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Flight of the Intruder

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COVERS–From the flight deck of USS *Independence* (CV-62), an A-6 *Intruder* is set to launch into the silver screen as Stephen P. Coonts' best-selling novel, ***Flight of the Intruder***, makes its film debut in July (Photo by JO1 Jim Richeson). Back: Marine Capt. Richard Mullen, HMH-464, MCAS New River, N.C., won the 1989 ANA Photo Contest with this shot of a paradrop from a CH-53E over Camp Lejeune.

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Squadron Command: Just the First "Plum"

By VAdm. Dick Dunleavy, ACNO (Air Warfare)

The goal of every one of our red-hot young pilots and naval flight officers (NFOs) should be – must be – COMMAND...the ultimate assignment of leadership and responsibility. Everyone that walks in the door at flight school is a potential commanding officer, and the selection process starts immediately. There is an abundance of support along the way; every feature of our assignment system is designed to help each one of them fulfill that ambition. But talent abounds, so the competition is fierce.

The good news is that there is a broadened opportunity, starting with the initial squadron command. In most communities that opportunity is considerably greater than it was when I was a JO, in part because we have more squadons. Then, carrier air wings were composed of five or six squadrons and four to six "cats and dogs" detachments. Today, with the exception of the VQ elements, each unit in the wing is a separate command, providing the greater flexibility of unit employment that our modern forces need.

For example, in 1965, there were only four large deploying VAW squadrons; in their place we now have 26 VAW and VAQ fleet squadrons. In 1965, we had 14 fleet helicopter squadrons; the explosive growth in the role of helicopters in naval warfare has now increased that force to 36 separate deploying HS, HSL, HC, and HM squadrons.

Command opportunity is also more open because of changes in law and policy. In 1970, Congress opened the door for NFOs to command aviation units. From that, I was privileged to become the first NFO to command a carrier and Ben Hacker was the first NFO to reach flag rank. The first class of women aviators, winged in 1974, will see one of its number, Commander Rosemary Mariner, achieve squadron command this summer. Captain Jim Drager recently became the first helicopter pilot selected to command an aircraft carrier. The barriers are falling and the opportunity to reach that goal we all aspire to is increasingly greater...but remember: performance remains the key.

Squadron command is a "plum" that will go only to the best – and it's a fantastically fulfilling privilege, not a burden. If you aren't having fun headed toward that goal, and if you don't have fun as a C.O., you're not doing it right. That ultimate of success and the placement of such trust in an individual is the most exhilarating thing that can happen in one's career!

Squadron command is the fulfillment of only the first of the possible goals for those who succeed...it is only the beginning, the first "plum" for the best of the best. The real challenge just begins at the squadron command level.

The squadron C.O.'s form a pool of tested talent from which the leadership of Naval Aviation, and much of the Navy, is drawn. Many go on to become fleet replacement or test and evaluation squadron commanders, air wing commanders, air station C.O.'s, carrier skippers, carrier group commanders and, then, on to type, joint, and fleet commanders. The depth and breadth of experience and education needed to succeed in those positions takes a great deal of effort and time to develop. Those who succeed are the ones who take the opportunities presented to all of us and who then put quality time into them. To help with that process so that we can maintain a young, vigorous leadership and to allow us more time to groom that leadership for major command, joint command and flag selection, we are working to push the age of our squadron C.O.'s down to 36-38 years.

Those of you selected for squadron command will experience the awesome privilege of leading the outstanding men and women of Naval Aviation – with a level of satisfaction found absolutely nowhere else. Enjoy getting there. Then, enjoy your tour, do a good job, and you'll see that life after squadron command gets even better...the fun only gets better with each "plum"! Keep strokin'. ■

GRAMPAW PETTIBONE

ILLUSTRATED BY *Osborn*

Dilemma of Documentation

Preflight and initial engine start for a helicopter flight proceeded smoothly. After the rotor was engaged, a line troubleshooter heard a strange noise and noticed that one of the blade tip caps appeared to be bent upward. The line troubleshooter immediately notified the LSE (landing signal enlisted) and the rotor was disengaged.

During the subsequent visual inspection, it was verified that the tip cap on the number two blade was bent and several screws were missing. No one was hurt but no one knew when and how the screws departed the aircraft.

During the follow-up investigation, it was learned that the damage had, in fact, been detected the night before during a maintenance turn-up by a lineman. The lineman had notified an aircrewman, who had told a plane captain, who had informed the line supervisor. Yet none of these individuals initiated a maintenance action form to document the discrepancy.

Grampaw Pettibone says:

All four folks in the chain "thought someone else was going to take care of it." Each assumed the other would ensure that it got "written up." This quartet dropped the collective ball. They're lucky nobody got hurt.

Seems to Ole Gramps that if each of these people would look upon that whirlybird as his or her personal machine – like it was their own car – they would have reacted differently and made sure the aircraft got fixed. If they couldn't do that, then somebody better explain what "professional responsibility" is 'cause they sure don't know.

Intruder Lament

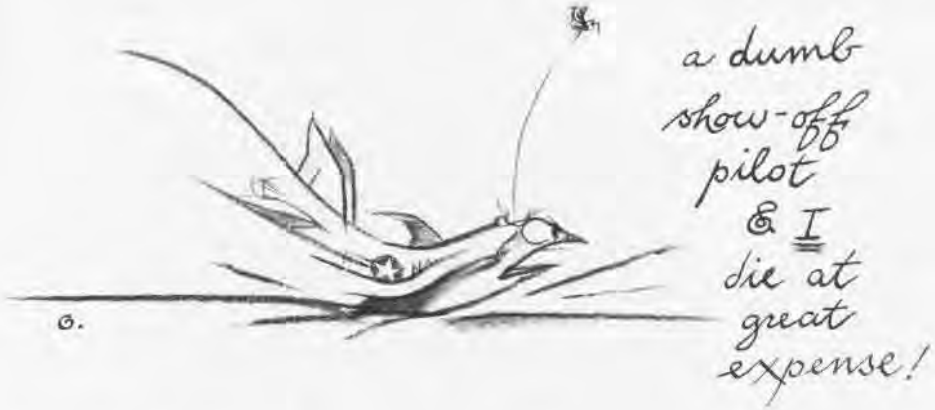
An A-6E was on a daytime low-level navigation training flight in mountainous terrain. It carried MK 76 practice bombs for the strike portion of the flight. When the *Intruder* was late for its scheduled target time, the target crew notified home base and a little later a search commenced. Weather prevented aircraft from sighting the A-6E the day of the flight, but wreckage of the bomber was spotted the next day. It had struck the side of a relatively steep hill and was destroyed. The pilot and bombardier navigator (BN) were killed on impact.

Grampaw Pettibone says:

We'll never know for sure what caused this fatal crash, but the investigators determined that no mechanical failure was involved.

The crew flew most of the low-level route beneath an overcast using radar. Weather got worse and they probably began a climb to get out of it in order to stay VMC (visual meteorological conditions). The disposition of the wreckage indicated the *Intruder* was in a gentle, unhurried climb. Other data showed that the aviators were most likely unaware of the impending impact.

The pilot and BN had limited radar-only terrain following training,



which may have been a contributing factor.

Both fliers seemed in good spirits before the hop. On the other hand, the pilot's wife was one week past due with their first child. The BN had experienced a distressing contact with a female friend on the previous weekend. Also, he had suffered from diarrhea the day before although he felt better the day of the flight. He had not sought medical help for his condition. And, the BN was scheduled to go on leave out of the area later that day. These factors were not considered to be directly contributory to the crash.

The pilot was known to be conscientious and not one to cut corners or bend the rules. The BN was also considered conscientious and known as a good low-level navigator.

Ole Gramps can only shake his weary head on this one, a terrible loss, which once again proves that Naval Aviation is a complex and demanding endeavor and those in it can't let their guard down – even for an instant.

Demo Debacle

The pilot of an F/A-18 was scheduled to demonstrate the *Hornet*'s pitch rate capabilities in a public air show. During recent practice sessions, the pilot had progressively lower apex altitudes, slower level inverted airspeeds, and consistently lower nose attitudes in the recovery phase of the maneuver. On the day of the air show, the aviator began the maneuver at a lower airspeed than specified. Similar to his previous practice run, he purposely achieved a peak altitude which was lower than that prescribed – even though the published description of this maneuver stated that overhead maneuvers resulting in nose-down attitudes are not authorized. The pilot found himself very slow and low with his nose pointed at terra firma.

The pilot attempted to pull the aircraft through the maneuver, but his available airspace quickly ran out. The *Hornet* slammed into the ground and was destroyed. Although the pilot was seriously injured, he survived.

Grampaw Pettibone says:

Reminds me of the time a young carrier pilot secretly altered the fusing on a 250-pound bomb he was to drop during a firepower demonstration for some foreign VIPs. Instead of exploding "in" the sea, the weapon blew up above it, spraying shrapnel in all directions. A chunk or two plunked onto the "roof" where the VIPs were seated. Miraculously, no one was hurt.

"Why did you do it?" the JO was asked.

"I guess I wanted to be more spectactular," he answered.

He was that, all right. But he sure scared a lot of people in the process of "goin' his own way."

This *Hornet* flier went his own way, too. He deliberately modified the maneuver. It cost an airplane and almost his life. Pros produce procedures for such maneuvers based on experience, careful study, and evaluation. Short of an urgent combat or lifesaving situation, I can't for the life of me accept a reason for not following them to the letter.

The crowd got a heart-up-to-the-throat thrill watchin' this Hornet pancake into the dirt. But that's not the type of excitement we want to convey to Mr. and Mrs. Public and all their offspring.

Former Gramps Writer Dies

Capt. Andrew W. Bright, USNR(Ret.), died of heart failure on January 18, 1990, at Bethesda Naval Hospital, Md. As a Naval Aviator during WW II, he flew land-based antisubmarine patrol aircraft. During Washington, D.C., tours in his 22-year career, Capt. Bright was the voice of "Grampaw Pettibone" in *Naval Aviation News* from February 1945-January 1953 and January-March 1956 – the longest period of time for any Gramps writer.

1989: A Good Year for Aviation Safety

Naval Aviation ended CY 89 with its second best safety performance in its history: a Class-A mishap rate of only 2.39 mishaps per 10,000 flight hours. Only the 1988 rate of 2.16 surpassed this performance. (A Class-A mishap is one involving fatalities or damage of $1,000,000 or more.)

The rate of fatal Class-A mishaps reached an all-time low of 1.02 in 1989, although the number of fatalities last year was slightly higher (78) than in 1988 (66), primarily because of two helicopter accidents involving numbers of passengers. A total of 52 Navy and Marine aircraft were destroyed in mishaps in 1989.

Also significant, the number of Class-B mishaps (those involving damage worth between $200,000 and $1,000,000) in 1989 dropped nearly 50 percent from the level recorded in 1988, from 27 to 15 mishaps.

T-45 On Track for June 1991 Service

The service introduction of the McDonnell Douglas T-45A *Goshawk* into the role of training Naval Aviators is scheduled for June 1991, as efforts are under way to correct deficiencies identified in the initial development and operational flight testing.

Engine acceleration time and overall thrust levels will be improved by installation of a higher thrust engine, the Rolls Royce MK 871. Directional stability has been improved by addition of an extended vertical stabilizer cap, a central ventral fin, and increased yaw damper authority. A pitch compensator will be installed to preclude abrupt pitch-up with speed brake operation. To improve stall warning on approach, a rudder shaker has been installed and wing leading edge slats are being developed.

McDonnell Douglas recently decided to shift management and production of the T-45 from Long Beach, Calif., to St. Louis, Mo. Two prototypes have been produced to date. The Navy plans to procure a total of 302 T-45As to replace the T-2 and TA-4 strike syllabus trainers in the training command. Training Wing Two at NAS Kingsville, Texas, will be the first to operate the T-45A in its intended role.

The T-45 is only one component of the T-45 Training System (T45TS), an integrated system designed to provide a total training environment for the student aviator, consisting of operational and instrument flight trainers, computer-aided instruction, a training integration system, and contractor logistics support.

LCdr Rick Burgess

Navy FY-90 Buy = 137 Aircraft

The FY-90 defense appropriation and authorization bills signed by President Bush in November funded the purchase of 137 aircraft for the Navy and Marine Corps during the current fiscal year. Table 1 lists the types of aircraft and numbers funded.

Table 1.
FY-90 Navy Aircraft Buy

Type	Number
AV-8B	24
F-14D	18
F/A-18C/D	66
CH/MH-53E	14
SH-60B	6
E-2C	4
T-44A	5
Total	137

In addition to the 18 production F-14Ds, the remanufacture of six F-14As into F-14Ds was also funded. No funds for production of the V-22 were appropriated, although $225,000,000 was allocated for V-22 research and development.

1989 Was Banner Year for Helo Relief Ops

Natural and manmade disasters in 1989 provided ample opportunity for Navy, Marine Corps, and Coast Guard helicopters to prove their worth as "angels of mercy."

Four Marine squadrons at MCAS Tustin, Calif., took turns in providing CH-46E detachments to assist in the cleanup of more than 10-million gallons of crude oil spilled last March from the Exxon tanker *Valdez* into Prince William Sound off Alaska. HMMs 166, 164, 268, and 161 all provided detachments to augment the Coast Guard HH-3Fs involved in the cleanup.

After Hurricane Hugo swept through the Caribbean and into Charleston, S.C., four Marine CH-53Ds from HMH-362 were employed to transport personnel and relief supplies to the barrier islands. Coast Guard H-3s from as far away as Clearwater, Fla.; Elizabeth City, N.C.; and

Traverse City, Mich., deployed to the Charleston area to render assistance. Coast Guard helicopters from Puerto Rico's Coast Guard Air Station, Borinquen, and SH-3Gs of VC-8 at NAS Roosevelt Roads were augmented by CH-53Es of HC-2 and HMH-461 in providing disaster relief in the storm-ravaged areas of the Caribbean.

When a massive earthquake struck northern California on October 17, naval aircrews launched into immediate relief efforts.

MH-53Es of HM-15 based at NAS Alameda, Calif., lifted heavy construction equipment to the collapsed Interstate 880 highway. HM-15 was assisted by a CH-53E from HC-1 and CH-46Ds from HC-11 in lifting tons of relief supplies to heavily damaged areas. Marine CH-53s and CH-46s from HMM-166 and MAG-42 and Coast Guard HH-3Fs and HH-65s also provided sorties in support of the relief effort. VH-60A executive transports of HMX-1 were flown in to provide President Bush the means to view the damage and relief efforts firsthand.

Night-Attack Hornets Delivered

The Navy took delivery in November 1989 of the first production F/A-18 *Hornets* equipped for night attack. The first two examples were flown to Naval Air Test Center, Patuxent River, Md., for evaluation.

The first single-seat example, F/A-18C BuNo 163985, was delivered on November 1, followed on November 14 by the first production two-seat, night-attack version, F/A-18D BuNo 163986. All subsequent *Hornet* deliveries to the Navy and Marines will be so equipped. The night-attack avionics have been flight tested since 1988 on the first production F/A-18D, BuNo 163434.

The heart of the night-attack capability is the Thermal Imaging Navigation Set, which produces a video image of the area ahead and presents it to a heads-up display. Other avionics additions include night-vision goggles that attach to the pilot's helmet, and a color digital moving map stored on laser disk.

The Marine night-attack F/A-18Ds will be crewed by a pilot and Naval Flight Officer, without flight controls in the rear cockpit. VMFA(AW)-121, redesignated from VMA(AW)-121 on December 8, will be the first combat squadron to operate the night-attack F/A-18D, and is scheduled to receive its first *Hornet* in April 1990.

Super Cobras Go East

Marine Light Attack Helicopter Squadron (HMLA) 167 at MCAS New River, N.C., took delivery on November 8, 1989, of its first three AH-1W *Super Cobras*, marking the first of these improved helicopter gunships to be assigned to the East Coast.

The delivery comes after the four HMLAs of Fleet Marine Force, Pacific (HMLAs 169, 267, 367, and 369) completed transition to the AH-1W. Once HMLA-167 and, subsequently, HMLA-269 convert from the older AH-1T to the AH-1W, only the replacement training squadron, HMT-303, will operate the AH-1T. The two reserve units that operate the *Cobra*,

HMA-773 at NAS Atlanta, Ga., and HMA-775 at Camp Pendleton, Calif., currently fly the AH-1J *Sea Cobra*, but will eventually receive upgraded versions.

The AH-1W inventory includes production models and AH-1Ts that have been upgraded. The AH-1W is powered by two General Electric T700-GE-401 engines which give a 73-percent increase in horsepower over those installed in the AH-1T. Cruise speed at 160 knots is 20 knots faster than the AH-1T. The *Super Cobra* also features a heads-up display and a greater ordnance-carrying capability, including TOW (tube-launched, optically tracked, wire-command) and *Hellfire* antitank missiles and *Sidewinder* air-to-air missiles.

HM-15 Deploys MH-53E

HM-15 Det II returned to NAS Alameda, Calif., in December from a three-month deployment to the northern and western Pacific aboard USS *Tripoli*, the first major deployment for the new squadron and for the Navy's newest airborne mine countermeasures helicopter, the Sikorsky MH-53E *Sea Dragon*.

HM-15 deployed five aircraft and 280 personnel and operated in the Aleutians.

Japan, South Korea, Okinawa, and the Philippines. One of the Navy's largest squadrons, HM-15 maintains three simultaneously deployable detachments to respond on short notice to emergent requirements throughout the world.

PHAN Y. Kennon

A Soviet naval aviation IL-38 "May" ASW aircraft is escorted at "Gonzo Station" on September 19, 1989, by a USS Midway-based F/A-18A from VFA-151 and a VA-185 KA-6D. Intercepts such as this are common in the North Arabian Sea.

P-3 Crews Test Comms with Soviets

Radio interoperability tests between U.S. and Soviet ships and aircraft were conducted in December 1989 under guidelines in the Dangerous Military Activities Agreement that went into effect on January 1, 1990. These tests involved Navy P-3 *Orion* and Soviet Il-38 *May* patrol aircraft.

According to Mr. Pete Williams, Assistant Secretary of Defense for Public Affairs, the purpose of the treaty is to "avoid any accidents from being caused by the inability to communicate with the other side."

During December 6 through 8, P-3s and Il-38s rendezvoused at specific locations in the Bering Sea and flew toward the other nation's territory after establishing radio communications. They also established communications with interceptor aircraft and air traffic control and monitoring facilities. On December 6, during Exercise *Ivory Eagle* in the Mediterranean Sea, a VP-24 P-3 conducted similar tests with the Soviet frigate *Razitelny*, while an Il-38 communicated with USS *Capodanno* (FF-1093).

USCG HC-130H Demonstrates SAMSON

A Coast Guard HC-130H *Hercules* based at CGAS Sacramento, Calif., experimented with a new high-tech surveillance system designed and built by Lockheed Aeronautical Systems Company-Georgia. The SAMSON (special avionics mission strap-on now) system comprises a pod-mounted forward-looking infrared sensor, an optical data link, and control console with display and recorder that can be installed on the aircraft in as little as three hours. It works in conjunction with the aircraft's radar to give the operator superior target definition at close ranges during nighttime operations.

The Coast Guard began using SAMSON on night drug interdiction missions last fall. The pilots felt that it significantly enhanced their overall mission effectiveness and could provide around-the-clock capability. The Coast Guard operates a fleet of 31 HC-130s capable of using SAMSON.

Lockheed Aeronautical Systems Co.

A Lockheed technical specialist examines the forward-looking infrared sensor of a SAMSON pod attached to a Coast Guard HC-130H. The aerial intelligence device provides the surveillance capability to operate at night and in poor visibility.

Quand Vous N'Avez Plus des F-8s...

"When you're out of F-8s, you're out of fighters," as the U.S. Navy F-8 community always claimed. The French government recently announced that its Navy will retain its Vought F-8E(FN) *Crusader* carrier-based fighters in service until they are replaced by a navalized Dassault *Rafale*, rather than purchase the F/A-18 as an interim fighter to operate from its two aircraft carriers.

The French naval air force, Aeronavale, acquired 42 F-8E(FN)s in 1964 and has operated them from the carriers *Clemenceau* and *Foch* ever since, including service over Lebanon in 1983 and off Iran in 1988. The U.S. Navy retired its last F-8 fighters in 1976 and its last RF-8G reconnaissance versions in March 1987. The Philippine Air Force

is the only other foreign air arm to operate the "last of the gunfighters."

Korea Chooses F/A-18

The Republic of Korea selected the McDonnell Douglas F/A-18 *Hornet* as its choice for the Korean Fighter Program, as announced on December 20, 1989, by the Korean Ministry of National Defense. The F/A-18 was selected despite the fact that the Republic of Korea Air Force already operates the General Dynamics F-16, with its acknowledged lower operating costs.

South Korea stated its reasons for choosing the F/A-18: the ability to counter North Korea's newest aircraft; the need to have the aircraft in service for 30 years; the two-engine safety factor given Korea's maritime geography; and the superior capability of the F/A-18. South Korea will acquire 120 *Hornets*.

South Korea will become the seventh nation to operate the F/A-18; the U.S. Navy and Marine Corps, as well as the air forces of Canada, Australia, and Spain, operate the *Hornet*, which is also on order by Switzerland and Kuwait.

Essex Carriers Fading Away

The Navy struck three of four inactive *Essex*-class aircraft carriers from the Naval Vessel Register during 1989, leaving only one active and one inactive member of the famous class on the register. Two others remain in existence as museums.

The four inactive carriers were "mothballed" for many years at Puget Sound Naval Shipyard, Bremerton, Wash. *Oriskany* (CV-34), decommissioned in 1976 after service off Korea and Vietnam, was stricken on July 25, 1989. *Bennington* (CVS-20), which served in WW II and off Vietnam and was decommissioned in 1970, was stricken on September 20, 1989. *Bon Homme Richard* (CVA-31), which was decommissioned in 1971 after service in WW II and off Korea and Vietnam, was stricken on September 30, 1989. Only *Hornet* (CVS-12), decommissioned in 1970, remains on inactive status at Bremerton.

Lexington (AVT-16), the Navy's training carrier, is the only ship of her class remaining on active duty. *Yorktown* (CVS-10) is preserved as a museum in Charleston, S.C., and *Intrepid* (CVS-11) serves the same purpose in New York City.

The 24 ships of the *Essex* type comprised the largest class of fleet carriers ever built, and projected naval air power in the WW II Pacific campaign, the Korean War, and the Vietnam conflict, as well as in numerous international crises.

"Fat Albert" Lives on in Adak

KC-130F BuNo 149806, which long served the *Blue Angels* as its logistics support aircraft, now provides NS Adak, Alaska, a vital logistic link to the outside world.

Arriving in Adak in mid-1989, 149806 is the first aircraft assigned to the station in an administrative support role since the mid-1970s. From April 1974 until December 1988, the KC-130 was known to millions as "Fat Albert," hauling the crews to air shows around the world, and thrilling the air show crowds with jet-assisted takeoff demonstrations.

The role of "Fat Albert" has continued in the interim by two Marine KC-130Fs (148791 and 148893), but the permanent replacement will not join the *Blue Angels* until early 1991 when EC-130G 151891, a former TACAMO (take charge and move out) aircraft, completes modification as a TC-130G. The TC-130G, with heavier gross weight capability, will add a greater range and payload to the *Blue Angels'* support team.

In Brief...

VA-203 at NAS Cecil Field, Fla., was redesignated VFA-203 on October 1, 1989, and is the first East Coast reserve unit to transition to the F/A-18A *Hornet*....VFAs 25 and 113, the first *Hornet* squadrons to make a carrier deployment, have become the first squadrons to trade their F/A-18A models for new F/A-18Cs....Several Marine CH-53As have been transferred to the USAF for conversion into TH-53A trainers, to free up more USAF H-53s for operational use....Only one C-131 remains in Navy service, now that VR-48 has retired C-131H BuNo 542815; BuNo 550299 will soldier on until August 1990....The Navy sucessfully completed the fifth test flight of the Standoff Land Attack Missile at White Sands Missile Range, N.M., on December 16.

Blue Angels 1990 Schedule

March	
17	NAF El Centro, CA
24-25	Vance AFB, OK
April	
7-8	MCAS Beaufort, SC
14-15	Waco, TX
21-22	Wilmington, NC
28-29	MCAS El Toro, CA
May	
5-6	Redding, CA
10	NAS Chase Field, TX
12-13	NAS Corpus Christi, TX
18-19	Andrews AFB, MD
26	Pease AFB, NH
28	USNA, MD
June	
2-3	Harrisburg, PA
9-10	McConnell AFB, KS
16-17	Portland, OR
23-24	Rancho Murieta, CA
30	St. Louis, MO
July	
1	St. Louis, MO
7-8	Kalamazoo, MI
14	Pensacola Beach, FL
21-22	Wurtsmith AFB, MI
28-29	NAS Miramar, CA
August	
4-5	Seattle, WA
10-12	Abbotsford, Canada
18-19	Glenville, NY
25-26	Pittsburgh, PA
September	
1-3	Cleveland, OH
8-9	Grand Forks AFB, ND
15-16	Broomfield, CO
22-23	NAS Oceana, VA
29	NAS Fallon, NV
30	NAS Lemoore, CA
October	
6	San Francisco, CA
13-14	NAS Jacksonville, FL
20-21	Houston, TX
27-28	NAS New Orleans, LA
November	
3-4	Miami, FL
9-10	NAS Pensacola, FL

Modernization Under Way MPA Force

By LCdr. Rick Burgess

The P-3C Update III will equip 13 fleet squadrons by 1992.

The Navy began steadily implementing a modernization of its maritime patrol aviation (MPA) force in the current fiscal year with a major realignment of aircraft that will result in the most dramatic change in the force since the late 1960s. The plan under execution involves the retirement of 73 older P-3 models – the end product: a "leaner, meaner" MPA force.

Key features of the plan to be completed by FY 92 include: the retirement of all remaining reserve P-3A TAC/NAVMOD versions; the transfer of all remaining active P-3B TAC/NAVMOD versions to the reserve; transition of the remaining active P-3B squadrons to the P-3C; transition of two more reserve squadrons to the P-3C; reduction in active squadron aircraft allowance from 9 to 8 and from 9 to 6 in the reserve units; reduction in crews from 12 to 11 in active units and 15 to 12 in reserve units; and realignment of P-3C configurations to standardize equipment by base and to balance configurations by coast.

The plan will allow the Navy at last to achieve an all-P-3C active force – a goal since the computerized P-3C was introduced to the fleet in 1969. Since the retirement of the last fleet SP-2H *Neptune* from squadron service in 1970, the fleet patrol squadrons (VPs) have operated an all-P-3 force with a mixture of models. This realignment represents the most significant change since the 1968-70 period: when six squadrons (VPs 2, 7, 18, 21, 28, and 42) were disestablished, when active VP squadrons were consolidated at four home bases (vice seven), and when the reserve units were organized into reserve force squadrons.

The retirement of 30 P-3A and 43 P-3B antisubmarine warfare aircraft will be accomplished by a daisy chain of transfers that will realign a significant portion of the P-3 force. The last two active P-3B squadrons, VPs 6 and 22 at NAS Barbers Point, Hawaii, will acquire P-3Cs drawn from other active squadrons. Their P-3Bs and those from the West Coast fleet replacement squadron (FRS), VP-31, combined with those reduced from reserve squadrons, will allow the last three reserve P-3A units (VPs 64, 66, and 69) to retire their aircraft.

The Naval Air Reserve also stands to acquire P-3C models for two more squadrons, allowing the two squadrons to transfer out their P-3Bs. VP-91 at NAS Moffett Field, Calif., is receiving Update III versions, as did VP-62 at NAS Jacksonville, Fla., in 1988-89. VP-65 at NAS Point Mugu, Calif., will be the third reserve P-3C squadron.

The realignment plan will result in significant benefits for the active VP force, including a consolidation of similar configurations to achieve a site commonality by acoustic processor, which is the heart of the P-3's war-fighting capability. At the completion of the plan, all squadrons at Moffett Field and Jacksonville will be equipped with production or retrofit P-3C Update III aircraft with the UYS-1 processor; all squadrons at Barbers Point and NAS Brunswick, Maine, will operate the older but still effective AQA-7 processor in their P-3C Update I, II, and II.5 versions. This plan will result in a balance of Update III squadrons between the Atlantic and Pacific fleets. (See Table 1.)

To achieve the desired balance between fleets, VP-16 at Jacksonville will replace its Update II.5 models with older P-3Cs retrofitted with the Update III package, in common with its sister squadrons at Jacksonville. At Moffett Field, three units (VPs 9, 19, and 46) will also trade their Update I models to Barbers Point squadrons (VPs 1, 4, and 17), whose older non-update P-3Cs will be retrofitted as Update IIIs for the Moffett Field units. The two P-3B units at Barbers Point (VPs 6 and 22) are receiving P-3C Update II.5s.

The impact of the aircraft realignment on the six squadrons at NAS Brunswick is mainly limited to a reduction in aircraft and crew allowance. However, they will be the first units to have their aircraft updated to Update IV avionics, commencing in FY 94. The next generation patrol aircraft, the Lockheed P-7A, also with the Update IV avionics package, will first be introduced into squadrons at Moffett Field, followed by Barbers Point and Jacksonville units, eventually achieving an active force completely Update IV equipped.

Assuming a smooth P-7 program and allocated funds, an all-P-7 active force is achievable by the end of the first decade of the next century, with introduction of the P-7 into the reserves as well.

Although the antisubmarine career of the P-3 "Alpha" in the U.S. Navy is drawing to a close after 28 years of service, numerous P-3A variants will soldier on in a wide variety of roles, including FRS pilot training (TP-3A), electronic reconnaissance (EP-3E), electronic warfare training and development (EP-3A), research and development (RP-3A and NP-3A), utility (UP-3A), and executive transport (VP-3A). Others serve in the drug interdiction role with the U.S. Customs Service. Spain still flies the Alpha in the antisubmarine warfare mission.

The *Orion* force in the Navy's fleet air reconnaissance squadrons (VQs) is also undergoing a force modernization. Twelve Alphas that were converted to two EP-3B and ten EP-3Es in the late 1960s and early 1970s for VQs 1 and 2 are being retired and replaced by 12 P-3C airframes converted to EP-3Es under a Conversion-in-Lieu-of-Procurement program.

The P-3A, which started out in 1962 with VPs 8 and 44, is ending its ASW career in the U.S. Navy.

Table 1. VP Aircraft Realignment

Squadron	End FY 89	By End FY 92
PatWing-2, NAS Barbers Point, HI		
VP-1	P-3C	P-3C UI
VP-4	P-3C	P-3C UI
VP-6	P-3B	P-3C UII.5
VP-17	P-3C	P-3C UI
VP-22	P-3B	P-3C UII.5
PatWing-10, NAS Moffett Field, CA		
VP-9	P-3C UI	P-3C UIIIR
VP-19	P-3C UI	P-3C UIIIR
VP-40	P-3C UIII	P-3C UIII
VP-46	P-3C UI	P-3C UIIIR
VP-47	P-3C UIII	P-3C UIII
VP-48	P-3C UIIIR	P-3C UIIIR
VP-50	P-3C UIIIR	P-3C UIIIR
PatWing-11, NAS Jacksonville, FL		
VP-5	P-3C UIIIR	P-3C UIIIR
VP-16	P-3C UII.5	P-3C UIIIR
VP-24	P-3C	P-3C UIIIR
VP-45	P-3C UIIIR	P-3C UIIIR
VP-49	P-3C UIIIR	P-3C UIIIR
VP-56	P-3C	P-3C UIIIR
PatWing-5, NAS Brunswick, ME		
VP-8	P-3C UII.5	P-3C UII.5
VP-10	P-3C UII	P-3C UII
VP-11	P-3C UII.5	P-3C UII.5
VP-23	P-3C UII	P-3C UII
VP-26	P-3C UII	P-3C UII
VP-44	P-3C UII	P-3C UII
Reserve Patrol Wing, Atlantic		
VP-62	P-3C UIII	P-3C UIII
VP-64	P-3A	P-3B
VP-66	P-3A	P-3B
VP-68	P-3B	P-3B
VP-92	P-3B	P-3B
VP-93	P-3B	P-3B
VP-94	P-3B	P-3B
Reserve Patrol Wing, Pacific		
VP-60	P-3B	P-3B
VP-65	P-3B	P-3C*
VP-67	P-3B	P-3B
VP-69	P-3A	P-3B
VP-90	P-3B	P-3B
VP-91	P-3B	P-3C UIII**

*Version of P-3C for VP-65 to be determined.

**Mix of production and/or Retrofit Update III to be determined.

Key: UI = Update I UII = Update II UII.5 = Update II.5 UIII = Production Update III UIIIR = Retrofit Update III

Despite the reductions in force levels, the realignment and modernization will enable the Navy to field a more modern, balanced MPA force to counter a hostile submarine and surface threat. The P-3 is approaching its fourth decade of service and the newer airframes will see service long into the next century. The *Orion*'s hunting days are far from over. ■

Special thanks to Cdr. Ed Waller and LCdr. Dick Holloway for their assistance with this article.

"Flight of the Intruder"

Naval Aviation Soars with the Stars

Story and Photos by JO1 Jim Richeson

Actor Willem Dafoe plays BN, LCdr. Virgil Cole.

The aircraft carrier *Independence* (CV-62) slowly leaves its berth at NAS North Island, Calif. Like a giant awakening sluggishly, the mammoth vessel rouses and drags itself away from the pier with the careful nudging of two Navy tugboats. The ship sails past the familiar San Diego skyline and methodically glides through the bay and out to the Pacific.

Within the carrier, it is like rush hour in a busy metropolis – a crew of close to 3,000 in constant motion. New faces have joined the ship's company for this cruise.

Anxious sailors make their way from one end of the ship to the other. There is constant body traffic moving through a gigantic labyrinth of steel. Within this maze, it is possible to ask for directions from someone who turns out to be as lost as yourself.

Minutes pass and the glitter of California's coastline fades out of sight. Its course clearly charted, *Independence* steams for its destination: the Gulf of Tonkin off the coast of Vietnam, where it will remain on Yankee Station.

It was on Yankee Station that the Navy flexed its air arm during the Vietnam war. Approximately 75 miles from the shores of North Vietnam, aircraft such as the F-4 *Phantom*, F-8 *Crusader*, A-1 *Skyraider*, A-4 *Skyhawk*, RA-5 *Vigilante*, A-7 *Corsair II*, A-3 *Skywarrior*, and the Navy's primary medium-attack jet, the A-6 *Intruder*, fought the war from the decks of aircraft carriers like this one. Aside from the *Corsair* and the *Intruder*, the aforementioned aircraft have become relics of that era, and are no longer part of the carrier-based air wing.

This cruise is reminiscent of the ship's line period on Yankee Station almost 25 years ago when the A-6, then

Opposite page, VA-165 A-6s painted in Vietnam-era VA-196 markings launch for the camera. Above, 108 film crew members kept the cameras rolling aboard Independence.

the newest aircraft in the Navy's inventory, was baptized into the war. The *Sunday Punchers* of Attack Squadron (VA) 75 flew their first combat mission from *Independence*, striking enemy targets 80 to 125 miles south of Hanoi.

Fortunately for *Indy* sailors, many of whom weren't even born when the carrier made that war cruise, this is a make-believe deployment conceived by the people who produced the blockbuster movie *Top Gun*.

Based on the best-selling novel by retired Navy Commander Stephen P. Coonts, Paramount Pictures presents *Flight of the Intruder*.

Roughly 108 production crew members and cast, which included actors Danny Glover, Willem Dafoe, and newcomer Brad Johnson, embarked onboard the 95,000-ton warship during its 10-day carrier qualifications cruise from November 29 to December 8, 1989.

Glover, of *Lethal Weapon* fame and other films, such as *Witness*, *Silverado*, *The Color Purple*, and *Places in the Heart*, portrays Commander Frank Camparelli, VA-196's skipper, assigned aboard *Independence*.

Willem Dafoe, who performed in the films *Streets of Fire*, *To Live and Die in L.A.*, and *Mississippi Burning*, plays bombardier navigator (BN) Lieutenant Commander Virgil Cole, alongside Lieutenant Jake "Cool Hands" Grafton, the lead character. Grafton is portrayed by Brad Johnson who made his acting debut in Steven Spielberg's recent film, *Always*. Rosanna Arquette plays the film's female lead, Callie McKenzie.

"Logistically, it [*Flight of the Intruder*] was the most difficult film we've supported to date," Captain Michael T. Sherman, director of the regional Navy Office of Information in Los Angeles, Calif., said. To lend to the film's realism and technical accuracy, producer Mace Neufeld enlisted the Navy's cooperation. Various squadrons provided aircraft, which had to be repainted and marked to simulate that time period in Naval Aviation; more than 1,000 sailors appeared as extras in the movie; and fake bombs, painted to look real, were loaded and unloaded.

As liaisons between the Navy and individual film companies, Capt. Sherman and his staff have little time to rest. They recently completed another project with Paramount on the motion picture version of author Tom Clancy's best-selling novel, *The Hunt for Red October*, which is scheduled to be released in March.

Production for *Flight of the Intruder* began in September 1989 when elements of VA-165 were asked to provide support to Paramount. The *Boomers* set off on a cross-country hop from their home base at NAS Whidbey Island, Wash., to Savannah,

Ga., where some of the film's flying scenes were recorded over the Savannah River Delta.

According to Capt. Sherman, the *Intruders* returned to their home base on October 8. Five days later, the squadron fitted each aircraft for a transpac flight to NAS Barbers Point. While on location in Hawaii, the film crew transformed several sites to recreate scenes of NS Subic Bay, R.P., and its surrounding community.

VA-165 performed most of the flying sequences in the movie, but other aircraft from Fleet Composite Squadron 1, Patrol Squadrons 1 and 17, and a detachment of Helicopter Antisubmarine Squadron (Light) 37 were featured in much of the footage that was shot at NAS Barbers Point.

Capt. Sherman calculated that VA-165 logged in a total of 285 flight hours for the camera, which he estimated would cost Paramount $885,000. *Flight of the Intruder* is said to have an estimated $30-million budget.

"Military assets are often used in making feature motion picutures, if they meet a certain set of criteria. The script must accurately represent the mission of the military and its people in a credible fashion, the assistance must be unclassified, and filming cannot interfere with ongoing fleet or unit operations. Finally, any assistance provided must be at no cost to the government and is fully reimbursable. That means that any consummable asset must be paid for by the production company. Charges for aircraft flight hours, steaming hours for ships that get under way for the cameras, flares, and even something like maneuvering board paper all get logged in and billed to the Paramount producers," Capt. Sherman said.

Aboard *Independence*, the film crew formed two units. First Unit filmed the acting sequences, while Second Unit positioned its cameras above and around the flight deck. A mix of A-7s from VA-122, A-6s from VA-128 (the West Coast fleet readiness squadron), and C-2s of Fleet Logistics Support Squadron 30 were captured on film during takeoffs and landings.

"It's worked well. We've developed a real good relationship with Paramount and they are working around our schedule," noted Captain Kenny G. Bixler, the ship's X.O. "We came to sea for a mission: to CQ [carrier qualify] 1,400 traps. We were able to let them tag along and do their work during our off periods," he added.

Capt. Sherman pointed out that safety was a serious matter for the Navy while supporting the production. "Safety was our primary concern because the majority of the film crew had never been on an aircraft carrier," he noted.

He added that the Navy was scrupulously watchful of any safety violation and made no exceptions in making sure that only Navy-approved safety equipment was used by the crew during the filming.

VA-165's C.O., Commander Otis Shurtleff, emphasized that the Navy took thorough precautions to escort the film crew aboard the ship and keep them out of harm's way.

He also said, "The flying we've done has been carefully monitored. I've been on everyone of the dets, and I get the final veto. If I say, 'That's not something we're going to do with the airplane,' that's the end of the discussion." He added, "It's been a real pleasure working with the Second Unit folks. They're the best in the business."

Cdr. Shurtleff, a midshipman assigned aboard the attack carrier *Oriskany* (CVA-34) in 1971, stated that none of his aircrewmen in the squadron, including himself, flew combat missions in Vietnam. "We're entirely a new generation of Naval Aviators," he said.

Capt. Bixler, who began his career flying photoreconnaissance missions over Vietnam in RA-5C *Vigilantes* and later transitioned into the attack community, is anxious to see the final product and expects the movie to be a boost for the A-6 *Intruder*.

He noted, "This airplane is the stepping stone into the future. We're looking at the A-12 coming along. That's the next airplane and it will be the A-6 drivers who are going to transition into it... I expect quite a rash of people getting into that warfare specialty to be able to fly the new 'Cadillac.'

"From the standpoint of the A-6 community, I think this movie will show the camaraderie in the cockpit," Bixler said. "It is a very unique situation when you're riding side by side. There is a lot of nonverbal communication between crewmen."

The veteran BN commented, "This airplane has the best mission in the Navy. There is nothing better than being able to go out on a low-level – 200 feet at 450 knots – and challenge yourself as a crew.

Capt. Bixler added, "Down and low at night through the mountains – that's fun. You get a nose bleed if you get above 10,000 feet. That's what it's all about. Hopefully, the movie will portray that."

Flight of the Intruder, which is in its final stage of production, is scheduled to be released in July. ■

F-4 Phantoms were craned aboard Independence to provide a vintage setting for the A-6s.

Special thanks to Lt. Douglas Smith, JO3s Doug Mueller and Kevin MacWilliams and the entire USS *Independence* public affairs staff for their support.

Chained Eagle

Everett Alvarez, Jr., 25 Years Later

By JO1 Milinda D. Jensen

On August 5, 1964, Lieutenant (jg) Everett Alvarez of Attack Squadron 144 was catapulted off the deck of the carrier *Constellation* as part of a strike against North Vietnam in retaliation for the Gulf of Tonkin incidents of August 2 and 4. After an attack on targets inside North Vietnam, his A-4 *Skyhawk* was hit by flak. Alvarez ejected, bailing out into the gulf, becoming the first American pilot held in captivity by the North Vietnamese, and for the longest period (eight and a half years). Twenty-five years after his imprisonment, Commander Everett Alvarez, Jr., USN(Ret.), tells his story in his recently published book, *Chained Eagle*.

"The book isn't designed to be a political statement. It's designed to tell a story – as honest an account as I could give," said Cdr. Alvarez.

His book relives the first six months of his attempts to survive against less than even odds.

"There I was, a 26-year-old kid. At one point I'm flying jets off a carrier thinking I'm God's gift to the world, and then all of a sudden I'm in a Vietnamese prison saying,'God, what am I going to do?,'" recalled Alvarez. "I remember thinking that the U.S. government was working on getting me released. That was always on my mind. It takes awhile to realize that they aren't just going to walk in and rescue you just like that," he added. "You think that those doors will open any minute, but as the months go by you start to think, 'Well, maybe they won't.' So there's a kind of mental exercise you find yourself going through as you recognize that your one goal is to survive.

"When you're locked up and by yourself, you feel totally helpless. You're very depressed. Physically you've let yourself go. You're overwhelmed by the fact that you're totally confined and have no freedom. But by then you reach a point where you say, 'I can't exist like this. If this keeps up I'm not going to survive,'" stated Alvarez.

But Alvarez did survive and he believes that his strength came from his spiritual beliefs and his perception of control.

"Looking back I found one of the most important things that helped me was the perception that I had control. And that knowledge came from talking to myself and to the man upstairs," confided the 52-year-old author.

...I paced the courtyard nervously talking to God. 'Things don't look too good right now. They want me to answer and I don't know what to say. What do you think I should tell them ?' I wasn't expecting a divine solution or answer, but my prayers were comforting and gave me the strength to face the open threats and hidden terrors.

Alvarez also attributes his survival to values that were instilled in his childhood.

"I think my upbringing had a large part to do with it. The spiritual part – the work ethic – keeping myself clean – knowing the difference between right and wrong. One of the most important things was thinking that I didn't want to do something wrong. I didn't want to be a traitor to the country. You had to play games with yourself. I had control of my life and that was something I could take back from my captors," he commented.

...I would lie and invent where I thought I could get away with it. But I'd also plead ignorance and play the naive junior officer, green, inexperienced, and too far down on the pecking order to be of any use to them.

For 25 years Alvarez kept his memories of captivity to himself. So why after all that time did he finally relive past events that had been buried for so long?

"There were three main reasons that I didn't write a book when I was released in 1973. First, I didn't feel that people were ready to hear about it, mainly because of the anti-Vietnam mood of the country. We had been through a very traumatic period of time in our history. The timing just wasn't right," the Salinas, Calif., native recalled. "Secondly, I just wanted to forget it. I wanted to get on with my future, to do all the things that I had missed for those years in captivity. Third, as time went by, I always found myself the object of attention. No matter what I did I was known as the POW [prisoner of war], and people were interested in hearing about that.

"I can understand that I'm living history. There are kids around today that are curious about that period in time," he added.

Alvarez believes that because people today are more open and objective about the recognition of Vietnam vets as individuals, separate from the politics of the war, the timing was finally right.

"I get nervous when people call me a hero. I was just there. People come up to me and say, 'I don't know how you did it.' My response is: The only difference between you and me is that I was trained as a fighter pilot."

But even so, the effort was immense because he still held it all so close.

"I'm just not one who rethinks, reexperiences, relives. I had to go back to the beginning so I could get that feeling back again. It took me about six months to really get into it. Gradually over time the ice started to melt, and I started to relive the story," Alvarez related.

The *Chained Eagle* author added that he has felt good since he shared his story, or as he put it, "It's like a burden has been lifted.

"I think the most painful things during that time were being alone, the physical torture, and the emotional setback of my wife leaving," he added.

Rejected by Tangee [his wife] and separated by choice from the other POWs, I hugged the compound wall, beating a path as I trudged back and forth....Without her there were no dreams....She was the light at the end of my tunnel....Now that she had cut me loose, I drifted pathetically....

It was times like this that Alvarez remembers and was thankful for the support of his fellow POWs.

Jerry and Dave [Lieutenant Coffee and Lieutenant (jg) Carey] sometimes walked with me, trying in their gentle ways to steer me back to normality. 'God, Ev, it's tough, but hey, man, we're still alive. We're still going to get back,' they'd say. They went to great lengths to excuse themselves for claiming to understand the depths of my sadness.

Even though it took many years for Everett to write his story, bits and pieces surfaced in his life over that time.

"When the kids [sons, Bryan and Marc] were growing up, one of the things that we used to do was take long trips. The boys would ask me to tell them about how I was shot down and then they'd want to know minute-by-minute accounts. Of course, you don't tell them the bad stuff. So I really started talking about it years ago. My present wife, Tammy, kept encouraging me. I had never told her about what had happened, but she had heard things over the years from my discussions with other POWs," Alvarez recalled.

But for all the pain and suffering Alvarez endured, his resolve to find the light at the end of that very dark tunnel remained intact.

"The whole experience taught me several valuable lessons. I have a greater appreciation for life. I was career oriented but after being a POW, family became my main priority. Another major lesson: it made me realize that you don't have anything if you don't have your health," the former captive said.

The starvation diet rapidly drained my strength and sapped my will. Sometimes I lifted the cover off a plate and found a chicken head floating in grease, or in a slimy stew or soup smelling of drain water.

Working weekends and evenings, Alvarez and his neighbor and coauthor Anthony Pitch spent two years writing *Chained Eagle*. Pitch had done a lot of research himself, and according to Alvarez what makes the book unique is the interpretation of his coauthor.

"Pitch immigrated here, he was educated in England, so basically he's a foreigner. When I would tell him something he would look at me funny and say,'What do you mean by that?'" said Alvarez. "If I had written the book by myself, my audience would have been aviators. Since Pitch is a lay person he wrote so everyone could understand."

In the Washington, D.C., area, *Chained Eagle* is considered a best seller. The national status is yet to be determined. Alvarez is still surprised that the book was ever published.

"When the idea first came up, I called around to different publishers to see how they would receive the idea of another POW story," he said. "They'd say,'Not another one of those Vietnam books.' One publisher told me that if it's going to be any good it has to be very well written."

The former Naval Aviator added, "I know there are a lot of books out there, but being recognized as the writer of a good book is a real accomplishment. Tony did a good job. Sometimes I pick it up, look at it, and think that it turned out pretty good, and then other times...."

The one hope Alvarez has is that his book will become a part of permanent libraries where kids from different generations can go to the history section and refer to it for a look at the Vietnam era. "I toned it down a lot. It was purposely written without using four-letter words. The Vietnam period is a gap in the next generation's life. But it won't go away, it can't go away." He stated, "Maybe my book will add some more understanding." ■

Alvarez (front) being turned over to the U.S. military at Gia Lam Airfield, Hanoi on February 12, 1973.

The bold face quotes are excerpts from *Chained Eagle*.

In 1980 Alvarez retired from naval service with the rank of Commander. The following year he was appointed as Deputy Director of the Peace Corps. In 1982, after being confirmed by the Senate, he assumed the post of Deputy Administrator of the Veterans Administration. Leaving that post in 1986, he held the position of Vice President for Government Services for the Hospital Corporation of America. Cdr. Alvarez has since formed his own management consulting firm in the Falls Church, Va., area and currently resides with his wife and two sons in Rockville, Md.

Carquals

By JO3 Douglas R. K. Holl

As the sleek T-2 trainer rolls into the groove, the young pilot hears the words that are the culmination of 18 months of intensive training, "Call the ball!" The ball is a small framework of lights on the flight deck that aid the pilot in maintaining the proper height and position for landing. The pilot's tailhook snags the arresting wire, his plane jerks to an abrupt stop and he knows he is a member of the "tailhookers."

While operating out of Key West, Fla., *Kennedy* (CV-67) served as the platform for a number of training wings undergoing carrier qualifications (carquals). The training wings came from all over the south – TraWing-1, Meridian, Miss.; TraWing-2, Kingsville, Texas; TraWing-3, Beeville, Texas; and TraWing-6, Pensacola, Fla. According to Lieutenant John Sims, part of the team sent to *Kennedy* from *Lexington* (AVT-16), the pilots are graded on every landing. The landing signal officer (LSO) acts as the judge. LSOs score pilots on how well they fly their patterns, how close they come to the #3 arresting wire and other aspects of landing.

In order to get their wings, pilots must first qualify in a T-2 *Buckeye*, which means completing two touch and goes and four traps. After qualifying in a T-2, the pilots go back to their home bases and fly TA-4s. Qualification in the *Skyhawk* is tougher, requiring two touch and goes and six good traps. Upon completion of this phase of their training, the pilots return to the carriers for more carquals.

An integral part of getting young aviators qualified is the efficiency of *Kennedy*'s crew. According to Sims, everything has to be coordinated perfectly or the entire flight operation can get fouled up. "The deck crew keeps the planes moving, the air operations crew stays on top of everything, the air boss ensures the pattern over the ship is safe and the officer of the deck keeps the ship in the wind during flight operations," he added. ■

PH2 Bill Lipski

A T-2 trainer prepares for touchdown on Kennedy's flight deck.

Young aviators await their chance to take the ride of a lifetime during training carquals.

PBO-1 Hudson

By Hal Andrews

XR40-1

Given normal career patterns, there aren't too many Naval Aviation personnel on active duty who have crewed or serviced patrol flying boats. The last of these left squadron service in 1967. In earlier times, things were different; before 1941, there weren't any landplane patrol aircraft. The problems of operating Neutrality Patrol flying boats from northern latitude bases in wintertime led to the initial introduction of landplanes.

In the fall of 1941, with amphibian versions of the PBY flying but not yet in service, the Navy turned to a quick reaction approach to address the upcoming winter need. From a Lend-Lease order for Britain, the U.S. Army Air Force was diverting a portion of the Lockheed *Hudson* reconnaissance bombers to meet its own needs, designated as A-28 and A-29 attack bombers. The first 20 of the A-29s were delivered directly to the Navy as PBO-1s, with 40 pilots, along with other personnel, undergoing expedited training to form a new land-based patrol squadron, VP-82.

The PBOs marked Lockheed's entry as a patrol plane builder for the Navy. Assignment of the "O" for Lockheed in the Navy's old designation scheme traced to Lockheed's initial Navy aircraft a decade earlier. The "L" had been assigned to Loening, at that time the builder of most of the Navy's single-engine amphibians. The evolution of the *Hudson* from a Lockheed commercial transport presents an interesting parallel to today's P-3. And both proved to be much more successful in their military role.

The *Hudson* story begins with Lockheed's Model 14 transport, referred to by some airlines which also operated the earlier and smaller Lockheed "Electra" twin-engine transport as the "Super Electra." Basically a typical all-metal monoplane of the period, the 14 was designed to be faster than, but not as large as, the already widely used Douglas DC-3. Its maximum passenger capacity was 14, two-thirds that of the DC-3. Along with twin tails, by then "standard" on Lockheed twin-engine transports, it had two notable features. Most important was the use of extending Fowler flaps, a first step from the rudimentary split flaps already in general use towards today's sophisticated high-lift systems. The other was a convenience item; the fuselage belly extended below the wing providing easily accessible baggage/cargo space. The prototype 14 first flew in July 1937.

Airline sales were brisk, first to Northwest Airlines, followed by Canadian and European airlines and many others around the world, including Japan, where the 14s were later produced under license.

In the spring of 1938, the Model 14 got its big chance. A British purchasing commission visited the United States looking for aircraft that would be available to fill some Royal Air Force (RAF) needs on an urgent basis, augmenting British production. Lockheed expedited design and prepared a mockup for a reconnaissance bomber version of the 14 transport. The underwing fuselage section was readily adapted to a bomb bay, and provisions were made for an aft fuselage-mounted dorsal gun turret. With minimum changes to much of the airframe, early delivery was possible.

By summer, a contract for 200 B14Ls was signed, and in December the first *Hudson* flew, followed closely by increasing production deliveries. Meanwhile, production of the 14 transport had continued, with one modified for Howard Hughes to be used in a round-the-world flight. In July 1938, Hughes and his crew set a new record, slightly over three days and 17 hours. The Navy also contracted for a 14 to be used as an executive transport – as earlier Navy Lockheed transports had been – the 14 to be the XR40-1.

Along with the successes came some problems. Early Model 14 accidents in U.S. transport operations and subsequent concerns over the lack of

PBO-1

any single cause led to pilot and Air Safety Board concerns over the 14's flight characteristics. Flight tests by Lockheed, the Navy acceptance flight tests at Anacostia, and finally early 1939 tests by the National Advisory Committee for Aeronautics (predecessor of today's NASA) pinpointed some potential flying qualities problems, the most serious in connection with the use of full flaps close to stall speeds. Other less than desirable characteristics were similar to those of contemporary early twin and multiengine monoplanes. While export sales continued, and European airlines in particular operated their 14s quite successfully, in this country Northwest gave up its 14s for DC-3s and the remaining 14s delivered all went abroad. Wing-tip slots, which Lockheed had developed, subsequently became a standard feature on the 14 series airplanes, as well as later models using the 14's wing design. The RAF addressed the full flap situation by limiting flap extension to 80 percent in the *Hudson*; subsequently, a stop was installed at that point.

By December 1939, Lockheed had not only delivered 200 *Hudsons*, but 50 more which the British had agreed to take if they could be delivered by that date. *Hudsons* entered service with the RAF's Coastal Command, performing maritime patrol duties from Britain's coastal airfields. Their effectiveness led to further orders for the RAF, and from Australia for the RAAF. Initial RAF deliveries were by ship, followed due to neutrality restrictions by flights to the U.S. side of the Canadian border, where they were towed across to Canada. The first flight deliveries of land-based military aircraft across the Atlantic followed. RAF *Hudsons* played a major role in surface surveillance and antisubmarine warfare operations after the outbreak of WW II and even engaged in air-to-air combat with Germany's Luftwaffe aircraft. Improvements were made, including the installation of two forward-firing .30 machine guns in the nose and a ventral flexible .30 aft. Some became the first RAF aircraft fitted with radar for maritime patrol.

When Lend-Lease went into effect in mid-1941, further *Hudson* production came under U.S.-funded Lend-Lease contracts. As part of the U.S. buildup, some of these aircraft were diverted for U.S. use and *Hudsons* found their way into the Army Air Force, with 20 diverted to the Navy.

The PBO-1s were flown east from Burbank, Calif., to NAS Norfolk, Va., in late October/early November 1941. All 20 were assigned to VP-82. As training progressed, squadron operations moved north, finally reaching Argentia, Newfoundland. With U.S. entry into the war, VP-82's main thrust was against the German submarines which were wreaking havoc on merchant shipping across the Atlantic. In March 1942, VP-82's efforts were marked by success – on the 3rd, a VP-82 *Hudson* crew accounted for the first German submarine sunk by a U.S. airplane. Another PBO crew chalked up a second submarine on the 15th. Maritime and antisubmarine warfare patrols kept the squadron and its *Hudsons* active through the summer months.

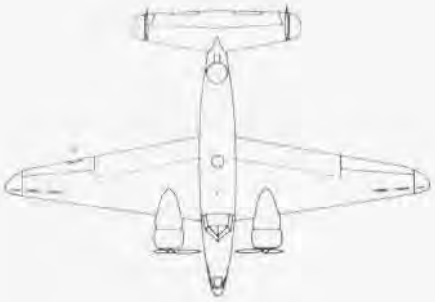
Reassignment of a couple of the *Hudsons* and typical attrition (some failed to return from over-ocean missions) cut the numbers in the squadron so that, beginning in August – as PBY-5A amphibians and the later, more capable Lockheed-Vega PV-3 *Venturas* entered Navy and VP-82 service – 12 PBOs were transferred to NAS Jacksonville for advanced operational training at various Florida training bases. By November, transition was completed and, joined by the XR40-1 in March 1943, the PBO-1s continued this duty until they were stricken – either through accident or retirement. Except for one "loner," whose record is unclear, all were gone by the end of 1944; the "loner" lasted another five months. ■

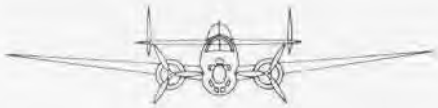
PBO-1

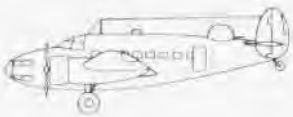
PBO-1

Span	**65'6"**
Length	**44'4"**
Height	**16'10"**
Engines: Two Wright R-1820-40 Cyclones	**1,200 hp**
Maximum speed	**261 mph**
Service ceiling	**25,500'**
Maximum range	**1,790 mi**
Crew	**5**

Armament: Two fixed forward-firing .30 machine guns; three flexible .30 machine guns (two turret, one ventral); and four 325-lb. depth bombs.







The Neutrality Patrol:

To Keep Us Out of World War II? Part 1 of 2

By Capt. William E. Scarborough, USN(Ret.)

On September 1, 1939, the German invasion of Poland began a long anticipated and feared WW II. Declarations of war against Germany by Britain and France two days later showed that the war would undoubtedly expand to all of Europe – a repeat of the beginning of WW I in 1914. The Allies would again be dependent on support by the United States for supplies and munitions which could reach them only aboard ships crossing the Atlantic. Germany would surely make every effort to halt such traffic by U-boat and surface raider attacks and the Atlantic would again, as it had in WW I, become a major battleground. It was a foregone conclusion that the war in the Atlantic would endanger the neutrality of the United States, and the Navy moved promptly to minimize the threat.

The day war began in Europe the Chief of Naval Operations (CNO) informed U.S. forces that German U-boats were ready to begin operations in Atlantic shipping lanes, and reports indicated that a dozen German merchant ships were being armed as raiders. The advisory noted that neutral merchantmen, including U.S. flag ships, could expect similar actions by the British and that it was the duty of the U.S., as a neutral, to prevent such activities in our territorial waters and to assure no interference with our rights on the high seas. The Neutrality Act of 1935, made further restrictive by amendment in 1937, forbade arms exports, either direct or by transhipment, to any belligerent and was looked upon by isolationist groups as the best insurance against U.S. involvement in a European war.

W E Scarborough

In February 1941, VP-52 was at San Juan, P.R., and flew a survey party to British Guiana to inspect a "destroyers-for-bases" site for a future naval air station. No. 7 is moored for an overnight stop on the Essequebo River, upstream from Georgetown.

President Franklin D. Roosevelt issued his first proclamation of neutrality on September 5, 1939, declaring in part that any use of U.S. territorial waters for hostile operations would be regarded as unfriendly, offensive, and a violation of U.S. neutrality.

The Navy had initiated action on September 4, by CNO dispatch to Commander, Atlantic Squadron, directing establishment of air and ship patrols to observe and report by classified means movement of warships of the belligerents within designated areas. The patrol would cover an area bounded on the north by a line east from Boston to latitude 42-30, longitude 65; south to latitude 19; then around the the windward and leeward islands to Trinidad.

The next day CNO amplified his directive by ordering classified contact reports on foreign men-of-war approaching or leaving the U.S. East Coast or the eastern boundary of the Caribbean. Ships sighted by the patrols, both air and surface, were to be identified by name, nationality, estimated tonnage, color, and markings, and were to be photographed whenever possible. Course and speed were to be estimated and all information was to be recorded and reported on return to base.

At Coast Guard Air Station, Charleston, the Coast Guard flew Douglas RD-4, Grumman J2F-2, and Fairchild J2K-2 aircraft on coastal and inshore patrols. In return for shared facilities, VP-52 provided copilots for RD and J2K flights. Building at bottom center was a converted warehouse for squadron shops and offices.

On September 6, Commander, Atlantic Squadron reported to CNO that the patrol was operating and by the 20th, when a revised Atlantic Squadron OpOrder (20-39) became effective, Atlantic coastal waters from Nova Scotia, Canada, to the Lesser Antilles, West Indies, were under daily surveillance by surface and air patrols. Forces involved were primarily patrol planes from Patrol Squadron (VP) 51 (12 PBY-1s), VP-52 (6 P2Y-2s), VP-53 (12 P2Ys), and VP-54 (12 PBY-2s) of Patrol Wing (PatWing) 5 and VP-33 (12 PBY-3s) of PatWing-3, plus four seaplane tenders assigned to the PatWings.

Surface forces were battleships and cruisers of the Atlantic Squadron and their attached OS2U and SOC aircraft of Observation Squadron (VO) 5 and Cruiser Scouting Squadron (VCS) 7. *Ranger* (CV-4) with her air group, and *Wasp* (CV-7), which was not yet in commission. Forty destroyers plus an undetermined number of old

50 Years Ago – WW II

March 19: To assist in the identification of U.S. aircraft on the Neutrality Patrol, fleet activities were authorized to apply additional National Star Insignia on the sides of the fuselage or hull of aircraft so employed.

April 25: USS *Wasp* (CV-7) was commissioned at Boston, Mass., Capt. J. W. Reeves, Jr., commanding.

destroyers (to be recommissioned) and about 15 old submarines were the assigned surface forces.

Aircraft patrols were initiated by the patrol squadrons, deployed to assigned Neutrality Patrol bases – most of them ill-equipped to support aircraft and crews for flight operations at the level required for daily patrols. General orders to the patrols stressed safety of the operations, avoidance of nonneutral acts, and the exercise of care in approaching vessels to avoid actions which might be interpreted as hostile.

VP-51: Deployed PBY-1s to San Juan, P.R., departing Norfolk, Va., on September 12, with first patrols flown on the 13th. The squadron utilized seaplane facilities, including ramp and hangar, of Pan American Airways at the San Juan airport, housing crew and supporting activities in tents on the airport. The site utilized was the area on which the future Naval Air Station (NAS), San Juan would be built, construction starting in 1940. VP-51's patrols covered harbors and shipping lanes in the West Indies from Puerto Rico to Trinidad, with special attention to the southern approaches to the Caribbean through the Lesser Antilles.

VPs 52 and 53: Both continued flying P2Ys from home port Norfolk, patrolling mid-Atlantic coastal shipping lanes, coordinating operations with Atlantic Squadron destroyers. VP-53 had returned to Norfolk September 1 after a regular summer deployment to Annapolis, Md., for midshipman aviation training.

VP-54: Based at Norfolk, deployed a detachment of PBY-2s to Newport, R.I., operating from the Naval Torpedo Factory Air Facility on Gould Island in Narragansett Bay, R.I. Daily searches were coordinated with destroyer surface patrols in the assigned offshore areas.

VP-33: Deployed PBY-3s from Coco Solo, Canal Zone, to Guantanamo, Cuba. Patrols covered the area from Guantanamo to San Juan, coordinated with VP-51, destroyers, and the cruisers *Tuscaloosa* (CA-37) and *San Francisco* (CA-38).

Cruisers *Quincy* (CA-39) and *Vincennes* (CA-44): Patrolled sea approaches between Norfolk and Newport. Battleship Division 5 and

Courtesy of Fred C. Dickey

VP-15 (later redesignated -53 and -73) P2Y-2 off Breezy Point, NAS Norfolk, Va., Spring 1939. Neutrality Patrol star on bow was not authorized until March 19, 1940.

PH2 W. J. Henning

52-P-10, Spring 1941. These PBY-5s were transferred from San Diego-based VP-14 in January 1941. To expedite operations and conserve funds, VP-14 markings (black stripes on tail) were retained and only squadron numbers changed.

Courtesy of Capt. Wm. Hardaker

CGAS Charleston hanger shared with VP-52 for major P2Y maintenence. Coast Guard aircraft in photo, left to right: J2K, J2F, RD, and two J2Fs.

Ranger were based at Norfolk as a reserve force.

Experience during the first month of operations dictated changes in the deployment of the forces to improve coverage of the assigned areas. VP-52 moved to the U.S. Coast Guard air station located on the Cooper River in the Charleston, S.C., navy yard in December. Renovation and modification of existing buildings provided facilities to house crew and squadron administrative and maintenance activities. The air station supplied a seaplane ramp, aircraft parking area, and shared space in a small hangar. Officers were quartered in the Coast Guard BOQ. Moving the squadron proved a major exercise in itself.

VP-52 had been home-ported at NAS Norfolk since it was first commissioned as VP-14 on November 1, 1935, when the station was NAS Hampton Roads. As a self-supported squadron, a full allowance of maintenance equipment, spares, records, and myriad other authorized and unauthorized odds and ends accumulated required packing and loading aboard railroad cars for the move south. The operation was further complicated by a full schedule of training flights in addition to daily patrols of the assigned areas offshore.

VP-33's initial move to Guantanamo posed problems similar to those of VP-52, somewhat diminished by the in-place facilities of the fully operational naval station there. However, the October move of the VP-33 detachment to Naval Station, Key West, Fla., long out of service and moth-balled, demanded much effort by the plane crews and their support personnel. Key West businesses and the population in general were so pleased by the arrival of the PBYs and several submarines that a celebration, including a parade on the main street, was staged! A VP-33 contingent turned out for the event. The Key West detachment flew regular patrols from Dry Tortugas to Miami, Fla., and to the Yucatan Peninsula in Mexico, covering the Florida Straits and the Yucatan Channel.

In November 1939, VP-53 exchanged P2Ys for a mixed bag of older model PBYs – 3 PBY-1s, 3 PBY-2s, and 3 PBY-3s. In February 1940, the squadron moved to Key West, remaining there until April 1941 when it returned to Norfolk and exchanged the old PBYs for new PBY-5s.

Courtesy of David W. Lucabaugh

Great Lakes BG-1 of USS Wasp Bombing Squadron 7 at Chambers Field, NAS Norfolk, in 1940. Obsolescent aircraft were frequently utilized during preliminary training of new air groups. Wasp was not yet commissioned but her air group was assigned to the Neutrality Patrol.

Also in October of that year, *Ranger* and her air group had joined the Cruiser Division (CruDiv) 7 ships and their VCS-7 SOCs to form a strike group with long-range search capability, on standby to fill gaps in the areas covered by the regular patrols. In November, a surface patrol of destroyers was established in the Gulf of Mexico to track shipping in that area. The Navy patrol effort was expanded by Coast Guard surface and aircraft coverage of inshore areas and cooperation by exchange of information, assuring complete area coverage and recording of all contacts.

On October 16, Commander, Atlantic Squadron expanded his earlier orders to the patrol forces with the issuance of OpOrder 24-39. In addition to reporting foreign men-of-war, "suspicious" vessels were to be noted and both they and men-of-war were to be tracked until their actions were considered satisfactory. All units of the Atlantic Squadron were included in the task organization but the major portion of the patrol activity was conducted by the patrol squadrons and destroyers, the latter primarily responsible for developing (visually checking at close range) contacts made by aircraft. Employment of the battleships was minimized and the ships of CruDiv-7 were soon withdrawn from the patrol for other duties.

The scope of Neutrality Patrol operations gradually expanded during 1940. Concurrently, the aircrews normally required training in all aspects of patrol plane operations –

Murphy Collection via Fred C. Dickey

Vought SBU-1s of Scouting Squadron 42 and other USS Ranger air group squadrons based at NAS Norfolk in 1940. Ranger and Wasp air groups were included in the aviation assets of the Neutrality Patrol.

tactics, instruments, navigation, gunnery, bombing, etc. For example, VP-52 deployed detachments from Charleston to advanced bases such as Parris Island and Winyah Bay (both in S.C.) for operations with the aircraft tenders *Owl* (AM-2) in August and *Thrush* (AVP-3) in October. In addition to regular patrols, a normal schedule of training flights was flown from the advanced bases.

In spite of the increasing tempo of operations and the resulting workload, the effort proved well worth its costs; the experience markedly enhanced the readiness of Neutrality Patrol squadrons for the tasks that lay a scant year ahead in WW II.

The war in Europe during 1940 saw the apparently invincible German forces defeat France and threaten to bring Britain to her knees by the blitz on her cities and the success of the U-boat actions in the Atlantic. The specter of a British defeat and the danger to the United States of such an event were obvious and dictated further expansion of the forces in the Atlantic. In the famous destroyers- for-bases agreement negotiated by President Roosevelt and Winston Churchill in September 1940, sites for bases in the Atlantic and Caribbean were exchanged for 50 WW I destroyers. Two of the sites, Argentia, Newfoundland, and Bermuda, presented rent-free as a "gift" for 99 years, would become key elements in the Battle of the Atlantic. Six other sites, in the Bahamas, Jamaica, St. Lucia, Antigua, and British Guiana, were leased, rent-free for the same period.

Both air and surface elements of the patrol force expanded during 1940 as the scope of the operation grew. PatWing-5 at Norfolk commissioned VP-55 on August 1 and VP-56 on October 1. Both were to be equipped with PBM-1s but problems with the new planes delayed deliveries and severely restricted squadron training. Eventually, the squadrons would be merged into a single command, designated VP-74, with all early production PBMs assigned. On November 1, 1940, the Atlantic Squadron was redesignated Patrol Force, Atlantic Fleet and on December 17, then-Rear Admiral Ernest J. King relieved Rear Admiral Hayne Ellis as Commander, Patrol Force. On February 1, 1941, the augmented and reorganized patrol forces were established under Admiral King as the U.S. Atlantic Fleet.

This force reorganization included establishment of task forces responsible for operations in specific sectors of the Atlantic. Task Force 1 – composed of battleships, cruisers, and destroyers – covered the trade routes to northern Europe. Task Force 2 – aircraft carriers, cruisers, and destroyers – patrolled the central North Atlantic. Task Force 3 – cruisers, destroyers, and mine craft – was based at San Juan and Guantanamo to cover the South Atlantic.

Task Force 4 was Support Force, Atlantic Fleet, under Rear Admiral A. L. Bristol, established on March 1, 1941. The support force included destroyers and the patrol wing, with VPs 51, 52, 55, and 56, and the tenders *Albemarle* (AV-5) and *George E. Badger* (AVD-3) attached. On April 5, VP-53 rejoined the wing at Norfolk and, during the month, exchanged its old model PBYs for new PBY-5s. The establishing directive for the support force required preparation of the force for service in high latitudes and emphasized training in antisubmarine warfare, protection of shipping, and defense against air, submarine, and surface raider attack. Primary mission of the force was operations from North Atlantic bases to prevent Axis forces from interfering with the shipment of war material from the United States to Great Britain.

Other air and surface forces originally operating with the Neutrality Patrol were subsequently designated Task Force 6 and elements based north of the Gulf and Caribbean became the Northern Patrol. The mission of the Northern Patrol, operating from bases at Norfolk, Bermuda, Narragansett Bay and Argentia, would be to investigate reports of potential enemy vessels and other non-American activity in the North Atlantic. This task gave the PatWing Support Force major responsibility for the advance of Naval Aviation to the north and east to insure safe passage of war materials to Britain.

Prior to establishment of the PatWing Support Force, a number of squadron redeployments were directed. VP-54 moved to Bermuda, based on the tender *George E. Badger* and began Neutrality Patrol operations on November 15, 1940. In December, VP-52 exchanged its P2Y-2s (last of the model in fleet service) for PBY-5s. The P2Ys were ferried from Charleston to Pensacola for use there in the training squadron. Replacement PBY-5s were ferried cross-country from San Diego by VP-14 and delivered to VP-52 at Pensacola during January. VP-52 flew the new planes, as received, to its old

Courtesy of Fred C. Dickey

VP-53's hangar (right) and parking area at Breezy Point, NAS Norfolk, late Summer 1939. The squadron deployed to Annapolis, Md., for midshipman aviation training every summer. VP-52 occupied the hangar on left.

home port, NAS Norfolk. The move from Charleston was essential as the facilities there could not support PBY operations.

On February 1, 1941, VP-52 was transferred to San Juan for what proved to be a brief taste of tropical operations. The squadron joined VP-51 on still-unfinished NAS San Juan, sharing the Neutrality Patrols through the West Indies to Trinidad. In addition to the patrols there were mail runs and survey flights to island sites of the new stations being built under the destroyers-for-bases agreement. At the end of February, VP-52 was ordered back to Norfolk and, on March 3, all planes departed for the return. For the remainder of the month, the squadron flew patrols and convoy escort and continued intensive crew training at Norfolk.

On April 8, 1941, VP-51 moved to NAS New York (Floyd Bennett Field). Neutrality Patrol activity was expanding, with convoy escort and ASW search in the northern offshore shipping lanes an increasing proportion of the aircraft effort. During April, VP-52 moved again, to NAS Quonset Point, R.I., another new naval air station under construction. Although this was to be home port, preparations began immediately for the deployment of the squadron to Argentia, Newfoundland, to be based on the PatWing Support Force flagship, *Albemarle*. On May 24, VP-53 was ordered to move from Norfolk to Quonset Point. Construction of the base at Argentia, another of the destroyers-for-bases sites, had not yet begun. The deployment of VP-52 would be the first move toward implementing the mission of the Northern Patrol of the Support Force. The major North Atlantic shipping lanes would now be within range of the PBYs for convoy escort.

Albemarle arrived at Argentia on May 15, with VP-52's ground crew and squadron gear onboard. Preparations for aircraft operations were begun with a seaplane mooring area designated and buoys laid in the southwestern end of Placentia Harbor near the ship anchorage. This operating area was adjacent to the peninsula on which NAS Argentia would eventually be built.

After an attempt on May 18, aborted because of below-minimums weather in Argentia, all 12 VP-52 planes arrived on May 20. The weather was again marginal but, utilizing *Albemarle*'s radio beacon, all aircraft made instrument approaches and safe landings. The next day, the weather was excellent and all crews were scheduled for and flew area familiarization flights. This proved most fortunate because the weather was below minimums on the following two days and, on the 24th, the squadron was ordered to fly a major operation – one of the least-known events in pre-WW II Naval Aviation history. ■

Don't miss Part 2 in NANews, May-June 1990.

Note: The writer served in VP-52 (later VP-72) from 1939 to 1943. This account is based on personal recollection, his diary, letters, review of VP-52 flight logs, correspondence and interviews with personnel of VP-52 and other squadrons that flew the Neutrality Patrol, squadron histories, and other historical sources.

Naval Aviation Depot, Cherry Point:

Making Government Work for the People It Serves!

Photos by Joan A. Frasher

Sitting forlornly in a hangar at Cherry Point, N.C., an H-46 *Sea Knight* and various other military aircraft await the gifted touch of the artisans at the Naval Aviation Depot (NADep). Part-time magicians, part-time wizards, full-time aircraft repair geniuses – the personnel at the Cherry Point depot have built a reputation second to none in providing cost-effective aeronautical maintenance.

The Cherry Point NADep, one of six naval aviation depots operated by the Naval Air Systems Command, is the only one located aboard a Marine Corps installation and managed by Marine officers. Its predominately civilian workforce provides maintenance, engineering, and logistics support on a variety of military aircraft, engines, and components. Maintenance performed by the NADep is the most comprehensive available outside the facilities of manufacturers and contractors.

The NADep is an industrial complex comprised of more than 90 buildings encompassing approximately one and a half million square feet. It has its own heat treat furnaces, a manufacturing foundry, "clean rooms" for precision instrument repair, machine shops with some of the most current models of lathes and milling machines, an electron beam welder, and high-technology devices such as robots and lasers.

Cherry Point is the only depot repair point in CONUS for the OV-10 *Bronco* and the AV-8 *Harrier*. It is also the repair agency for the Navy and Marine F-4 *Phantom* and C-130 *Hercules*. In addition to being the East Coast repair site for the H-46 *Sea Knight*, the NADep performs maintenance on the A-4 *Skyhawk*.

NADep's Power Plant Division has responsibility for refurbishing several aircraft engines, such as the T58 used in the H-46, the T76 for the OV-10, the T400 which powers the *Huey* and *Cobra* attack helicopters, the F402 that gives the AV-8 its unique vectored-thrust flight capability, and the J79 which can propel the F-4 at speeds of Mach 2 plus. Additionally, the T58-400 engine for the VH-3 presidential-executive helicopters is serviced at Cherry Point.

Aircraft subassemblies, avionics, and engine accessories are revamped through the depot's components program. Cherry Point has the skills, equipment, and facilities to repair more than 9,000 different types, including such things as pressurization units, air starters, valves, gauges, regulators, and pneudraulic components.

Through another support program, NADep stands ready to provide immediate assistant to fleet units. Examples of the various "on-call" services offered include emergency field team repairs, field team modifications, fleet training, engineering support, calibration, and others through a customer service program. Depot field teams can be deployed anywhere in the world, land or sea, on short notice. Some of the more complex field team undertakings in recent years include the recovery of three crash-damaged LC-130 *Hercules* stranded in Antarctica.

NADep Cherry Point is the East Coast depot for a variety of ground support equipment commonly referred to as "yellow gear," which encompasses various nonavionics items ranging from aircraft tow tractors to fire trucks used aboard aircraft carriers.

Since the depot opened as the Assembly and Repair Department in 1943, it also has been known as the Overhaul and Repair Department and the Naval Air Rework Facility. During its 46 years of operation, the depot has continued to strengthen its role in providing "Service to the Fleet," which is the depot's motto. NADep has continued to modernize and expand its facilities to keep pace with advancing technology.

Recent examples of its expansion were seen with the dedication of three new facilities in January. One of the facilities, the Naval Engine Airfoil Center, will eventually have primary responsibility for repairing steel, titanium, and superalloy gas turbine engine blades and vanes from throughout the Department of Defense. The highly automated facility, once fully operational, will save $20 to $40 million annually. This savings will be realized through the depot's repair of worn and damaged blades previously "scrapped."

A Vertical/Short Takeoff and Landing Aircraft Repair Facility was also dedicated. The 160,800-square-foot building will provide a hangar and work space for numerous shops connected with crash damage repairs on the AV-8B, as well as full repair service.

The third structure dedicated in January was an engine test facility for the *Harrier*'s F402 engine. Valued at $8.8 million, the test cell will significantly lower noise levels and reduce the time required for testing the Rolls Royce engines used in the AV-8.

Innovative management techniques have led to the depot's preeminent leadership status among depots. It has consistently received high ratings for its management effectiveness and productivity.

In FY 88, the depot became the first Department of the Navy organization to implement an activity-wide Productivity Gain Sharing Program similar to those in the private sector. This program has proved highly successful. During the first two years under gain sharing, the depot's labor productivity increased by an average of six percent and showed measured savings in labor and material of almost $12 million.

Gain sharing encourages employees to be more resourceful and work harder. At the completion of each quarter, employees are eligible to receive cash awards based on productivity gains realized by the depot. Since each worker has an equal stake in the business, each gets an equal share of the gain-sharing pool. The first gain-sharing checks were awarded in February 1988.

Operating under a philosophy known as total quality management (TQM), the depot has emerged as a leader in productivity improvement in both the government and private sectors. This style of management actively involves managers and employees in problem-solving in matters affecting productivity and quality. Employee involvement is vital because it is the people performing the work who often have the best ideas on how to improve procedures. Process and systems experts representing all relevant departments meet to investigate, gather data, and make recommendations to management on the best method to improve the existing system. These groups are comprised of knowledgeable men and women who have a firm understanding of depot processes.

TQM is based upon Dr. W. E. Deming's Fourteen Management Principles as applicable to depot business operations. Through its management leadership under Colonel Jerald B. Gartman, NADep's C.O., the depot continues to be a model of TQM implementation for both government and private industry.

This has been demonstrated by the depot's winning the Institute of Industrial Engineers Award for Excellence in Productivity Improvement, the Department of Defense Citation for Outstanding Achievement in the Implementation of TQM, the Secretary of Defense Award for Productivity Excellence, and being designated as the first Office of Management and Budget Quality Improvement Prototype under the President's Productivity Improvement Program. In addition, NADep contributed to the Naval Air Systems Command's receiving the 1989 Presidential Award for Quality and Productivity Improvement.

The depot has shown an extraordinary commitment to quality improvement and has focused its attention on satisfying its customers. The NADep at Cherry Point is an excellent example of how to make the government work better for the people it serves. ■

Many thanks to Steve Green, PAO, and NADep personnel for contributing to this story.

An H-46 awaits the gifted touch of the artisans at NADep Cherry Point.

NADep employees discuss a problem with a turbofan engine in one of the repair facilities.

Six Hall of Honor Selectees to be Enshrined


Frank A. Erickson


Henry C. Mustin


James S. Russell

On October 14, 1981, the Hall of Honor in the National Museum of Naval Aviation, Pensacola, Fla., was dedicated to those who have made a major contribution in the field of aviation. Since that time 36 aviation greats have been enshrined. On May 10, 1990, six more will be honored:

Captain Frank A. Erickson, USCG (deceased) – Capt. Erickson distinguished himself as the first Coast Guardsman to qualify as a helicopter pilot. He also organized a detachment and trained the pilots who participated in joint U.S.-British evaluation trials aboard the British SS *Daghestan* in November 1943. The British made him an honorary member of the Military Division of the most Excellent Order of the British Empire for his work with helicopters and the training of British helicopter personnel.

Capt. Erickson also made the first lifesaving flight ever performed by helicopter, in January 1944, piloting the craft from New York City to Sandy Hook, N.J., through snow and sleet to deliver blood plasma to survivors of an explosion on USS *Turner*. Other aircraft were grounded because of poor weather conditions.

In February 1945, he received an official commendation for the development of the helicopter rescue hoist and related lifesaving equipment.

Capt. Erickson retired from the Coast Guard in 1954.

Captain Henry C. Mustin (deceased) – Characterized as the "father of naval aviation" by the late Admiral William A. Moffett, Capt. Mustin was described as an officer who devoted his entire energy, health, and life to furthering the development of Naval Aviation, especially as an arm of the fleet. It was nearly 10 years after his U.S. Naval Academy appointment that Mustin began his active aviation career, as executive officer of USS *Mississippi*, which had been designated Station Ship at Pensacola, Fla., for housing aviation personnel assembled for training.

During the 1914 Mexican campaign, he was in command of the Naval Aviation activities at Vera Cruz. The seaplanes from *Mississippi*, under his command, flew reconnaissance flights for 43 consecutive days, the first U.S. Navy planes to operate under enemy fire.

In 1920, he became Assistant Director of Naval Aviation, Bureau of Aeronautics, where he helped shape the air policy of the Navy and determine the position of the Bureau of Aeronautics in the naval organization.

Admiral James S. Russell, USN (Ret.) – After designation as a Naval Aviator in 1929, he earned his M.S. degree in aeronautical engineering. In 1942, then-LCdr. Russell commanded and led VP-42 into action against the Japanese during the Aleutian Islands campaign, and was awarded the Distinguished Flying Cross, an Air Medal, and the Legion of Merit for his leadership skills.

In subsequent years, Russell had tours of duty in the Office of the Chief of Naval Operations and the Bureau of Aeronautics, and was Chief of Staff to Commander, Carrier Division Two. He then commanded the carrier *Coral Sea*, followed by assignment in the Office of the Chief of Naval Operations, where he was promoted to the rank of Rear Admiral in 1953.

In 1955, he became the Chief of the Bureau of Aeronautics. He was awarded the Collier Trophy in 1956, sharing the award with C. J. McCarthy of Chance Vought Aircraft, for the development of the supersonic *Crusader*, the first ship-based fighter to fly faster then 1,000 miles per hour. He served as Vice Chief of Naval Operations as a four-star admiral from 1958 to 1961.

In 1965, Adm. Russell retired from active duty after serving his last tour as Commander in Chief, Allied Forces, Southern Europe.

Rear Admiral Alan B. Shepard, Jr., USN (Ret.) – Renowned as the first American in space, Shepard has a long history of contributions to the aerospace community. Designated a Naval Aviator in 1947, he also served as a flight instructor, operations officer of VF-193, and received test pilot training at Patuxent River, Md.

In 1959, he was selected as one of seven military test pilots for the manned space program. On May 5, 1961, in a Mercury spacecraft, he was hurled 115 miles into the atmosphere, at 5,100 miles an hour. The historic flight, from liftoff to splash-down, lasted only 15 minutes. Shepard was presented the National Aeronautics and Space Administration's Distinguished Service Medal for outstanding contributions to space technology.

In 1969, RAdm. Shepard became Chief of NASA's Astronaut Office. On August 1, 1974, he retired from active duty.

Igor I. Sikorsky (deceased) – Born in Russia on May 25, 1889, Sikorsky decided early in life to make aviation his career. In 1910, he attempted his first flight in a crude, wooden-frame, helicopter-type craft with a three-cylinder Anzani engine. Unsuccessful, Sikorsky turned to conventional aviation. He established his place in history by designing the world's first four-engine airplane; the military versions were used as bombers during WW I.

In 1919, the Russian revolution forced him to leave his homeland and live in America, where he continued building planes. The twin-engined S-34 was a radical departure from conventional designs and the forerunner of a family of amphibians that would soon make aviation history. It was followed by the S-38 amphibian, on whose wings the Sikorsky company finally climbed to success.

In 1939, Sikorsky designed the VS-300. When the helo made its first hops into the air, it was the 50-year-old Sikorsky who sat at the controls. It was a remarkable machine, but it couldn't fly forward. That didn't stop Igor. He not only solved the problem but set a new world record for helicop-


Allan B. Shepard


Igor I. Sikorsky


George A. Spangenberg

ter endurance on May 6, 1941, hovering for 1 hour, 32 minutes, 26.1 seconds. Within a month his company received its first government contract. America's helicopter industry was about to be born.

George A. Spangenberg – Mr. Spangenberg was considered the leading government technical authority for evaluation, selection, and design of Navy aircraft weapons systems. Since 1939, as Assistant Director and later Director of the Evaluation Division, Bureaus of Aeronautics and Naval Weapons and Naval Air Systems Command, he provided techinical direction in the establishment of design requirements, design selection, and program initiation for all aircraft procured by the Navy.

Spangenberg, more than any other single Navy civilian, was a primary and the most knowledgeable force in the formulation of the Navy's position on all important aircraft programs, including projects such as the F-111, F-14, and S-3.

Among other awards, in 1963, he was selected by his colleagues to receive the annual Association of Engineers and Scientists Bureau of Naval Weapons Award for his service.

In June 1973, Mr. Spangenberg retired as the Director, Evaluation Division, Naval Air Systems Command, but continued his involvement in aviation as an informal consultant on aircraft policy. ■

Association of Naval Aviation Bimonthly Photo Competition

Capt. Felix R. Tormes, MC, USNR-R, won the first 1990 bimonthly Association of Naval Aviation Photo Contest. Right: from the back seat of a T-28 *Trojan* while in flight training at Saufley Field, NAS Pensacola, Fla., in 1972, he captured the instructor pilot's image reflected off the canopy. AW3 Nylander of VP-46 received honorable mention with his photo, below, of the *Blue Angel's* C-130 performing a jet-assisted takeoff during a 1989 air show at NAS Moffett Field, Calif.

Records

Several units marked **safe flying time**:

HC-5, 10,000 hours and 2 years
HM-18, 3 years
HMH-362, 28,000 hours and 6 years
HS-2, 11,450 hours and 4 years
HS-3, 28,063 hours and 8 years
HS-9, 40,000 hours and 11 years
HS-12, 7,000 hours and 2 years
HS-85, 34,836 hours and 15 years
HSL-31, 4 years
HSL-32, 17,500 hours and 2 years
HSL-33, 1 year
HT-8, 365,000 hours and 12 years
VA-52, 8,700 hours and 2 years
VA-155, 6,383 hours and 2 years
VAQ-135, 10 years
VAQ-136, 3,200 hours and 2 years
VAQ-209, 12 years
VAW-114, 19 years
VF-74, 2 years
VFA-192, 25,000 hours and 6 years
VFA-305, 50,965 hours and 13 years
VMA-331, 5,000 hours and 1 year
VMA(AW)-121, 2 years
VMA(AW)-242, 10,000 hours
VMFA-451, 45,900 hours and 12 years
VMFP-3, 55,000 hours and 8 years
VP-4, 18 years
VP-8, 11 years
VP-9, 65,300 hours and 11 years
VP-91, 82,000 hours and 19 years
VQ-4, 200,000 hours and 17 years
VRC-30, 90,000 hours and 14 years
VS-24, 25,000 hours and 5 years
VS-28, 24,000 hours and 16 years
VS-37, 30,700 hours and 7 years
VT-10, 73,000 hours and 3 years
VT-22, 61,000 hours and 4 years
VT-27, 100,000 hours and 2 years and
VX-5, 32,776 hours and 6 years.

Cdr. L. S. Jacobsen, C.O. of VA-37, recently completed his 1,000th trap. Cdr. Jacobsen has accumulated over 4,000 mishap-free flight hours in Navy tactical aircraft.

A **VX-1** detachment aircrew recently set a Naval Aviation record for flying the longest nonstop air-refueled flight in the E-6A *Hermes*. The aircraft took off on November 6, 1989, at 6:10 a.m. PST from Travis AFB, Calif., and landed 23.4 hours later at 5:34 a.m. PST on November 7 at McChord AFB, Wash. The Take Charge and Move Out (TACAMO) aircraft refueled in flight twice, utilizing USAF KC-10s from March AFB, Calif.

Rescues

HS-12 from *Midway* (CV-41) rescued six Philippine fishermen from the South China Sea early in December when their small fishing boat overturned about 180 miles northwest of Manila off the west coast of the island of Luzon. The SH-3 *Sea King* flew the men to *Bagley* (FF-1069) for physical examination. One fisherman suffered a fractured leg and ankle while the others only suffered minor injuries.

HMM-161 of MAG-16 recently located and coordinated the rescue of two downed fliers in the Alaskan wilderness. GySgt. Donald D. Goodner, crew chief of a CH-46 *Sea Knight*, noticed a reflection from a beach. Thinking the helo was being signaled, the crew followed it about 15 miles and discovered the wreckage of a small private plane. The survivors had started a signal fire to attract the helo. One of them had been a survival instructor for the Air Force and had taken appropriate measures to increase their chances of survival and rescue.

The CH-46 radioed *Duluth* (LPD-6) which requested an Army UH-60 *Blackhawk* SAR helo to pick up the survivors and fly them back to the ship. Both helos and the ship were in Alaska as part of the task force assisting the cleanup of the oil spill in Prince William Sound.

Kudos

Cdr. Philip Voss, C.O. of VS-27, received an Air Medal for meritorious achievement as the pilot of an S-3A *Viking* assigned to VS-30 embarked in *Saratoga* (CV-60) deployed to the Med on September 17, 1989. Under direct orders from the Commander, Sixth Fleet, Voss planned and executed a highly sensitive national security-related mission during which, for the first time, a Middle Eastern terrorist wanted for crimes against U.S. citizens abroad was apprehended by the FBI and extradited to the U.S. to stand trial. Accompanied by two FBI agents, a Navy flight surgeon and the terrorist, Voss displayed great physical stamina and flying skills while he single-handedly piloted his aircraft on a nonstop 13.2-hour flight to Andrews AFB, Md. The 4,000-nautical mile transatlantic mission included three separate refuelings by Air Force tankers.

LCol. Peter Jacobs, C.O. of VMA(AW)-224, was selected as the 1989 Marine Tailhooker of the Year. The annual award recognizes the Marine pilot who through tactical operations, exercise participation, and advancement of new tactics/techniques best advanced the support of the Tailhook Navy. LCol. Jacobs has distinguished himself with more than 4,200 flight hours and 530 carrier arrested landings.

VS-38 received the ComASWWing-Pac FY 90 Top Torp Award. The award is designed to enhance MK 46 torpedo effectiveness through recognition of aviation squadron excellence in torpedo loading and delivery within the VS, HS, and HSL communities.

Capt. Raymond M. Wikstrom, ComHelSeaConWing-3, received the Vice Admiral James Bond Stockdale Award for the Atlantic Fleet 1989. Established in honor of the former prisoner of war, the award recognizes the individual who best reflects the high standards of personal example and leadership set by VAdm. Stockdale.

Roger M. Decker, a Naval Air Test Center (NATC) engineer, received the 1989 John Paradis Award. Named for the first technical director of NATC, from 1959 to 1980, it is presented annually to the test center/naval air sta-

tion manager selected for exceptional managerial performance.

Honing the Edge

Taking its title from the Latin word for "unity," **Unitas** is an annual joint naval exercise with U.S. and South American forces working together to promote hemispheric solidarity. The task force ships which made the entire five-month deployment last year were: *Briscoe* (DD-977) and *Richard E. Byrd* (DDG-23), Norfolk, Va.; *Jesse L. Brown* (FF-1089), Charleston, S.C.; and *Manitowoc* (LST-1180), Little Creek, Va. The task force submarine was *Tinosa* (SSN-606), New London, Conn.

Other U.S. units involved were the Reinforced Rifle Company from the 2nd Marine Division, Camp Lejeune, N.C.; two detachments from HSL-32, Norfolk, Va.; P-3C *Orions* from VP-5, Jacksonville, Fla.; and a platoon from SEAL Team Four in Norfolk, Va.

Community relations projects played a strong role in the "people-to-people program" of *Unitas*. In every port, crew members from all five ships volunteered their time to make minor repairs and to paint South American orphanages, hospitals and other charitable institutions.

The **VFA-305** *Lobos* returned from training at NAS Key West, Fla., where they became the first reserve squadron to train in the Strike Fighter Aircrew Readiness Program. Fifty-four F/A-18 maintenance and support personnel assisted 10 *Lobo* pilots in flying 77 training flights over a nine-day period. The training emphasized maneuvering skills and two-plane combat tactics.

Lt. Keith Daill

A VFA-305 F/A-18 and an F-16 Falcon race across the Florida skyline during a training mission at NAS Key West.

Cpl. Michael T. Miller

An AV-8B Harrier attack jet takes off from the newly completed vertical/short takeoff and landing facility on Ie Shima, which will be used for training missions and exercises by Harriers based in Iwakuni, Japan.

Scan Pattern

VP-40 completed renovation of a sonobuoy locker at NAF Kadena, Japan, at a significant savings to the Navy. The project was undertaken as an alternative to constructing a new drive-through building at a cost of over $110,000. The existing structure held an insufficient number of buoys, the buoy racks were rusty, and many buoys had to be stacked on the floor. Sonobuoys require a controlled, humidity-free environment for storage. The old locker had inadequate ventilation and poor air conditioning. The new locker now holds twice as many sonobuoys with the installation of large wall racks. New ventilation and air conditioning systems were also installed.

The National Aviation Club of Washington, D.C., honored three women Naval Aviators at the club's annual Women in Aviation Luncheon on October 19, 1989. Lt. Vicki Schwebach Fischback of VAW-110 was recognized as the top woman Naval Aviator in Naval Air Force, Pacific Fleet; Lt. Wendy B. Lawrence, HSL-30, in Naval Air Force, Atlantic Fleet; and Lt. Cheryl Laws Ridenhour, VT-19, in the Naval Air Training Command.

USAF **BGen. Hale H. Burr**, Deputy Commander, Joint Task Force Middle East, recently visited *Midway* (CV-41) as she cruised off the coast of Oman in the North Arabian Sea. During his stay, Burr had an opportunity to fly with VA-115. After a thorough mission brief, complete cockpit familiarization, and ejection seat checkout, Burr suited up and was escorted by his pilot to what could easily be termed the most hazardous workplace in the world, the flight deck of an aircraft carrier. Once strapped in, the A-6 *Intruder* taxied to the catapult for the general's first cat shot.

Afterwards, Burr made his first arrested landing in the front seat of a tactical jet. Following the flight, the general said he "was very impressed with Naval Aviation, but would stick to the Air Force method. It's safer!"

PH1 Ted Salois

Vice President Dan Quayle (center) stands for the U.S. and Philippine national anthems with RAdm. Roger L. Rich, Jr. (left), C.O. of Naval Facility Subic Bay, and Philippine BGen. Artemio A. Tadiar, Jr. (right), Dep. C.O., Subic Naval Base. Quayle stopped at NAS Cubi Point and Clark AB during his recent three-day visit to the Republic of the Philippines.

VS-32 had the honor of inducting Gen. Colin Powell, Chairman of the Joint Chiefs of Staff, into the ranks of tailhookers. With Cdr. Mark Kikta at the controls, Gen. Powell completed his first arrested landing, aboard *America* (CV-66). The chairman's trap in an S-3A *Viking* was an "O.K. three wire."

At the end of Powell's day-long visit to the carrier, he was able to experience another part of a tailhooker's life – a catapult shot.

PHCS Ron Bayles

Looking like something out of the "Twilight Zone" an AV-8B Harrier prepares to land aboard the amphibious assault ship Belleau Wood (LHA-3).

Change of Command

HCS-4: Cdr. Walt Frazier, Jr., relieved Cdr. W. E. Edwards, Jr.

HS-1: Cdr. Steven J. Tomaszeski relieved Capt. Roy D. Resavage.

HS-2: Cdr. Morton E. McCarthy, Jr., relieved Cdr. Larry Nelms.

HS-3: Cdr. Thomas F. Darcy relieved Cdr. John Hrenko.

HS-5: Cdr. George E. Kovach relieved Cdr. Michael K. Murray.

HS-12: Cdr. Douglas R. Roulstone relieved Cdr. John H. Winter.

HSL-34: Cdr. Paul G. Sherland relieved Cdr. Scott L. Hendrickson.

HSL-42: Cdr. Larrie G. Cable relieved Cdr. Paul A. Laedlein.

HSL-47: Cdr. James C. Boyer relieved Cdr. David A. Rannells.

NAS Cubi Point: Capt. Bruce V. Wood relieved Capt. Frederick H. Vogt.

NAS Keflavik 0293: Capt. John L. Foster relieved Capt. Robert P. Gick.

NAS Willow Grove: Capt. Stephen T. Keith relieved Capt. James R. Shapard III.

NavTraSysCen: Capt. Ernest L. Lewis relieved Capt. C. D. Rowley.

VA-42: Cdr. John T. Meister relieved Cdr. Stephen H. Baker.

VA-115: Cdr. Terry Toms relieved Cdr. Dave Polatty.

VAQ-135: Cdr. J. B. Harris relieved Cdr. Mark S. Caren.

VAQ-142: Cdr. Ed Gordon relieved Cdr. Baker Robert Hamilton.

VF-2: Cdr. David L. Jackson relieved Cdr. Marvin T. Serhan.

VF-103: Cdr. Donald J. Santapaola relieved Cdr. James F. McFillin.

VFA-15: Cdr. Brian Calhoun relieved Cdr. Milton Smith.

VFA-83: Cdr. Dennis Gillespie relieved Cdr. Mike Longworth.

VMA-131: LCol. James J. Kuzmick relieved LCol. Edward L. Bishop III.

VMA(AW)-121: LCol. Gayle Adcock relieved LCol. Peter Jacobs.

VMA(AW)-242: LCol. Tom E. Sulick, Jr., relieved Col. Carl H. Ertwine.

VMFA-314 LCol. George G. Stuart relieved Col. Richard L. Herrington.

VP-50: Cdr. Fred Carter relieved Cdr. J. E. Boyington, Jr.

VP-64: Cdr. John J. Cahill relieved Cdr. Kenneth J. McNamara.

VP-69: Cdr. Robert Passmore relieved Cdr. Robert Lundstrom.

VR-52: Cdr. M. B. Bryant relieved Capt. A. H. Geis.

VS-37: Cdr. Robert H. Keepper relieved Cdr. Charles T. Gamber.

VTC-22: Cdr. Michael L. Haskins relieved Cdr. Francis X. Kraemer.

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

Cloud Seeding

Flying is easy during periods of cloudless skies, but out of the cockpit and back home (if you are on shore duty) watering the lawn may be a problem as the grass turns brown. Even the media senses a story when the weather is unexpectedly dry, and heads for an interview with the nearest farmer. Editorials on cloud seeding become more frequent. But as Bob Riggio of the Texas State Commission said during a recent interview about his state's water problems, "You can't make clouds of blue sky." He is absolutely correct! Cloud seeding is attempted only when clouds are present.

Something you probably hadn't thought much about when flying

through them, or even considered when watching a sunset, is that clouds are composed of tiny water droplets ranging from 20 to 60 microns in size (one micron is one millionth of a

meter) and when magnified appear as tiny little spheres. Each droplet is formed around a microscopic piece of airborne debris. The most common nucleus is salt wafted aloft by heavy seas and surf. Flight deck crewmen responsible for aircraft maintenance can tell a few stories about salt spray on their machines! Other nuclei include sulphur dioxide particles from smoke stacks and specks of dust carried by gusty winds from a newly plowed field. But some nuclei have a greater affinity for attracting moisture than others. Salt probably heads the list. Just check the salt shaker in the wardroom or mess deck during a period of high summer humidity.

The differences in the capability of cloud nuclei to attract more moisture are well recognized in the art of rainmaking. This is the basic reason for introducing additional chemical materials into a cloud – to make it precipitate. Some clouds need the additional help. The most commonly used additive is silver iodide. It is normally introduced into an existing cloud at an altitude where supercooled water droplets are found, usually around 15 degrees F. If successful, the silver iodide attracts multiple droplets which then fall as rain.

Research on changing natural weather phenomena through cloud seeding has stagnated over recent years due to cost. The good news is that with the introduction of water resources on the commodity market in some western states, much like gas and oil, additional research dollars may be forthcoming. The bad news: until the art is perfected, you may still be on water-hours at some of the more exotic USN installations outside CONUS.

Water Sampling Under the Ice: Thule, Greenland

By JO1 Milinda D. Jensen

The September-October 1989 issue of Naval Aviation News told the story of "ICEX-1-89: Survival in the Arctic." In October of that year, a group of military personnel and civilian scientists traveled to Thule, Greenland, as liaison for the 1990 ICEX sorties. During this time scientific data gathering was conducted to provide information to help with the success of ICEX-90. Water sampling was one of those missions.

It's a game of seek and find. Today it is done in conditions other than normal. The twilight makes visual sightings difficult. This time of year makes finding a lead (opening in the ice) almost an impossibility. Yet it is all part of a scientific data-gathering mission that will someday make year-round operations in the Arctic "real time."

"We're measuring the ambient noise. We need to know what it is like in order to understand what signals to look for when we're doing other work," said Dr. Art Horbach, electrical engineer, Naval Air Development Center, Warminster, Pa.

In order to gather this data, pairs of buoys are dropped into openings in the ice, which is especially difficult when temperatures are dropping and leads are icing shut.

Needless to say, operating in these conditions poses unique problems. "The leads are smaller and there are places where the buoys will go down, but sometimes there's no opening for them to resurface," commented AW2 Dan Marcus, an antisubmarine warfare operator with VP-11, Brunswick, Maine. "Some buoys get their antennas twisted and we can't get a reading. So even though the buoy is functioning we can't get the information from it," he added.

On this particular mission five pairs of buoys were dropped. "One pair went through soft ice but didn't respond. Another pair hit the snow. We received data from the three ambient noise buoys, and two curves for temperature data," Dr. Horbach stated. From his perspective as a scientist, the mission was a success in several ways. "We learned some things from this sortie. We were surprised that we could operate as much as we did with the minimal lighting conditions. And it brings up other questions, such as, 'If we were working with light from a full moon, how much more could we achieve?'" he questioned.

From the crew members' standpoint, everyone had a share of success during the mission. "It's a learning experience for me in the sense that I normally wouldn't release buoys; the pilots generally punch them out," commented AD2 Darren Mathy, a VP-11 flight engineer. While buoys are being dropped, the pilot and copilot are busy visually sighting leads.

For the scientist onboard, it's a hectic time of taking notes and hoping that equipment functions.

"This is on the order of homework. We need to know how often we can do this. Can we do it most times of the year? In the dark?" Horbach queried. "By verifying buoy models through the data, we can use this information to help in future operations like ICEX-90." ■

A sonobuoy that has surfaced through the ice (April 1985, Central Arctic)

PROFESSIONAL READING

By Cdr. Peter Mersky, USNR-R

Layman, R. D. *Before the Aircraft Carrier: The Development of Aviation Vessels 1849-1922*. U.S. Naval Institute, Annapolis, MD 21402. 1989. 128 pp. Illustrated. $19.95.

There are many surprises in this slim volume about the early development of aircraft "carriers." While common conception holds the U.S. and Great Britain as the first exponents of aviation "vessels," the reader will be interested to learn that Japan and Czarist Russia were among the earliest developers and operators of such ships. In fact, the first air-sea battle occurred on November 27, 1914, when Japanese aircraft engaged units of German and Austro-Hungarian ships in China. Russian seaplanes launched from their carriers sank a Turkish collier on February 6, 1916, the largest merchant ship lost to air attack during WW I.

With many rare photographs from the author's collection, as well as those borrowed from private collections, this book fills a large gap in the history of aviation-capable ships. I highly recommend this effort for an unusual look at the true beginnings of today's capital warship.

Terzibaschitsch, Stefan. *Aircraft Carriers of the U.S. Navy, 2nd Edition*. U.S. Naval Institute, Annapolis, MD 21402. 1989. 352 pp. Illustrated. $39.95.

Orginally published in German, this book is not an operational history, but it is a good ready reference. However, it does not include the large class of escort carriers which made such a significant contribution to America's war effort. Elevation drawings for the large carriers are shown in a tipped-in manner, requiring the reader to turn the book 90 degrees. This presentation is usually avoided by knowledgeable book designers. And the text suffers from translation problems when using Navy lingo, such as "parked" for "spotted" and "mission" for "deployment". Also, aircraft designations lack standardization.

Nevertheless, this book grows on you as you leaf through its pages. There is a lot of information, especially on electronic suites and armament. Most of the ships are well displayed with photos that show details and overall views.

Noted aviation author Robert F. Dorr contributed the following guest book review.

Mersky, Peter. Vought *F-8 Crusader*. Motorbooks International, Osceola, WI 54020. 1989. 199 pp. Illustrated. Indexed. $22.95.

"When you're out of F-8s, you're out of fighters." So proclaimed a generation of fighter pilots who considered the single-seat, single-engine, cannon-armed Vought F-8 *Crusader* the best of the best. Peter Mersky's volume on the design, development, and operational and combat use of the *Crusader* reveals a love of history every bit as strong as the love of Naval Aviators for their F-8. With 160 black and white photos (many unpublished before), 12 color shots, 50,000 words of text and pages of data in appendix form, the book is not merely the definitive volume on the F-8; it sets a standard for all "single aircraft" books.

Most such volumes tell us more than enough about the aircraft but all to little about the men who designed it, maintained it, flew it. Mersky covers the usual details admirably – squadrons, bureau numbers, etc. – but tells the human side in human terms.

Not left out are the Marine Corps, the reconnaissance community, the TF-8A "Twosader," the high-performance F8U-3 *Crusader III*, the foreign users of the F-8, and even civilian F-8s.

The design by Gwyn Lewis relies on lavender, which doesn't feel right. And I think a better cover shot could have been chosen than the pic of an RF-8G dumping fuel. But no matter, Mersky's *Crusader* is as good as they come.

FLIGHT BAG

Women in Naval Aviation

I really enjoyed JO2 Jensen's article, "Women Military Aviators 1989 Convention – Women in Naval Aviation: 15 Years," November-December 1989. But I disagree with the statement, "1978: NAS Moffett Field's VP-50 in California became the first patrol squadron to have women report for duty."

In May 1977 I reported to the Maintenance Department, VP-56, NAS Jacksonville, FL, as an aeronautical engineering duty officer. Other Jacksonville patrol squadrons received female air intelligence officers shortly after my arrival, and women began to report for duty at VP-5 simultaneously with VP-50.

One of my OCS instructors, Lt. Franzia, had served in VP-31 at Moffett Field prior to reporting to OCS in 1973. It appears that by 1978, women in patrol squadrons were already history.

Cdr. Marguerite E. McNiel
AIMD Officer
NAS Moffett Field, CA 94035-5000

I read with interest your November-December 1989 article, "Women Military Aviators 1989 Convention," and was disappointed in the list of milestones. Not only did you fail to mention the dates that the first female Naval Flight Officers earned their wings in the jet and prop community, but what about the significant dates for enlisted female aircrews? And female alumni of the Naval Test Pilot School?

LCdr. Susan Viscovich
COMUSNAVCENT
Pearl Harbor, HI 96860

Ed's note: JO2 Jensen's article was not intended to be an in-depth history. Most of the significant milestones which you mentioned have been covered in previous features (February and November 1981 and November-December 1985). Her story was mostly on the convention and the future involvement of women in Naval Aviation. Unfortunately, in a bimonthly, 32-36 page magazine, we do not often have space to publish a comprehensive treatment of one subject.

Women in AD Rating

I want to congratulate ADC Murphy on her selection as the Navy's Top

Shore Sailor of 1989 (*NANews*, Sep-Oct 89). It is certainly an incredible achievement, and I am honored that a fellow aviation machinist's mate (AD) earned this award.

But I was saddened and angered to read in the article that as of 1982 females were still considered to be "relatively new" in the AD rating. Having worn this rating since 1974 and having fought the same prejudice as ADC Murphy, I am disheartened because as long as the Navy fails to take a realistic look at how long women have been in the nontraditional ratings, our new women will continue to experience the same prejudice and lack of acceptance.

ADCS Carol C. Caman
9237 Via Anita
Santee, CA 92071

Ed's note: The issue which you've raised is well taken. Our records reveal that Navy women entered the AD rating as far back as WW II when 28 female sailors first reported for training at the Aviation Machinist's Mate School in January 1943. Our records do not indicate whether the rating included women after WW II until the early 1970s.

Please be assured that the article wasn't intended to be derogatory, or to upset the professional relationship which exists today among male and female ADs.

We will do our best to ensure that future articles are free of historical errors such as this. Thank you for your concern.

Oops

I enjoy reading your fine publication. I suspect there are not too many "black shoe" readers of your magazine. Therefore, I feel compelled to bring to your attention that the ship you described on page 1 of the January-February 1990 issue as USS *Curts* (FFG-38) is, in fact, USS *Luce* (DDG-38). One thing my tour as surface operations officer on the ComCarGru-8 staff taught me: surface ship recognition drills are better practiced in the ready room than in the photo editor's lab.

Capt Richard T. Sloane
C.O., Service School Command
NTC Orlando, FL 32813-5800

1990 Naval Aviation Ball

The seventeenth annual Washington area Naval Aviation Ball, sponsored by the Assistant Chief of Naval Operations (Air Warfare), will be held on Saturday, April 7, at the Hyatt Regency Crystal City, Arlington, Va.

This formal gathering is open to all active duty and retired Navy and Marine Corps aviators, flight officers and other aviation-related officers, and aviation-supporting corporate personnel. The evening commences with a reception at 1830, followed by a filet of beef dinner and entertainment/dancing. Cost is $85 per couple; the uniform is Dinner Dress Blue or Civilian Evening Dress (Black Tie).

For reservations, contact the Ball Chairman, Capt. Don Riffle, OP-50W7, autovon 223-2626 or (202) 693-2626.

Vinson

In "People-Planes-Places" of your November-December 1989 issue, the caption for the photo of *Carl Vinson* (CVN-70) on page 30 states the ship's weight as 19 million pounds, which is about equal to an Aegis cruiser. I believe the carrier is closer to 190 million pounds.

Lt.(SW) Joseph R. Thien
USS Lynde McCormick (DDG-8)
FPO San Francisco, CA 96672-1238

Ed's note: You're right. Vinson weighs about 205,408,000 pounds. Thanks for keeping us straight.

Out of the Archives...

From approximately 1955 to 1963, the U.S. Navy painted red rescue arrows on its aircraft. We would like to hear from anyone who has documentation on this marking. Why was it painted in red and then changed to yellow? Please contact: Editor, *Naval Aviation News*, Bldg. 159E, Room 512, Washington Navy Yard Annex, Washington, D.C. 20374-1595, autovon 288-4407 or (202) 433-4407.

Reunions, Conferences, etc.

VB-11 reunion, at Association of Naval Aviation Convention, April 4-8, Washington, DC. Contact Ed Wilson, 126 Pfeiffer St., San Francisco, CA 94133, (415) 956-1518.

U.S. Naval Test Pilot School reunion, April 28, Patuxent River, MD. Contact Reunion Coordinator, USNTPS, NATC Patuxent River, MD 20670-5304, autovon 356-4107 or (301) 863-4107.

USS Lexington (CV-2) reunion, May 9-12, Sparks, NV. Contact Walt Kastner, 466 Ivy Glen Dr., Mira Loma, CA 91752, (714) 681-1101.

USS Bataan (CVL-29) reunion, May 9-13, Pensacola, FL. Contact Sando Cosenza, 507 Carsonia Ave., Reading, PA 19606, (215) 779-7175.

USS Belleau Wood (CVL-24) reunion, May 9-13, Williamsburg, VA. Contact Robert L. Ross, 2732 S. US 23, Oscoda, MI 48750, (517) 739-2182.

USS Franklin D. Roosevelt (CV-42) reunion, May 17-20, San Diego, CA. Contact Tex Holland, 2644 Murray Ridge Rd., San Diego, CA 92123, (619) 278-6883.

China Marines reunion, July 1990, Washington, DC. Contact Andy Andriolo, 53 Burnett Ter. #3, West Orange, NJ 07052.

NAS Kaneohe Bay (Oct 39-Jun 50) reunion, May 23-27, Holiday Inn Midtown, Albuquerque, NM. Contact Mynila Billingsley, 8811 Phoenix Ave. N.E., Albuquerque, NM 87112, (505) 298-3324.

USS Long Island (CVE-1) reunion, May 3-5, Grosvenor Inn, San Diego, CA. Contact Raymond McIntosh, 3744 Alta Loma Rd., Bonita, CA 92002, (619) 479-4332.

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.

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