   | CGAS Detroit, MI | Aviation Hall of Fame Museum, Teterboro, NJ |

# The Senior Aviation LDO: His Heart's in Aviation

By JO2 Milinda D. Jensen

**“W**hen I was in high school, I went to see the movie *The Bridges at Toko-ri*. It was all about Naval Aviation. The actor William Holden was flying an F9F *Panther* jet. It showed carrier launching and aircraft going in on target. I saw all that and said, 'That's for me,'" reminisced Captain Thomas McMahon, Head of Air Control under the Assistant Chief of Naval Operations (Air Warfare).

For over three and a half decades, aviation has been where the senior Naval Aviation Limited Duty Officer (LDO) has put his heart and soul.

"I was facing the draft and the Korean War. I thought I'd enlist for three years, then get out and use the G.I. bill to go to college," said the 53-year-old veteran. "I was offered cryptologic technician (CT) school, but I was locked into aviation. They thought that I was crazy to give up CT school to go to airman preparatory school, but that was the route I chose to go," he added.

That route steered McMahon straight into the operations tower as an air traffic controller.

The fact that he made the rank of chief in eight years is evidence of how well he did his job.

It was while working as supervisor for the carrier air traffic control center onboard *Kitty Hawk*, that the aviation LDO was encouraged by his division officer to put in for one of the commissioned officers' programs.

Capt. McMahon chose LDO-Air Traffic Control Specialist and was selected October 1, 1964.

"I was enlisted for 10 years and served as an officer for 25 more," remarked the senior aviation LDO. "I can't even begin to tell you how valuable being enlisted was. To be able to understand the pressures that enlisted people go through is a plus," he said.

The captain added that the LDO program was a good way to assume

more responsibility.

"You have to make sure that it's really what you want and that you're willing to pay the price. Ideally you're suppose to be the *crème de la crème*. You have to have superior performance, the knowledge, and you have to become a superior leader. If you're willing to pay for it, I'd say go for it," he emphasized.

The captain added that the transition from a highly esteemed chief petty officer to an ensign was a difficult one. "I answered the phone Ensign McMahon. They didn't know that they were talking to someone with lots of experience," he remembered. "My first year wasn't really a happy one, but then you get into a whole new mindset as a naval officer."

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***"Any air traffic controller worth his salt can handle as many planes as you can throw at him – at any time – on any given day."***

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According to McMahon, being an officer has been very rewarding. "You can impart your values into the lives of other people. In aviation it's the air traffic controllers who are responsible for the safe, orderly, and expeditious flow of air traffic. What I try to do is to instill values that help us move traffic in all those ways," said the captain.

In 1982, while stationed at NAS Lemoore, Calif., as the Air Operations Officer, Capt. McMahon discovered other rewards unique to the aviation field.



AC1 McMahon at the controls in the late 1950's.

"We used to go into the Sierra Mountains and practice rescue tactics to improve our proficiency. All that practice paid off when we rescued a 10-year-old boy, who survived five days in minus-35-degree weather, after his parents' plane crashed. Both parents were dead in the cockpit," said McMahon. "We averaged about 60 saves a year," he added.

"The time went by very quickly. When I first came in we lost a lot of planes. Today, it's 10 times safer to fly. "One of the really amazing things that I've witnessed over the 35 years is the capability of the aircrafts' weaponry. We went from 2.76 rockets to smart weaponry that zeroes in on the target," the captain stated.

The senior aviation LDO said he has no concrete plans when he retires in February, but hopes to stay in the field of air traffic control or aeronautics because, "My heart is really in aviation." His philosophy: "If it's not fun, you're not doing it right." ■

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# Ensign Nolo and the Drones



Story and Illustrations by Hank Caruso

All illustrations copyrighted by Hank Caruso.

Flushed with victory and dripping with confidence, the legendary Ensign Nolo cheats death yet again following a head-to-head encounter between missile and full-scale drone at PMTC.

**"My name is Nolo, Ensign Richard Nolo. I fly the tough missions ... I mean the REALLY tough ones. The kind that all the other pilots won't even think of flying. I've been flying here for decades, but I just keep getting better. The word retirement isn't even in my vocabulary."**

Ensign Nolo is a legend at the Targets Directorate, Pacific Missile Test Center (PMTC), NAS Point Mugu, Calif. Not because he's a hot stick. In fact, he's been involved in more aircraft "mishaps" than any other pilot flying. But he flies missions that no one else will. And he's flown every aircraft in the Targets inventory for the last four decades. Of course, that's a long time to remain an ensign. It's not that he hasn't been promoted. But it seems that whenever he starts to move up the ladder, someone comes along and shoots him down.

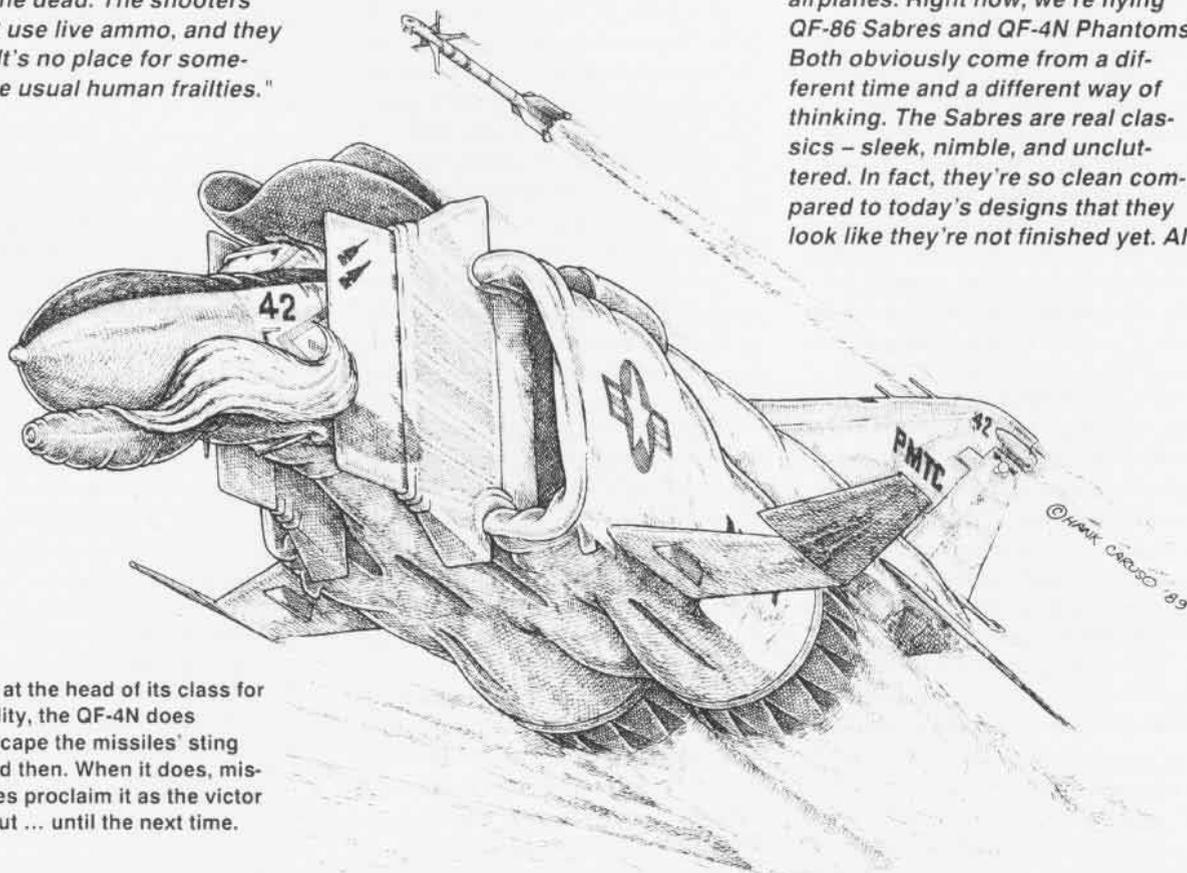
**"There's a kind of Wild West flavor out here at Targets: the quick and the dead. The shooters from PMTC use live ammo, and they aim to kill. It's no place for someone with the usual human frailties."**

The Targets Directorate operates, maintains, and provides airborne and surface target services for the fleet. It also provides engineering support for developing, testing, and evaluating targets and related systems. The targets include drones, missiles, towed bodies, and surface ships and ship simulators. But undoubtedly the most visible and spectacular members of the Targets cast are the full-scale aircraft. Aircraft that are no longer in active service are often given the questionable privilege of serving as the target for live missile firings to support the missile's development program. These aircraft are fitted with a television camera in the nose, servo control systems, and radio telemetry equipment so that they can be flown by a remote operator on the ground – the ultimate radio-controlled aircraft.

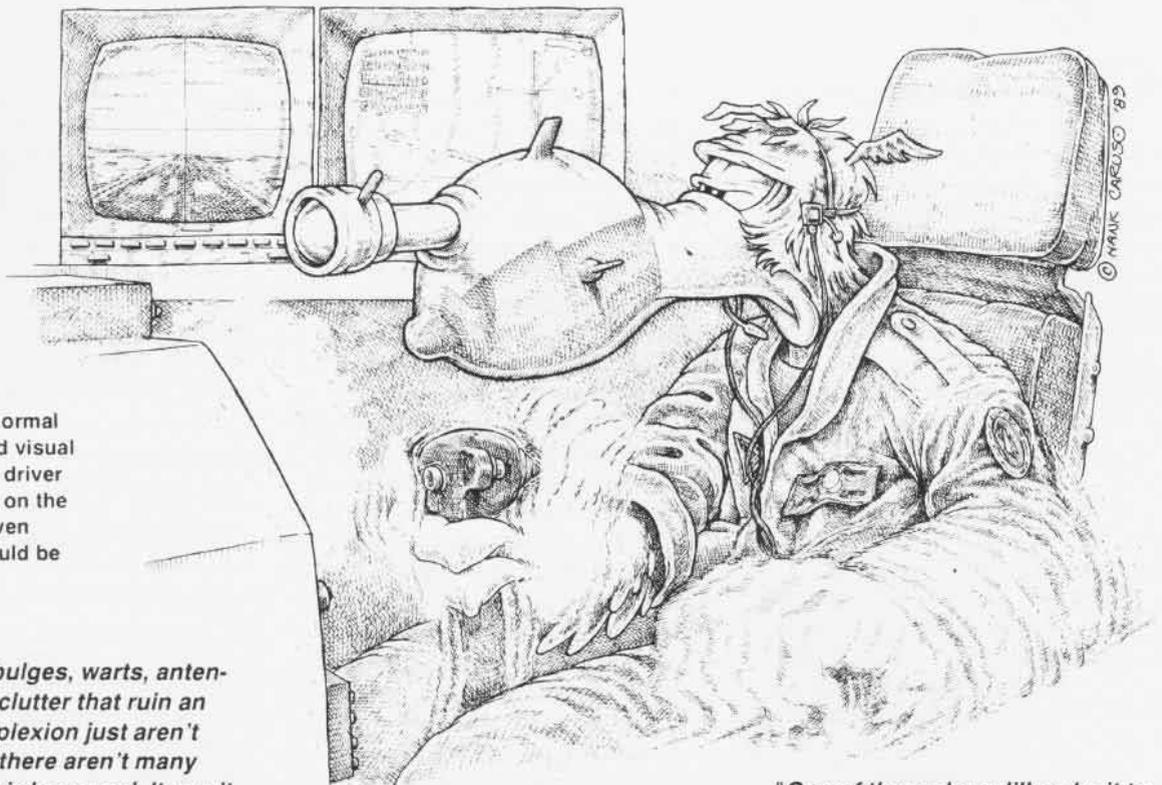
Targets' job is often misunderstood. One West Coast reporter was convinced that a live pilot flew the target

aircraft until he could see the missile coming at him, at which time he would eject just before the missile hit. Other misconceptions are more subtle. Although the Wild West feeling that goes with Targets' unique mission is strong, it would be wrong to assume that personnel here treat their jobs casually or unprofessionally. On the contrary, with so much unmanned heavy metal flying through the air, the hazards to aircrew and people on the ground would be unacceptable without the strictest and most thorough safety precautions taken before and during each mission. A complex, mission-control-style operations facility oversees all aspects of range operations and safety. And the drone aircraft are programmed to fly harmlessly out to sea should radio contact with ground control be lost.

**"Ask any of the half dozen or so pilots here at Targets and they'll tell you that one of the real thrills that goes with the job is the opportunity to fly some truly legendary airplanes. Right now, we're flying QF-86 Sabres and QF-4N Phantoms. Both obviously come from a different time and a different way of thinking. The Sabres are real classics – sleek, nimble, and uncluttered. In fact, they're so clean compared to today's designs that they look like they're not finished yet. All**



Although not at the head of its class for maneuverability, the QF-4N does manage to escape the missiles' sting every now and then. When it does, missile silhouettes proclaim it as the victor in the shootout ... until the next time.



Deprived of his normal sensory cues and visual scans, the drone driver finds that his life on the ground can be even busier than it would be in the air.

*of the bumps, bulges, warts, antennas, and other clutter that ruin an airplane's complexion just aren't there. Too bad there aren't many more of these birds around. It won't be long before the last one is shot down in the call of duty.*

*"The Phantoms, on the other hand, come from the same mindset as the muscle cars of the sixties – designed with lots of power and speed at the expense of just about everything else, like fuel consumption, maintainability, and maneuverability. But what it does, it does like no other airplane. A really distinctive personality. Lots of potential targets here because of all of the F-4s that have recently been retired from active duty.*

*"Of course, I don't fly all of my missions alone. When it's not planned for someone to be shooting at my airplane, the drone safety pilot flies with me ... just in case. He and the drone driver on the ground keep looking over my shoulder like they think I might do something wrong."*

Learning to fly the drones isn't easy, either in the air or on the ground. The drone driver on the ground leaves most of his accustomed cockpit sensory cues behind and replaces them with a small black-and-white TV screen and a control stick with no

force feedback. The visual scan pattern that he's spent years developing doesn't work on the ground, so he relies on an assistant to help with verbal speed and altitude calls. Complicating matters is the fact that the drone flights are made from nearby San Nicolas Island, whose runway sits at the edge of an abrupt 500-foot drop into the Pacific Ocean. The margin for error on landing is very small.

There are different instincts to overcome in the air. The drone safety pilot is generally along for the ride while the drone pilot is flying the aircraft, unless there are problems with the communications link-up or the drone pilot needs assistance. Otherwise, drone safety has the unenviable job of having to sit and suppress many of his normal reactions while someone he can't see flies the plane. Because of the difficulties involved in remote flying, the airplane may not always be doing things that the drone safety pilot is either comfortable with or able to anticipate. A large measure of stoic acquiescence goes with this job. Nevertheless, the enthusiasm of the pilots at Targets is as high as I've seen it anywhere else in Naval Aviation.

*"One of these days, I'll make it to the top. I've never made it past lieutenant commander, but I might just get lucky. Besides, I'll be around for a long time."*

NOLO is an acronym. (But you'd better not tell him that to his face. He'd never understand). NOLO flights have No Live Operator Onboard and are, by definition, intended to end with the aircraft showing up missing. But things don't always work out for the shooters and sometimes Ensign Nolo lives to fly another day. When he does, a missile is painted conspicuously on the side of his aircraft, and he is given a spot promotion. Unfortunately for him (but not for the taxpayers or the fleet), there are a lot of dedicated people who are determined to keep him from succeeding. ■

Acknowledgments: My sincerest thanks to all of the personnel at PMTC and the Targets Directorate for making my learning experience as intense and enjoyable as it was. In particular, I would like to thank my host, RAdm. George H. Strohsahl, Jr., Commander, PMTC; LCdr. Dave Vail and Mary Vail for making it happen; Cdr. Bob Williams for his insightful observations; and my pilot, civilian Ken Bushpics, one of the last of the great and vanishing breed of Phantom Phlyers.

# Top Gun: Just Another Navy School?

By Lt. T. J. Roorda

Although the phrase "Top Gun" conjures up images of Tom Cruise, Kelly McGillis and F-14 *Tomcats*, neither Mr. Cruise nor Ms. McGillis work at the real Navy Fighter Weapons School (NFWS). Jester and Viper are not the call signs of the skipper and executive officer. Most importantly, the F-14 is not the only fighter in the U.S. Navy inventory. Notably, the F/A-18 is the newest fighter and one of the most capable air superiority dogfighters in the world. Just as much as F-14 aircrews need Top Gun, *Hornet* pilots need the training available there. A *Hornet* pilot's mission when he attends the Navy Fighter Weapons School is to enhance his knowledge of the F/A-18 as a weapons platform.

Curious to find out what goes on at Top Gun, F/A-18 pilots interrogate those who have been there. For a pilot in our squadron who recently attended the school, the questions came pouring in from his squadronmates: "Who won the trophy?" "What was it like to fight the F-16 *Falcon*?" And the most difficult to answer: "How was Top Gun?" That pilot's response demonstrates a subtle wit as he says facetiously, "Oh, it was just another Navy school."

In talking with him, though, one finds out that it is much more. When pressed for an honest answer, he acknowledges that NFWS "is run like a school should be run." Top Gun has just opened new hangar facilities. Through a security door, the visitor finds a long carpeted hallway which gives a professional, businesslike atmosphere. There are classrooms equipped for video and slide presentations and white boards for briefing and debriefing. The classrooms are well

designed for a comfortable and efficient interaction between instructor and student. Also, Top Gun has planes: model planes for briefs and debriefs and real planes for learning fighter combat in the real world. There are F-16s, F-5s and A-4s, fast and nimble, used by the school to simulate the fighter threats that exist in today's world. Importantly, Top Gun has the funding necessary to make it a professional operation. Combining all this, the recent graduate asserts that NFWS is "the ultimate learning environment."

Intense is the word that comes to mind when he describes the daily regimen of Top Gun. The first week is lectures, Monday through Saturday. Thereafter, the day begins with classwork from 0700-1100; then a brief for a flight that takes off from NAS Miramar, Calif., at 1230 and fights near Yuma, Ariz., lands at Yuma, debriefs for at least an hour and a half, then briefs again, fights, and returns to Miramar to debrief. The student arrives back in his room at Miramar at about 2000, with just enough time to study, plan, and anticipate the next day's learning experience. This daily schedule goes five days a week for five weeks and allows little time to do much else.

The recent student is quick to point out that Top Gun is not "hair-on-fire jet jocks" doing low fly-bys next to the control tower, or spouting over the radio, "Yee-hah, Jester's dead!" On the contrary, being a student is by definition humbling. A student at Top Gun finds that there is very much to learn and little time. When a student goes out to fight an instructor, he makes mistakes. And as the student attempts to debrief in his way, instruc-



F-16s

tors criticize his debrief techniques. Top Gun wants information presented in a certain way. The thrust of the critique and the lessons is not to humiliate. The recent graduate says, "They do beat you down; it is humbling. But then they build you back up and, by the end, the student is confident of what he knows and how to present it."

Presenting information is a vital point to a student at NFWS. It becomes his job to return to his squadron as the Air-to-Air Weapons Training Officer, a premier job in a fighter unit. He is responsible for disseminating fighter weapons knowledge to his squadronmates — fleet pilots who, if need be, would use Top Gun tactics in actual combat.

The Top Gun veteran catches a lot of flak from his squadron buddies. For VFA-25's recent graduate, Lieutenant Dan Dixon, it is no different. The ribbing and jokes that "Dix" gets about his training experience are all in good fun, though peppered a bit with envy. Every fighter pilot vies for the chance to attend the Navy Fighter Weapons School. The criteria, though, is somewhat different than portrayed in the movie *Top Gun*. Being selected to attend involves a variety of factors, timing being one of them. But if a commanding officer had his druthers, he would probably send 100 percent of his pilots to the school, not just the reputed "top one percent," or as Kelly McGillis would say, "the best of the best."

If every fighter pilot could attend Top Gun, the lessons would be invaluable and the rewards to the Navy immeasurable. However, every Navy school has its quotas, and the Navy Fighter Weapons School is no exception.

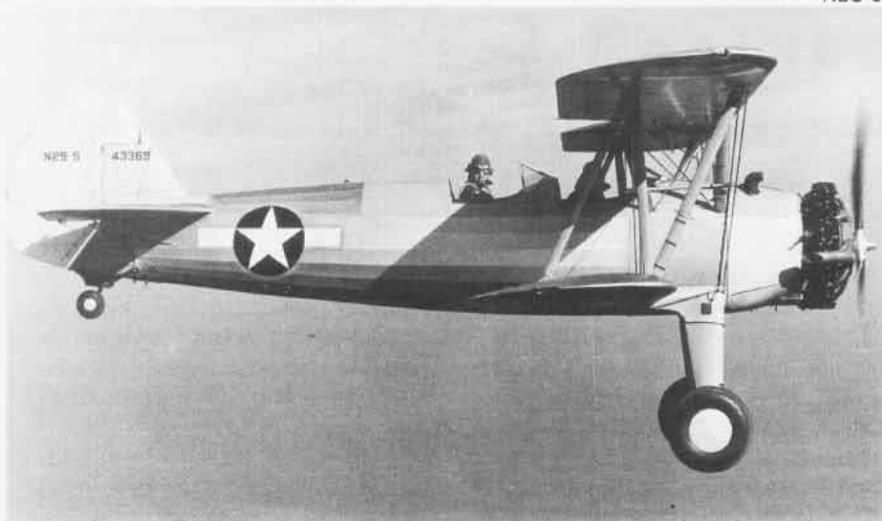
But the Top Gun patch on his flight suit and the wry smile on Dan Dixon's face when he says, "It's just another Navy school," indicate that there is much more to it than that. ■

Officially Boeing *Kaydets*, the Navy's WW II N2S primary trainers, like their Army Air Force counterparts, were far more widely known as "Stearmans." The "S" in the Navy designation was never changed to "B" for Boeing so this was not inappropriate, but the popular use of a company name for one specific model of a company's airplanes is unusual.

The name situation can be traced to circumstances. In the late twenties, the Stearman Aircraft Company in Wichita, Kans., was well established as a manufacturer of sport, training, and air mail biplanes. Caught up in the aviation merger fever of 1928-29, it became part of United Aircraft and Transport Corporation's holdings. (United was a predecessor of today's United Technologies Corp. and United Airlines). With the government-directed 1934 separation of aircraft transport and manufacturing companies, United Aircraft was reorganized with only its New England-based companies.

Stearman became a subsidiary of the newly independent Boeing Aircraft Co. Successful with its subsequent line of fabric-covered biplanes, several more advanced prototypes didn't reach production. With the decision to build the Army's B-29 in Wichita, Stearman became the Wichita Division of Boeing in 1941. But the Stearman name remained with all the biplane trainers which continued in expanded production, and in wide use through the war years.

The "Stearman" traces its beginnings to the 1933 Model 70, built as a company-financed prototype under the Army's Cooperative Airplane Program of the early 1930s. Under this program, the Army provided guidance to meet service requirements and also government-furnished equipment, the company designed and built the prototype, and the Army evaluated it



for possible procurement. In this case, the XPT-943 – as Wright Field designated the prototype primary trainer – was first evaluated by the Navy at NAS Anacostia, D.C., in early 1934, and Army evaluation followed. With a need for additional and more modern trainers, the Navy purchased a total of 61 production NS-1 landplane trainers, based on the XPT-943 design.

Powered by in-stock, vintage 220-hp Wright R-790 Whirlwind engines, the NS-1s were otherwise typical of the many Stearman 70 series biplanes to come. Fuselage and tail were a mixed steel tubing and aluminum structure, while wings were basically of wood construction, all largely fabric covered. Seating for the instructor and student was in tandem cockpits, and generally clean lines and faired cantilever strut landing gear offset the uncowed radial engine to give something of a modern appearance.

The Army didn't purchase production models until a new prototype, revised in many details, was tested, after which the Army ordered their first ones as PT-13s in 1935. Unlike the Navy, the Army selected a Lycoming radial engine from among those in the 200-hp class available commercially, and subsequently military qualified for the production PT-13 series.

Production and sale of small numbers of export models followed, including general purpose military versions with 400-hp engines and armed with guns and light bombs, for some smaller countries. Cuba, various South American countries, and the Philip-

ines were among the purchasers.

Expansion of U.S. military forces following the opening of WW II in Europe brought significantly larger orders for Army Air Corps trainers. Some were ordered with different engines to meet production needs, as the PT-17 and PT-18 series. In late 1939, the Navy had reassessed its expanded pilot training needs and how to meet them. No longer would all pilots be seaplane trained, requiring convertible landplane/seaplane primary trainers. With the Naval Expansion Act of June 1940, many more pilots would be needed to fly the thousands of fleet airplanes planned. Hundreds of additional primary trainers would be needed to start and most would be landplanes.

Initial orders were placed with the Naval Aircraft Factory, Philadelphia, Pa., for 500 N3N-3s, but these would hardly meet the need. The Navy turned to industry for the rest, with Stearman getting the major order for 600 N2S-1s, similar to the Army's Continental R-670-powered PT-17s. These were delivered as N2S-1s, -2s (Lycoming R-680s), and -3s (differing only in detail from the -1s). Deliveries began in late 1940 and continued through 1941. In late 1941, after Stearman had become the Boeing Wichita Division, the Army models and the N2Ss received their common official name – *Kaydet* – along with the naming of other U.S. military aircraft.

Export sales continued, along with commercial ones of the now civil-certified trainer, to civilian schools under



N2S-3

# N2S

By Hal Andrews

NS-1



Capt. William Scarborough

the government-sponsored civilian pilot training program. With the Lend-Lease Program in place, others went to various North and South American countries, including 300 winterized for Canadian use in training RAF and RCAF pilots, and 150 to China. Direct sales ended after U.S. entry into the war following the Pearl Harbor attack, all subsequent transfers being under Lend-Lease.

More expansion of pilot training followed Pearl Harbor, greatly increasing production of N2S-3s, and adding similar -4s, both built under Army contracts. From mid-1943 until the last was delivered in early 1945, standardized N2S-5/PT-13Ds with Lycoming engines rolled off the Wichita line. Even the silver paint job was standard, though it was not unusual for Navy -5s to be repainted in the orange-yellow typical of Navy "Yellow Peril" primary trainers. Out of a total of nearly 8,600 70 series biplanes delivered, some 3,700 went directly to the Navy as N2S series trainers, the last in March 1944. Peak monthly Navy deliveries

reached over 200 in the summer of 1943.

Stearmans served in large numbers at Navy training bases throughout the U.S. A cabin enclosure, originally developed for the lend-lease PT-27s used by the RCAF in Canada, was fitted at some of the more northerly midwestern training fields. As training wound down late in the war, more and more Stearmans became excess, and after the war they became a major surplus sales item. Only a relatively few N2Ss continued as the Navy's primary trainers. In 1947 the Navy transitioned to SNJs for primary training and the last N2Ss were subsequently phased out.

Surplus Stearmans found wide use. Many were modified to varying degrees as dusters, and some as air show aerobatic planes. Others became just fun to fly – at surplus prices, relatively inexpensively. Gradually, the thousands originally in use dwindled down but many still fly today, mostly in the hands of antique airplane enthusiasts. ■

N2S-5



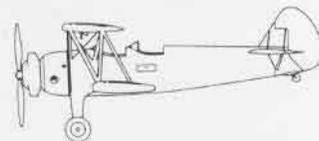
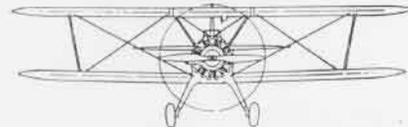
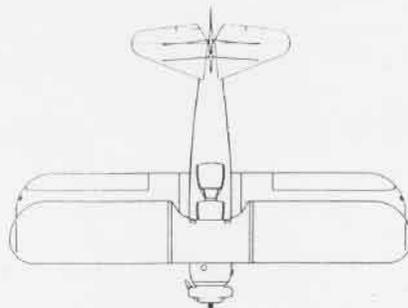
N2S-3



N2S



|                                   |                        |
|-----------------------------------|------------------------|
| Wing span: Upper                  | 32'2"                  |
| Lower                             | 31'2"                  |
| Length                            | 25'                    |
| Height                            | 9'10"                  |
| Engine: 1,-3,-4 Continental R-670 | 220hp                  |
| 2,-5 Lycoming R-680               | 220hp                  |
| Maximum speed                     | 122mph                 |
| Service ceiling                   | 11,900'                |
| Range                             | 450 mi                 |
| Crew                              | student and instructor |





**Ready or Not . . .**

# **Naval Aviation's Aircraft and Ships on the Eve of Pearl Harbor**

By Hal Andrews

Enterprise at Norfolk with its air group loaded aboard. Typical until 1941 was the half-monoplane, half-biplane composition: folded-wing TBD-1s at rear, then fixed-wing BT-1s, biplane SBC-3s, and F3F biplanes forward.

In early 1940, the newly winged **L**ensign Naval Aviator reporting to his first fleet squadron stood about an even chance of flying a biplane or monoplane combat-type airplane. This was at a time when the U.S. airlines were flying all their passengers in modern, all-metal, low-wing monoplanes. And the German Messerschmitt fighters, already proven in Spain, were wreaking havoc with their adversaries in the European fighting.

Joining one of 24 carrier squadrons, the four newest getting ready for the *Wasp* (CV-7) to be commissioned in April, the even chance prevailed. Only the four torpedo squadrons were fully monoplane equipped. They had been flying their Douglas TBDs, the first monoplanes in the carrier squadrons, for two years or more. Expansion and replacement had largely stocked the patrol squadrons (VP) with Consolidated PBY monoplanes; only four of 20 VP squadrons were still flying the older Consolidated sesquiplane P2Ys. For scout-observation pilots flying from battleships or cruisers, and for Marine second lieutenants, it was all biplanes.

The war in Europe, now several months old but at a temporary lull, had highlighted the advantages of the new,

higher performance monoplane combat aircraft. While getting less international attention, Japanese military operations on the Asian mainland and Formosa had done the same. Overall, though, the U.S. Navy's aircraft inventory wasn't that far behind the military aircraft of the rest of the world – particularly those of other navies.

Germany's Luftwaffe, Britain's Royal Air Force (RAF), France's L'Armée de l'Air, and the Japanese Army and Navy – and the U.S. Army Air Corps – had progressed further towards reequipping their front-line units with monoplanes, but many factors had affected military decisions on the transition from biplanes to monoplanes. Significantly, the now-vanquished Polish Air Force had been one of the first to make this transition, but had been overcome by numbers and the later, more advanced German fighters. The early French monoplane fighters were also not up to the front-line standards of the war. While clear evidence of aircraft modernization and its effectiveness was available from both Japan's Army and Navy air operations in China, it was generally downplayed, along with almost everything else Japanese.

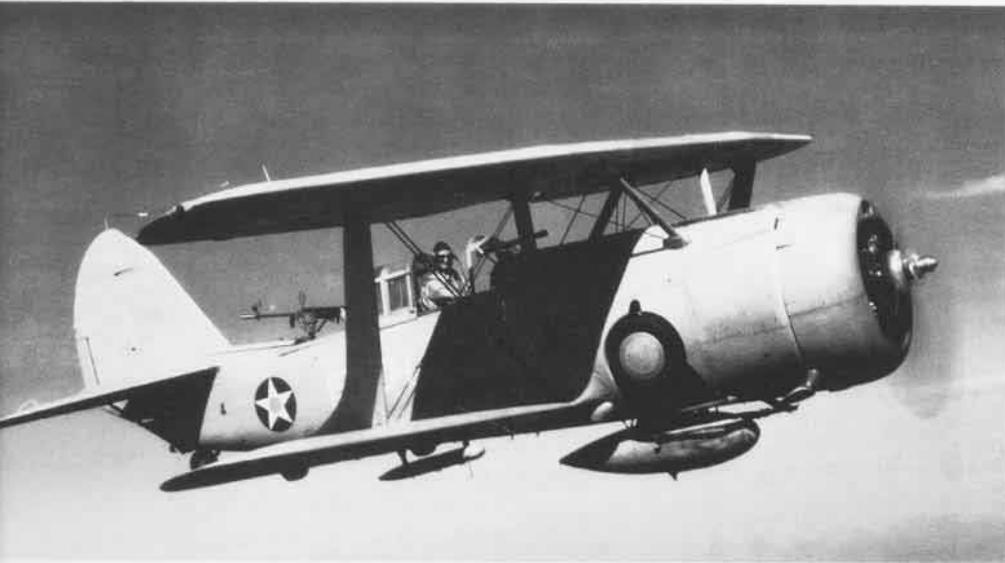
For those Navy pilots, fledgling or

experienced, who looked beyond the satisfaction of having achieved an important career goal in their assignment to a fleet squadron, concern with the reports of German and British fighter capabilities relative to those of their current aircraft was tempered by the knowledge that the U.S. was maintaining a neutral stance. And new monoplanes were on order, with design capabilities to match those of any potential combatants as they were known. In fact, the popular view – one has only to look at U.S. aviation publications of the period – was that the future airplanes in store for them were more than a match for the aircraft then in combat. The fact that torpedo-bomber pilots had to throttle back their TBDs and slow down to permit simulated attacks by their air group fighter pilots flying Grumman biplanes was only a temporary situation. While most of the Navy's first monoplane Brewster F2A-1 fighters had gone to help Finland in her fight with Russia, they would soon be replaced by an improved version, with Grumman monoplane F4F-3s to follow.

For confidence in what could be expected from the U.S. airplane manufacturers, it was obvious that the Douglas DC-3 transport was the standard of the world for airlines, with the companies already delivering new models of greater size and performance. Along with the Brewster fighters going to help the Finns, reports of the Curtiss *Hawk* 75A fighters bought by France were that they were doing the job against the vaunted German Messerschmitts. And the Army Air Corps would soon be getting Curtiss P-40s, a higher performance and better armed advanced model of the *Hawks'* P-36 equivalents. Furthermore, as discussed in the lead article of this series, "Ready to Mobilize" (*Naval Aviation News*, September-October 1989), events set in motion in 1938 were already acting to strengthen this country's naval – and Army – forces,



**President Bush got his initial flight training in a Spartan NP-1, one of 201 which were among over 1,300 primary trainers ordered in Summer 1940.**



On the eve of the Pearl Harbor attack, VMO-151 was still flying biplane SBC-4s; other Marine combat squadrons had completed transition to monoplanes.

including the accelerated transition to more effective – and more – ships and aircraft.

The focus of the carrier air groups was clear, and the scout-observation types were tied to surface operations of the fleet, but the issue of longer range operations in both the Atlantic and Pacific was more muddled. From actual war experience, bombing, scouting, and antisubmarine operations were all in the picture. However, roles and missions disagreements with the Army Air Corps entered in. Regardless, the need for the larger, faster, better armed flying boats on order was recognized. And lighter-than-air operations were being revitalized to explore their place in offshore and extended operations supporting the Atlantic Neutrality Patrol. Even the Marines could look forward to the early receipt of monoplanes to replace the mainstay of their air-to-ground strategy – the dive-bombers.

Recognizing that not only advanced models were involved, but many more of them were planned, training aircraft were also addressed. The initial low-wing monoplane trainers were in service; all were landplanes: first the initial fixed-gear North American NJ-1s, followed by their retractable-gear derivatives, the SNJ-1s. These would introduce the flight characteristics of the new fleet aircraft into pilot training,

which the traditional use of obsolete fleet types wasn't accomplishing; and there would no longer be enough of the latter to support the expansion of training under way. While still at peace here, it was an uneasy peace; the war in Europe and the Sino-Japanese conflict were all too real.

Spring ended the lull in Europe. Germany occupied Denmark and invaded Norway, where Britain responded with the first carrier action of the war – though their (and the Norwegian) fighters proved no match for the German Messerschmitts. In April, President Roosevelt announced his 50,000-airplane program, the same month that the *Wasp* was commissioned as the sixth active fleet carrier. In May,

Germany unleashed her Luftwaffe and Panzer divisions on the low countries and into France, skirting France's "impregnable" Maginot Line in another "Blitzkrieg" attack. With U.S. leanings clearly on the side of Britain and France – the 50,000-airplane program was seen to include quantities for their support – the country's neutrality was bent as far as possible towards helping them.

Further military sales were made with priority deliveries, including 50 biplane Curtiss SBC-4 dive-bombers withdrawn from the Navy – mostly from reserve bases – for the French. Late May and early June saw the evacuation of British forces, and many French soldiers, from Dunkirk back across the Channel, under the most intense air combat of the war up to that time. In June, France fell; with the armistice, German forces occupied much of the country, particularly along the Channel coast, with obvious intentions on England. Italy had meanwhile joined the war on the German side.

Against this background, and in keeping with the president's 50,000-plane program, Congress acted to further increase the armed forces. Naval Aviation would increase to 10,000 planes, with the accompanying carriers and auxiliaries. Considering the lead-time for trained pilots, aircraft, and carriers, major orders were placed for hundreds of training planes, along with large increases for current production combat models, and development and production of more capable advanced models. The first three of a



Capt. William Scarborough

new class of carriers were also ordered.

In July, Germany made its plans to invade England, recognizing that the first step was to eliminate her RAF fighters. This action – subsequently recognized as the Battle of Britain – began in August. Known only to those who needed to, the outcome of this battle would depend on a new "radio direction finding" system, along with supporting fighter direction centers that the RAF had established. Here, the Navy, led by the Naval Research Laboratory, had been pursuing this same "radio" technology on a similarly secret basis. Following trials of an experimental system with the fleet, action was under way on the first carrier installation – aboard *Yorktown* (CV-5). Out of the limelight, the British Tizard Commission visited the U.S., and a top-level exchange took place that month which resulted in major technology advances in both countries – with immediate applications to what would soon be officially titled "radar" by the U.S. Navy.

While the battles in the skies over England and the Channel raged, the first deliveries of their new monoplanes were of much more direct interest to Marine aviation personnel and to those flying and supporting battleship/cruiser seaplanes here. These were Douglas SBD-1 dive-bombers and Vought-Sikorsky OS2U-1s, respectively. The OS2Us, like their predecessors, could be flown as seaplanes or landplanes. Neither had the folding wings that would charac-



Early radar transmitter antennas on forward hull of a PBV-2 for tests in mid-1941 – insulated stubs carried the long antenna wires. Masts on top of rear hull carried the receiving antenna wires for the British radar system.

terize almost all subsequent new shipboard aircraft, and .30-caliber guns were major components of their armament, but they were otherwise typical in construction and basic features of those still to come. That month, a number of older destroyers were converted as seaplane tenders to support the wider ranging PBVs of the VP squadrons in both oceans.

Hitler canceled the German invasion plans in mid-September. The RAF pilots in their *Hurricanes* and *Spitfires*, with the fighter director's guidance based on radar to put them in the right place, had stopped the Luftwaffe's drive to vanquish them.

Casualties were high on both sides, and the margin slim, but the "few" had won the battle. The Luftwaffe was far from beaten, however, and the Blitz of London – night bombing – began. Elsewhere, the war expanded as the Italians, already fighting in North Africa, moved through the Balkans and invaded Greece.

The initial Martin PBM-1s, the first fleet aircraft with power turrets, entered service with VP-55. It was the beginning of a new generation of larger Navy flying boats promising increased performance, armament, and payload over those of the PBVs. Armor protection for patrol plane crew members was also being introduced. And *Yorktown* went to sea with its new radar.

With the trade of U.S. destroyers for bases in British possessions, VP Neutrality Patrol operations extended from Bermuda to Newfoundland, while the first new seaplane tender to support VP operations where bases weren't available, *Curtiss* (AV-4), was commissioned in November.

Two of the Wasp air group's airplanes taxiing at NAS Norfolk in January 1941: the recently delivered VF-71 F4F-3 in the new light gray paint, and an SB2U-2 still in its colorful VS-72 markings.



Capt. William Scarborough

Deliveries of the first of 200 improved PBV-5s ordered in December 1939 also promised to better meet VP squadron needs, and the first PB2Y delivered in December brought new capabilities. For the carrier squadrons, the first SBD-2s, with longer range than the -1s, and the initial F4F-3s were finally being delivered. And the first directive went out to replace the bright colors and markings of Navy combat aircraft with low-visibility paint – light gray overall, except blue/gray on the upper surfaces of patrol planes.

As 1941 unfolded, the war in Europe and Africa continued to escalate. Germany came to the Italians' support in northern Africa and the British were again pushed back towards Egypt. Small, and not so small, "victories" and new thrusts occurred on each side. Across the Pacific, tensions increased as the Sino-Japanese war expanded. The gradual increase in newer model aircraft in Navy fleet squadrons continued. After five months at sea with the new radar, *Yorktown's* C.O. reported its effectiveness and recommended that carriers be equipped with radar, along with special tracking and plotting facilities, and friendly aircraft with electronic identification devices.

By summer, Britain and her allies lost in Greece and Crete while the Middle East was secured. In the Atlantic, Germany's submarine warfare against shipping was causing the latest threat to Great Britain's survival. Lend-lease, initiated in March to provide greater help to those "whose defense was important to U.S. defense," made more military aircraft directly available, by now primarily to British forces. In June came one of the war's great surprises as Germany turned on her partner in the sack of Poland and invaded Russia.

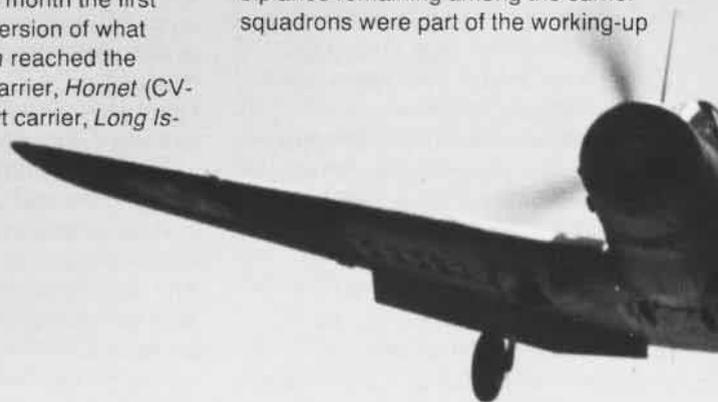
July saw an initial payoff of the Tizard Commission meetings of the previous year as the first PBVs and PBMs of Patrol Wing Seven were fitted with British radar systems.

Awkward as they were in both operation and installation (with their long, separate transmitting and receiving antennas at the low operating frequency, the former on insulated stub supports along the forward hull), they introduced both aircrew and ground personnel to a whole new capability for Navy airborne operations. With increased antisubmarine warfare operations, including those of the RAF Coastal Command and the use of radar, the shipping losses to German submarines and aircraft in the blockade of Britain were greatly reduced, but the submarines began to hunt more broadly.

Recognizing the difficulties of winter-time flying boat operations in the northern Atlantic, and with airfields available from the destroyers-for-bases trade, the Navy acquired 20 Lockheed *Hudsons* from British lend-lease allotments in October as PBO-1s to equip VP-82. With the official naming of U.S. military aircraft, its British name was retained, though this was not done in every case. The next month the first PBV-5A amphibian version of what was now the *Catalina* reached the fleet. Another large carrier, *Hornet* (CV-8), and the first escort carrier, *Long Is-*

*land* (CVE-1), converted from a merchant ship, were commissioned that fall. On the diplomatic front, relations between Japan and the U.S. grew worse and were reaching a standoff climax.

At the end of November 1941, the Navy counted up some 1,500 first-line combat planes in a total inventory of over 2,150 aircraft. The rest were trainers and support aircraft, those in the reserves, and various special-assignment and obsolete aircraft. The 1,500 filled out nine fighter, 14 scout/dive-bomber, and five torpedo plane squadrons in the air groups for the seven carriers, four each Marine fighter and dive-bomber and one Marine observation squadron, 23 patrol, and one scouting squadron for the new escort carrier. Included also were over 500 scout/observation seaplanes for battleship and cruiser operations, with more than half of these actually being used in seaplane training. The few scout/bomber biplanes remaining among the carrier squadrons were part of the working-up



A TBD is waved aboard *Enterprise*.

planes assigned to the new *Hornet* air group. The Marine ones were still flown by the observation squadron.

All the fighters carried four forward-firing .50 guns, the F4Fs having two in each wing while the F2As still carried two of theirs under the cowling, synchronized to fire between the propeller blades – as did the SBDs. While armor and self-sealing tanks were being installed in new production delivered carrier types, they were only beginning to be backfitted into squadron-assigned aircraft. External carriage on the wings was limited to one 100-pound bomb on each side, while the dive-bombers could carry up to one 1,000-pound bomb under the fuselage and the TBDs one MK 13 torpedo.

*Catalinas* made up almost all of the VP inventory – VP-55 with PBM-1 *Mariners*, VP-13 with PB2Y-2 *Coronados*, and the recently formed land-based VP-82 with PBO-1 *Hudsons* being the exceptions. The first PB5Y-5A amphibians were just coming into service with the San Diego-based Transition Training Squadron. Both .50 and .30 guns were fired by the gunners on the flying boats, all manually trained except for the .50s in the PBM and PB2Y power turrets. Maximum bomb loads varied from up to four

1,000-pound bombs on the PB5Ys, to six on the PBMs, and 12 on the PB2Ys. Alternatively, two torpedoes could be carried on any of the patrol planes.

While our Navy's strength was spread across two oceans, the main concern for carrier combat was in the Pacific, looking toward Japan. The make-up of their carrier fleet was known, but the air group inventory remained a question mark. It turned out to be formidable, particularly since it was all available for Pacific operations.

The Japanese carrier force operated in Carrier Divisions, basically each division having a pair of carriers and a complement of aircraft. Three main Carrier Divisions, each with two large carriers, were equipped with the latest aircraft. Each carrier's complement included 18 fighters, and 18 or 27 each torpedo-bombers and dive-bombers. The fighters were Mitsubishi A6M2 Type Zeros of later renown, the torpedo-bomber Nakajima B6N2s which turned out to be considerably more capable than our TBDs, and the dive-bomber Aichi D3A1s whose fixed landing gears contrasted with the otherwise clean lines of all of these Japanese carrier aircraft. While the D3A1 (later code named *Val*) was in all ways inferior to the *Dauntless*, the

*Zero*, like the B6N2 (later *Kate*), would turn out to have combat performance superior to its USN contemporary, the *Wildcat*. Some of this was due to its lighter construction, and it was not equipped with armor or self-sealing fuel tanks. But it was also aerodynamically and structurally a most efficient and effective design.

Two other Carrier Divisions operated a total of three light carriers, each with one smaller squadron of fighters and one of torpedo-bombers – mostly older models at that time. Having a large number of island bases, a considerable number of land-based bombers, reconnaissance aircraft, and fighters were operated from these, plus a limited number of long-range flying boats. Along with these long-range, monoplane seaplanes, a large number of single-engined, short-range biplanes were also operated from the bases, as well as from various ships – and a few small two-place monoplanes from submarines with special watertight hangars.

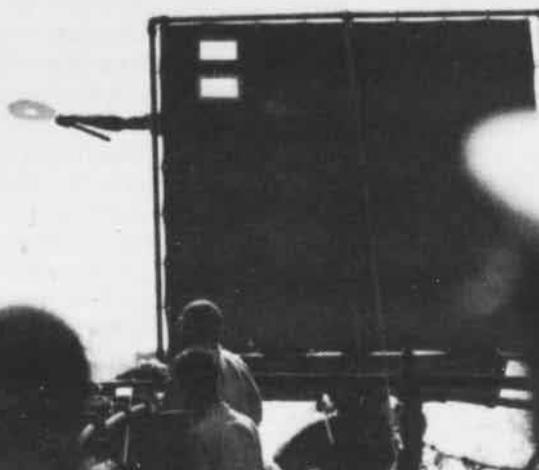
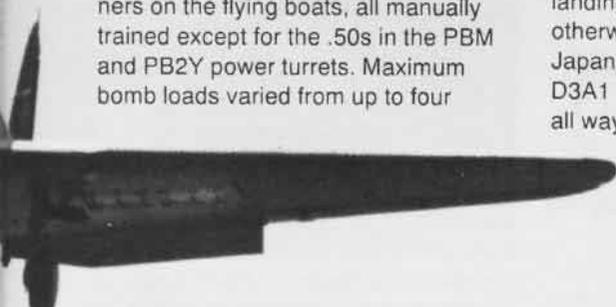
On December 7, 1941, aircraft from the six carriers of the Japanese Navy's First Air Fleet attacked Navy and Army bases in Hawaii. Ready or not, Naval Aviation entered World War II. Fortunately, our carriers were at sea. Significantly, with minimum additions and having lost one carrier in the Battle of Coral Sea, the carriers and aircraft of the U.S. fleet were substantially the same when they handed the Japanese their most important – and worst – defeat of the war at Midway six months later. ■

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## 50 Years Ago – WW II

February 15: The Commander in Chief, U.S. Fleet, noting that reports on air operations in the European war stressed the need for reducing aircraft vulnerability, recommended that naval aircraft be equipped with leakproof or self-sealing fuel tanks and with armor for pilots and observers. Although the Bureau of Aeronautics and Ordnance had been investigating these forms of protection for two years, this formal statement gave added impetus to the accelerated procurement and installation of both armor and self-sealing fuel tanks.

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# If the MALS Can't Provide, the Aircraft Can't Fly!

Story and Photos by Joan A. Frasher

**T**he AV-8B pilot taxiing for takeoff radioed to ground control. When he received a static, garbled reply, he tried to contact the control tower: silence. Then he tried to reach his wingman; nothing. Turning around, he taxied back to the flight line and informed maintenance control that his radio was dead. Maintenance control advised the squadron avionics section and it was determined that the radio was indeed inoperative. The squadron contacted the Marine Aviation Logistics Squadron (MALS) for a replacement radio. The MALS put its machinery in gear and, within an hour, the replacement radio was installed and the pilot was ready to takeoff and

perform his mission.

This quick action took place at the world's largest Marine Corps Air Station – which also claims to be one of the best all-weather jet bases in the world – MCAS Cherry Point, N.C. Located about 200 miles south of Norfolk, Va., and 300 miles north of Charleston, S.C., Cherry Point is the logistics hub for Commander, Marine Corps Air Bases, Eastern Area, the headquarters of the Second Marine Aircraft Wing (2nd MAW), and the site of a Naval Aviation Depot. The air station provides supply and support services to MCAS Beaufort, S.C., and MCAS New River, N.C. Cherry Point Supply and the Naval Aviation Depot

support aircraft throughout the Navy and Marine Corps, not just to the 2d MAW.

Within the 2d MAW, each Marine Aircraft Group (MAG) is supported by a MALS, which combines aviation supply and maintenance functions. Colonel Don Davis, Assistant Chief of Staff for Aviation Logistics, 2d MAW, stated, "Aviation logistics is a community within Marine Aviation which provides total support: aviation supply, aircraft maintenance, aviation ordnance, and avionics." He emphasized that "The MALS is the core, a nucleus organization capable of providing common support to aircraft – fixed and rotary wing."

When the Marine Corps is called upon to deploy it is usually accomplished by forming a Marine Air Ground Task Force (MAGTF) that consists of four elements: a command element, a ground combat element, an aviation combat element, and a combat service support package.

To form the Aviation Combat Element (ACE), aircraft squadrons/units (both fixed and rotary wing) are identified from within their parent MAGs to

An EA-6B of VMAQ-2 being repaired in a hangar at MCAS Cherry Point, N.C.

join onto a designated MALS or a MALS Support Element. Large MAGTF ACEs usually consist of two MALS, one capable of providing common intermediate support to fixed-wing aircraft and the other MALS providing the same support to rotary-wing aircraft. The significance of two MALS is to provide the ACE the capability to support 135 to 220 aircraft and also to operate independently at two separate airfields. Smaller MAGTF ACEs can be supported by combined elements of different MALS – designated MALS Support Elements.

The MALS alone is capable of providing only common aircraft support. So as the ACE is formed with various types of aircraft, the peculiar support from the parent MAG/MALS must be provided. In the event of a

contingency when nonorganic aircraft are attached to a MAG, the peculiar support for these aircraft is identified and provided in the form of a support package. These contingency support packages are assigned to the MALS and, when combined with the common support already resident in the MALS, they provide complete intermediate-level aircraft maintenance and component repair. The common packages are provided to the ACE from the designated fixed-wing and rotary-wing MALS, and the peculiar packages come from the parent MAG/MALS which provides the aircraft to the ACE.

The contingency support packages are comprised of intermediate-level support and test equipment, aircraft components, and repair parts which are housed in mobile facilities. These vans, which measure 8 x 8 x 20 feet, can be used alone or coupled with other vans to form a maintenance complex. Electricity is provided by auxiliary generators. The MALS C.O. has the responsibility to provide the equipment, parts, vans, and personnel for all MAGTF deployments.

The 2d MAW flies F/A-18A, A-6E, AV-8B, TAV-8B, EA-6B, OA-4M, KC-130 (F and R models), and OV-10 (A and D models) fixed-wing aircraft and CH-46E, CH-53 (D and E models), UH-1N, AH-1T, and AH-1W helicopters. With so many aircraft to support, aviation logistics is bound to be a problem. But the Marine Aviation Logistics Support Concept when deployed and employed properly will meet the challenge.

The Marine Corps maintains a program called Maritime Prepositioned Force (MPF) ships, which consists of 13 container ships broken down into three squadrons (two with four ships each, and one with five ships). The squadrons are globally positioned and only make port for reprovisioning or maintenance. The MPF ships contain enough equipment to outfit a Marine Expeditionary Brigade, including organizational-level equipment required to provide launch/recovery and flight line support to the brigade's ACE. However, because of cost constraints no intermediate-level support is aboard the MPF ships. Within the Marine Aviation Logistics Support Concept, two programs have been developed to ensure that interim and

sustained aviation logistics support is provided to the ACE: the Fly-in-Support Packages (FISPs) and the Intermediate Maintenance Activity (IMA) ship, or TAVB.

When aircraft are initially deployed and joined by the organizational equipment from the MPF ships, interim supply support is provided by the FISPs, or parts packages, that accompany the aircraft when they fly to the deployment site. The MPF equipment and the FISPs allow squadron personnel to repair aircraft on the flight line by removing and replacing bad components. The FISP is designed to provide parts for approximately 10 to 30 days of combat flying hours. Within that window, the TAVB should arrive in the deployed area and be capable of providing sustained supply and component repair to the ACE.

The TAVB is a ship designed to transport the contingency support packages; thus, when the ACE deploys, the TAVB is activated and loaded with intermediate-level equipment to support the aircraft in the MAGTF. The TAVB is capable of being configured so that a partial intermediate maintenance activity can be operated onboard. Therefore, when the TAVB arrives at the deployment site and cannot offload the IMA ashore, in-stream support can be provided. The TAVB would then be loaded with approximately 300 vans, of which 187 would be activated (powered) to provide limited IMA support to the ACE. If it is determined that in-stream support is not required and that ashore site(s) will be available for the TAVB when it arrives, the ship can be loaded with as many as 600 vans.

The Marine Aviation Logistics Support Concept using the MALS, FISPs, contingency support packages, and the TAVB is very flexible and can be adapted to many other scenarios, such as the one described above.

The preplanning in the support logistics area ensures an easier evolution in a shorter length of time. This is what aviation logistics is all about. Prior proper planning prevents poor performance. Preplanning and availability of supplies are what will turn the AV-8B pilot's downtime into no time at all – at MCAS Cherry Point or deployed in a contingency.

If the MALS can't provide, the aircraft can't fly! ■



Sgt. R. C. Werts (left) and LCpl. A. W. Pajak work at an electronics bench located in a mobile van.



A series of mobile vans grouped together to form a maintenance complex.

## Association of Naval Aviation Bimonthly Photo Competition

These photographs won honorable mention in the final 1989 bimonthly Association of Naval Aviation Photo Contest. PH1(AC) Stephen P. Davis, Fleet Imaging Command, Atlantic Combat Camera Group, took the photo of a C-2A *Greyhound* flying over the NS Norfolk, Va., piers, right. Lt. Greg Lotz, VFA-151, captured a VAW-115 E-2C on the starboard catapult aboard *Midway* (CV-41) in the South China Sea, bottom left. Hong Kong's city lights are reflected from the Seventh Fleet's SH-3G *Sea King* "Blackbeard 01" on board *Blue Ridge* (LCC-19), bottom right, filmed by CW03 David L. Morton, NAESU Detachment, MCAS Beaufort, S.C.





**Anniversaries**

**Naval Reserve Detachment 282**, NAS Whiting Field, Fla., is celebrating its 10th anniversary. Det. 282 is unique in that it is comprised solely of selected reservists. These particular Naval Reserve aviators have chosen to drill as flight instructors in the Naval Air Training Command.

**Midway** (CV-41) celebrated her 44th birthday on September 10, 1989. Built during WW II to fill the need for carrier air power in the Pacific theater, she was named for the Battle of Midway which marked a turning point in the war and proved conclusively the primacy of Naval Aviation. Intended to be a battle carrier, she sailed from Norfolk, Va., in October 1945 on her maiden voyage as the largest warship in the world and remained so for a decade.

Her armament included 18 five-inch guns and 37 aircraft. Today she boasts two surface-to-air missile launchers, various self-defense machine guns, and over 60 aircraft.

**Kudos**

**Sgt. Edwin Jimenez** of VMA-211, MCAS Yuma, Ariz., earned the title of Marine Corps Plane Captain of the Year.

"A plane captain is the key to getting a jet off the ground," said Jimenez. "It is up to him to ensure the total safety of that aircraft before it takes off."



**Sgt. Edwin Jimenez** preflights an A-4M Skyhawk.

LCpl Scott A. Tynes

**VFA-25** won the Michael J. Estocin Award for 1988. Established by McDonnell Douglas Aircraft Corporation to recognize the best *Hornet* squadron in the Navy, the award is named after a famous Naval Aviator who fought in Vietnam and won the Medal of Honor. LCdr. Estocin was singled out by his superiors for his knowledge, tenacity, and uncompromising drive to accomplish a mission.

Three Naval Aviators in training recently received awards for their outstanding achievements:

**Ens. Sean P. Murry** received the Orville Wright Achievement Award, sponsored by the Daedalian Foundation, for achieving the highest overall grades in a six-month period. He is assigned to VFA-125 for training in the F/A-18 *Hornet* at NAS Lemoore, Calif.

**Ltjg. Steve E. Harfst** received the American Fighter Aces Association's Capt. David McCampbell Award, which recognizes the student pilot who displays the best performance in air combat maneuvering (ACM). He is assigned to VF-124 where he is training in the F-14 *Tomcat* at NAS Miramar, Calif.

**1st Lt. Jeffrey R. Woods** received the Major Joseph Foss Award and is assigned to VMFAT-101 training in the F/A-18 *Hornet* at MCAS Yuma, Ariz. This award is presented annually by the American Fighter Aces Association to the top new Marine pilot who displays outstanding ACM skills, exhibits exemplary qualities of leadership, integrity, and devotion to duty.

This year's LCdr. Michael G. Hoff Attack Aviator of the Year Award was presented to **Lt. Martin Francis O'Loughlin** of VFA-151. Lt. O'Loughlin won the award for exceptional airmanship, tactical innovation, and dynamic leadership as the assistant operations and weapons training officer for VFA-151.

The award is named for LCdr. Hoff of VA-86, who was listed missing in action in 1970 after failing to return from a combat mission flown from *Coral*

*Sea* (CV-43) over Southeast Asia.

Marine Corps aviator **Capt. Paul F. Skopowski** received the System Excellence Award, sponsored by AIL Systems, Inc., for his efforts toward the increased utilization of the ALQ-99 tactical jamming system carried aboard the EA-6B *Prowler* electronic warfare aircraft. Capt. Skopowski is the EA-6B Tactics and Special Projects Officer attached to ComMATVAQWingPac.

**Records**

On one of her Indian Ocean deployments, **Midway** (CV-41) recorded her 200,000th catapult launch. A steam-



**A-6E Intruder #400** at the ready on the port cat aboard *Midway*.

powered catapult is like a mechanical animal – a powerful, surging, screaming animal made of steel, fed by steam and seething with hydraulic fluid, which can shoot a 56,000-pound bomber down an 80-meter track at 135 miles per hour in 1.5 seconds.

The 200,000th cat launch from *Midway's* deck dates from 1972 when she emerged from a major overhaul that included the installation of new steam catapults which replaced the old hydraulic ones.

**Records**

Several units marked **safe flying time**:

- PatWingsLant, 950,000 hours and 11 years
- HT-18, 424,000 hours and 9 years
- VP-30, 245,060 hours and 25 years

StrkFitWingLant, 200,000 hours and 2 years  
 HMX-1, 200,000 hours and 23 years  
 NavAiResFor, 195,000 hours and 1 year  
 VP-56, 170,253 hours and 25 years  
 VT-3, 150,000 hours and 3 years  
 VS-33, 135,192 hours and 29 years  
 VS-29, 74,400 hours and 18 years  
 HS-10, 70,750 hours and 13 years  
 VF-301, 61,625 hours and 19 years  
 VP-6, 56,000 hours and 9 years  
 VA-304, 52,189 hours and 15 years  
 PMTC, 50,400 hours and 8 years  
 VMA(AW)-332, 42,000 hours and 10 years  
 HSL-41, 41,000 hours and 6 years  
 VA-46, 34,000 hours and 7 years  
 PacMisRanFac, 32,590 hours and 18 years  
 VAQ-132, 31,600 hours and 19 years  
 SOMS MCAS, Kaneohe Bay, 30,000 hours and 17 years  
 VS-37, 30,000 hours and 7 years  
 HS-5, 28,110 hours and 9 years  
 HMH-362, 27,000 hours and 7 years  
 VMA-513, 26,000 hours and 6 years  
 NAS Whidbey Island, 25,300 hours and 9 years  
 VA-72, 25,000 and 6 years  
 VMFA-212, 25,000 and 6 years  
 VA-37, 22,780 hours and 5 years  
 VF-142, 22,628 hours and 6 years  
 NAS Oceana, 22,340 hours and 16 years  
 NAS Dallas, 21,300 hours and 19 years  
 HC-11, 20,300 hours and 2 years  
 VAQ-34, 20,000 hours and 6 years  
 VR-60, 20,000 hours and 6 years  
 VA-55, 20,000 hours and 5 years  
 HMH-361, 20,000 hours and 4 years  
 VMFA-314, 20,000 hours and 3 years  
 HMM-268, 20,000 hours and 3 years  
 HSL-32, 17,250 hours and 3 years  
 VMA-224, 15,000 hours and 4 years  
 HS-17, 14,000 hours and 4 years  
 VF-211, 11,600 hours and 3 years  
 VAW-115, 9,400 hours and 4 years  
 VMAQ-4, 9,100 hours and 7 years  
 VA-52, 8,700 hours and 2 years  
 VF-11, 7,661 hours and 2 years  
 VAW-78, 7,350 hours and 4 years  
 HSL-37, 6,700 hours and 1 year  
 HSL-35, 6,600 hours and 1 year  
 VA-155, 6,383 hours and 2 years

VF-74, 6,100 hours and 2 years  
 VAQ-140, 5,821 hours and 4 years  
 VF-2, 4,080 hours and 1 year  
 VA-203, 3,300 hours and 1 year  
 VF-143, 3,100 hours and 1 year  
 VMGR-452, 1,789 hours and 1 year  
 HSL-40, 14 years  
 HAL-4, 13 years  
 VR-52, 13 years  
 VR-56, 13 years  
 VP-8, 11 years  
 VP-92, 11 years  
 VA-46, 7 years  
 VFA-86, 5 years  
 VR-62, 4 years  
 HS-17, 4 years and  
 VF-302, 3 years.

### Rescues

An S-3 *Viking* crew from **VS-30**, NAS Cecil Field, Fla., found a disabled fishing boat in the Atlantic Ocean off St. Augustine, Fla., and aided in the rescue of two Bahamian fishermen adrift for three days. A third man fell overboard earlier and was presumed dead.

The crew spotted the boat while flying a search pattern off *Saratoga* (CV-60). They marked the location of the 18-foot boat with smoke flares and directed *Philippine Sea* (CG-58) to the rescue.

The survivors said the missing man fell overboard trying to untangle an anchor line from the propeller of the boat's outboard motor. They said it took two days in the stormy weather to untangle the line, allowing the boat to drift 150 miles north before the S-3 crew spotted them about 82 miles from St. Augustine.

An **HS-10** crew on a training mission in the new SH-60F *Seahawk* on October 5, 1989, rescued two Naval Aviators near Imperial Beach, Calif. At the scene of the downed TA-4 pilots, Lt. Ed Harrison, the helo pilot, lowered AW1 Ronald Bondurant into the water to perform the rescue. He swam 15 yards to reach the pilot in his raft who appeared to be in good physical condition. He then secured the pilot and signaled to hoist them both up. The

second pilot was rescued by an aircraft from HC-1.

### Honing the Edge

The crew of the **STS-41** mission, scheduled for October 1990, will be commanded by Navy Capt. Richard N. Richards. Marine Lt. Col. Robert D. Cabana has been named as pilot. Mission specialists are Navy Capt. William M. Shepherd, USCG Cdr. Bruce E. Melnick, and USAF Maj. Thomas D. Akers. Melnick and Akers will become the first of the astronaut class of 1987 to fly in space. At an orbital altitude of 160 miles, the crew of *Atlantis* will deploy the space probe *Ulysses* on its way to a major solar science mission in polar orbit around the sun, providing a look at regions not visible from earth.

### Scan Pattern



PH2 John Cross

Actor **Brian Johnson**, who will play Lt. Jake Grafton, the lead character in Paramount Pictures' "Flight of the Intruder," receives a brief from AMS3 Brian Buche of VA-196 in the cockpit of an A-6 Intruder. The actor was onboard *Constellation* (CV-64) for a familiarization visit for his upcoming role as a Naval Aviator.

The Navy's Flight Demonstration Squadron, **Blue Angels**, have selected five new aviators for its 1990 squadron. Demonstration pilots are LCdr. David Inman, Marine Capt. Chuck Mosely, and Lt. John Foley. The new C-130 *Hercules* pilot is Marine Capt. Scott Larsen and the maintenance officer is Lt. Tom Schamberger.

The **Weapons Department's G-3 Division** on *Carl Vinson* (CVN-70) is



JO2 Shawn A. Saucier

**AOAN Ismael Adams checks the bar codes on unassembled weapons.**

in charge of the magazines that are used to store the ordnance for CVW-15 and the carrier's own weapon systems. It runs a highly synchronized assembly production plant which has the capability to rapidly arm the ship's air wing at anytime.

There are over 30 storage magazines containing over 2,000 tons of ordnance currently stored in the ship's magazines. For safety purposes, the bombs come in parts and are constructed in the assembly line when a load plan or bomb order comes in.

**The National Museum of Naval Aviation**, Pensacola, Fla., formerly known as the Naval Aviation Museum, officially changed its name on July 1, 1989. It is one of three federally sanctioned aviation museums.

The new name will elevate the museum to national status alongside two others: the U.S. Air Force Museum in Dayton, Ohio, and the Smithsonian's National Air & Space Museum in Washington, D.C.

While performing routine duties as an aircrewman aboard a Navy UC-12M passenger plane, **AEAN Darryl Hefflefinger** made an important decision in his Navy career. Hefflefinger's aircraft cleared the runway and taxied onto a ramp at an airfield in the Mediterranean. While the UC-12M awaited a taxi director, Hefflefinger spotted a vehicle moving

toward the plane. He then noticed that the vehicle was driverless and not slowing as it headed for his aircraft.

Hefflefinger urged the pilot to take evasive action; he then jumped out of the plane and pursued the maverick vehicle on foot. He was able to run it down only to discover the vehicle was tightly secured, out of gear, and minus a set parking brake.

Relying only upon his strength and determination, Hefflefinger grabbed hold of the rear of the vehicle and cautiously slowed it to a stop and held it in place until several ground crew personnel chocked the wheels of the vehicle.

After returning to NAS Sigonella, Italy, and to his duties with the Operations Maintenance Department, Airman Hefflefinger received his wings designating him an aircrewman.



**AEAN Darryl Hefflefinger kneels beside a UC-12M similar to the one saved by his quick thinking.**



**"Look, Ma, no hands!" The deadload leaves the flight deck of Abraham Lincoln (CVN-72) with a smooth trajectory. Naval Air Engineering Center Test Department personnel at Lakehurst, N.J., are onboard closely monitoring the performance of the catapult equipment.**

FACE



**An F/A-18 Hornet of VFA-113 refuels from a KA-6D tanker of VA-196. Both aircraft are stationed onboard Constellation (CV-64) with CVW-14.**

## Change of Command

*America*: Capt. John J. Mazach relieved Capt. J. J. Coonan, Jr.

HAL-4: Cdr. E. H. Frazier, Jr., relieved Cdr. Wilbur Edwards, Jr.

HelSeaConWing-1: Capt. Loring B. Nichols relieved Capt. J. Lawrence Hilgeman.

HS-6: Cdr. Nicklous J. Ross relieved Cdr. Murat Shekem.

HS-9: Cdr. William S. Kordis relieved Cdr. Don A. Nestor.

HS-17: Cdr. Russell E. Tate relieved Cdr. David M. Crocker.

HSL-35: Cdr. Richard K. Mayne relieved Cdr. Kenneth T. Marion.

HT-8: Cdr. John B. McGill relieved Cdr. James F. Mader.

NAR Memphis: Capt. William J. DiFilippo relieved Capt. Kenneth A. McCluskey.

PMRF: Capt. Thomas E. McFeely relieved Capt. Robert E. Curtis.

StrkFightWpnsScolant: Cdr. John H. Matlock relieved Cdr. John R. Stevenson.

VA-35: Cdr. James B. Andersen relieved Cdr. James A. Bolcar.

VA-75: Cdr. Robert E. Besal relieved Cdr. John T. Meister.

VAW-124: Cdr. J. R. Neff relieved Cdr. W. L. Carter.

VF-33: Cdr. Dale O. Snodgrass relieved Cdr. Ronald J. Edington.

VF-41: Cdr. Kenneth F. Heimgartner relieved Cdr. E. Scott Shuman.

VFA-192: Cdr. Michael D. Shutt relieved Cdr. John A. Pettitt.

VP-47: Cdr. Frederick S. Gay relieved Cdr. Martin Hill.

VP-56: Cdr. C. Max Lindner III relieved Cdr. Stewart R. Barnett III.

VR-55: Cdr. Steve Zandstra relieved Cdr. Gary Oleson.

VR-58: Cdr. Dennis R. Mills relieved Capt. Darvin E. Beedle.

VR-62: Cdr. John M. King relieved Capt. William G. Kuester.

VQ-4: Cdr. Jon V. Shay relieved Cdr. Kermit A. Ayres.

NAEC

# Look Who's Talking

By JO2 Milinda D. Jensen

It's nice to know that our readers like what they read in *Naval Aviation News*. The results of the most recent readership survey shows that over 90 percent think the magazine is a good to outstanding vehicle for Naval Aviation information. The biennial survey is one of the ways that *NANews* editors and writers find out what the aviation community wants to read about.

As one reader put it, "I read every issue cover to cover and enjoy every article. Keep up the good work!" While we realize that most readers don't read the magazine cover to cover, they are enthusiastic about it: "This is

my only link to Naval Aviation since I retired, so I really appreciate what a great publication you're putting out!" "You know I like it. I pay for it!"

From the 593 survey cards returned, it seems that "Grampaw Pettibone" is still the hands-down favorite of most readers. Feature articles came in a close second, followed by the popular department, "People, Planes and Places."

The survey results indicate that over 65 percent of our readers are pilots, with aircrew and history buffs comprising the other 35 percentile. Our distribution spans an audience from the U.S. Navy, Marine Corps, Army, Air Force, government and

civilian communities, to foreign service pilots. The majority of these readers are mid-to-late career officers and middle-management enlisted members.

According to the survey results, our readers would like to see more coverage on naval aircraft, squadrons, history, and aviation ships.

The survey results will help to enhance future issues of *NANews* by providing a valuable tool for our staff members.

The *Naval Aviation News* staff welcomes your input on story ideas, photos, and feature articles, as well as comments and criticisms. ■

## WEATHER FRONT

By Capt. Neil F. O'Connor, USN(Ret.)

### Altimetry



Most of us are familiar with the aneroid barometer stocked in the home section of the Navy exchange and often advertised as "the ideal gift." And although it is not carried in the exchange, the altimeter is essentially an aneroid barometer. Actually there is only a superficial difference: the scale on the outer edge of the aneroid barometer displays units of pressure, while the altimeter scale shows altitude in feet. Another similarity is the ability to reset the instruments. An adjustable pointer on the face of the barometer is periodically set to allow the owner to detect the rise or fall of pressure, while the altimeter is reset before each flight to provide the pilot with an accurate measurement of the instrument (hence the aircraft) above the earth's surface. The altimeter is normally adjusted to

ground level above sea level using the local pressure setting provided by the weather office or tower. The installed pressure setting is visible through a tiny window on the instrument. And in case you ever wondered why the elevation of an airfield is so prominently displayed on most air operations buildings – it's an aid to altimetry, not a geological quirk.

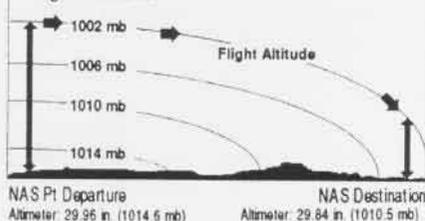
Altimeter reliability depends upon periodic in-flight adjustments by the pilot. Unless correct pressure settings are frequently cranked into the altimeter, particularly in lengthy cross-country flights, incorrect altitude readings will occur. Errors of indicated altitude are most frequent on north-south flight tracks in

wintertime when pressure gradients are greatest. Errors also occur to a lesser extent during the transitional months of spring and autumn. For example, flying into a low-pressure area will cause the altimeter to indicate a higher altitude than the plane is actually flying – a condition with obviously dangerous possibilities. Flying into an area of higher atmospheric pressure will have the opposite effect. The altimeter will give an indication of a lower altitude than the aircraft is actually flying.

Keep your altimeter setting current to ensure your reading is compatible with other aircraft in your airspace. Also, adjust the altimeter frequently to the pressure setting reported by the nearest control tower or weather reporting station in a frontal zone or area of rapidly changing weather.



When flying from high pressure to an area of low pressure without adjusting the altimeter, the aircraft is losing true altitude.



## PROFESSIONAL READING

By Cdr. Peter Mersky, USNR-R

Blackburn, Tom. *The Jolly Rogers: The Story of Tom Blackburn and Navy Fighting Squadron VF-17*. Orion Books, 225 Park Ave. S., New York, NY 10003. 1989. 288 pp. Illustrated. \$22.95.

With a forward by VAdm. James Stockdale, this autobiographical account of one of the Navy's premier fighter squadrons of WW II provides major information on the Pacific War. It is written by retired Capt. Tom Blackburn, leader of VF-17 and an 11-kill ace, who describes the early training in Norfolk, Va., and the initial combat in late 1943 and early 1944. He also candidly discusses his feelings on being the skipper, running the squadron, and flying and fighting the *Corsair*.

Some of the photos are well-known, and the writing occasionally suffers from using words such as "inchoate," where a simpler phrase would do. When talking about squadron tactics, the author refers to a Lt. Tetsuzo Iwamoto as "the top Zero ace of the time." I have never seen his name on any list of Japanese aces.

One surprise for the reader will be Blackburn's matter-of-fact revelation that he and his squadron strafed enemy pilots who had bailed out, a practice usually disavowed by American pilots. Wartime memoirs vary in quality and freshness of presentation. *The Jolly Rogers* is a good look at a top combat squadron by the man who put it together and kept it together during heavy combat.

Ethell, Jeffrey and Alfred Price. *One Day in a Long War: May 10, 1972, Air War, North Vietnam*. Random House, 201 E. 50th St., New York, NY 10022. 1989. 217 pp. Illustrated. Appendices. \$18.95.

As most people with an interest in the Vietnam conflict know, May 10, 1972, brought the heaviest aerial action of the war. Eleven North Vietnamese MiGs were downed, eight by Navy F-4s. It was the day that saw the first U.S., and the only Navy, aces emerge with the only triple kill of the war.

Known more for their books on USAAF and USAF aviation, the authors turn their attention to the joint service effort in Vietnam during this one hectic 24-hour period. But although the book is well researched, and sheds new light on many areas, it is also decidedly slanted toward the USAF. Only one of the 11 chapters deals specifically with the Navy, though Navy crews accounted for most of the historically significant actions of the day.

While several maps and diagrams complement the narrative, the two short photographic folios fall short, both in interest and freshness, and are weighted toward the Air Force.

These objections aside, *One Day in a Long War* is a good effort and brings this pivotal day into sharp focus for the casual reader and researcher.

## AWARDS

### Marine Corps Aviation Association

The Marine Corps Aviation Association presented the following awards for 1989:

Alfred A. Cunningham Aviator: Lt. Col. Robert J. Garner, HMM-268.

Robert G. Robinson Naval Flight Officer: Capt. Mark F. McKeon, VMA(AW)-332.

Aviation Ground Officer: Lt. Col. John F. Torsak, 3d MAW.

Air Command and Control Officer: Capt. Dale L. Kratzer, MACG-28.

Bud Baker V/STOL Enhancement: Maj. Charles S. Patton, VMA-331.

Aviation Electronic Technician: Cpl. Lansden R. Good III, HMM-162.

Air Command and Control Marine: Sgt. Timothy J. Didas, 2d MAW.

Fixed-wing Aircrewman: Sgt. Scott S. Steele, VMGR-352.

Helicopter Aircrewman: Sgt. David A. Brown, HMM-162.

Plane Captain: Sgt. Edwin Jimenez, VMA-211.

James Maguire Enlisted Aviation Safety: GySgt. Jimmie D. Bowling, HMM-266.

James E. Nicholson Enlisted Leadership: MGySgt. Robert D. Targett, MALS-12.

Exceptional Achievement (Individual): GySgt. Mallie F. Elkins, Jr., MALS-16.

Commandant's Aviation Efficiency Trophy: VMFA-251.

Robert M. Hanson Fighter/Attack Squadron: VMFA-451.

Lawson H. M. Sanderson Attack Squadron: VMA(AW)-224.

Keith B. McCutcheon Helicopter Squadron: HMM-261.

Edward S. Fris Air Command and Control Unit: MASS-2, 1st MAW.

Pete Ross Safety: VMAQ-4, MAG-42.

### Silver Hawk



On October 31, 1989, Lt. Gen. John I. Hudson transferred the title of Silver Hawk to Gen. Joseph J. Went, Assistant Commandant of the Marine Corps. The award recognizes the Marine Aviator on active duty with the earliest date of designation. The trophy, donated by McDonnell Douglas Aircraft and retained by the Marine Corps Aviation Association (MCAA), is a granite block – adorned with Naval Aviator wings and an MCAA medallion – crowned by a silver eagle. A plaque bears the names of awardees.

## WW II Series

I congratulate you on your two-part article in the WW II series, "Ready to Mobilize" (*NANews*, Sep-Oct and Nov-Dec 89). It is well organized and gives a very good history of Naval Aviation in its crucial early years, of which every naval officer should be aware. I regret to say, though, it has been my experience that a surprisingly large percentage of naval officers of all ranks are woefully ignorant of this period and its great significance in U.S. and world history. Thanks for the pleasure of reading the article.

RAdm. William A. Moffett, USN(Ret.)  
3011 Larkspur Run  
Williamsburg, VA 23185

I enjoy my *Naval Aviation News* subscription and have subscribed for many years. I'm looking forward to the WW II series and hope for accuracy from your contributors. I enjoyed most of "Ready to Mobilize," Parts 1 and 2.

Patrol aviation's first paragraph on page 22 (Sep-Oct 89) had the Navy's usual erroneous line when it stated, "But the PBYs formed the core of patrol aviation throughout the war...." The previous sentence said that the Martin *Mariner* had rendered creditable service. This is another reflection of only the first two years of the war and complete disregard for the final 21 months, when the PBM *Mariners* were the only seaplanes to fly patrols at the invasions of Saipan, Palau, Iwo Jima, and the greatest seaplane operation in all of history at Okinawa. No PBYs flew combat patrols in any of these great assaults. One squadron of PB2Y *Coronados*, VPB-13, also flew patrols at Okinawa. PBYs only flew in the southwest Pacific and shared duties with PBMs in the liberation of the Philippines.

I and every PBM pilot have the greatest respect for the PBY and its highly publicized and richly deserved accomplishments. It was our trainer. The real workhorse seaplane of WW II for the U.S. Navy must have been the stronger, sturdier, more capable Martin *Mariner*. It remained as our Navy's only patrol seaplane until the fifties. At Okinawa, five patrol squadrons (VPBs 18, 21, 26, 27, and 208), along with five VH air-sea rescue squadrons

equipped with PBMs, combined with the one PB2Y-5 VPB-13 to form the greatest seaplane operation in history.

I know there will be other segments in the WW II series on patrol aviation, and I hope that the entire war will be covered. The first 16 *Mariner* squadrons with secret radar worked only in the Atlantic against the deadly Nazi subs, during 1942-43, usually in rather deep secrecy. I look forward to this article.

Bob Smith  
6468 West 85 Place  
Los Angeles, CA 90045

## Cruisebooks Needed

During the night of October 15, 1989, the Navy Department Library suffered extensive water damage to its collections when a water pipe burst in the building in which it is housed. The cruisebook and foreign navies sections were most affected. Prompt action by the library's staff and military and civilian personnel of the Naval Historical Center helped prevent the total loss of approximately 4,500 volumes. About 80% of the items are salvageable, although most will have to be rebound.

The library would welcome donations of cruisebooks, for all time periods, for ships whose names begin with the letters C through F. Please send the books to the Navy Department Library, Bldg. 44, Washington Navy Yard, Washington, D.C. 20374-0571.

## ICEX-1-89

I enjoyed JO2 Jensen's article, "ICEX-1-89: Survival in the Arctic," *NANews*, September-October 1989, and I thought you would be interested to know that it elicited several responses from your readers. As we prepare for ICEX 90, I have received many

phone calls offering suggestions, assistance, or information about the various concerns expressed in the story. This has resulted in a close working relationship with several Navy labs which have developed solutions to the problems or desire to test possible solutions, particularly the issue of protective clothing and aircraft shelters. ICEX 90 will evaluate and test several types of clothing and shelters.

We look forward to this year's operations and the presence of *Naval Aviation News* on the frozen frontier.

LCdr. W. L. Cox  
ComPatWing-5  
NAS Brunswick, ME 04011

## Reunions, Conferences, etc.

**Battle of Iwo Jima reunion**, February 22-24, Mayflower Hotel, Washington, DC 20036. Contact John Daskalakis, (201) 920-6458.

**Naval Helicopter Association Symposium**, March 27-31, Town and Country Hotel, San Diego, CA. Contact NHA National Office, (619) 435-7139.

**VP/VPB-213 (WW II) reunion**, April 4-7, Arlington, VA. Contact Norman H. Maffit, 14709 Carlos Cir., Rancho Murieta, CA 95683, (916) 354-2219.

**VT-305/VB-305 (Solomons, 1944) reunion**, April 6-9, Crystal City Marriott Hotel, Arlington, VA. Contact Robby Roberts, 1818 E. Missouri Ave., Phoenix, AZ 85016, (602) 265-5214.

**Flying Midshipmen (1946-50) reunion**, April 4-8, Washington, DC. Contact Orton Rudd, P.O. Box 15489, Arlington, VA 22215, (703) 892-1400.

**North China Marines/Navy (1945-49) reunion**, April 11-27. Contact Robert Burns, HCR 66, Box 342, Yellville, AR 72687.

## The Association of Naval Aviation Photo Contest

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.

