NAVAL AVIATION NEWS

AIR SHOW '81

OCTOBER 1981

Don Whittington's restored F8F Bearcat took third place honors in the Grand Champion Warbird competition at Oshkosh '81. The Grumman fighter never looked so good. Whittington's version featured chrome-plated landing gear parts and stainless steel hydraulic lines.

naval aviation news

Sixty-Third Year of Publication

Vice Admiral W. L. McDonald, Deputy Chief of Naval Operations (Air Warfare)

Vice Admiral E. R. Seymour, Commander, Naval Air Systems Command

STAFF

Captain Ted Wilbur	Head, Aviation Periodicals and History
Captain Dick Knott	Editor
Helen F. Collins	Managing Editor
Charles C. Cooney	Art Director
JOC Kirby Harrison	Associate Editors
Sandy Russell	
Jeanne Gray	Assistant Editor
Harold Andrews	Technical Advisor
Cdr. Chuck Sammons	Contributing Editor

COVERS—Front, Bruce Ashenfelter relives the days of aviation past at the stick of his N2S-3 Stearman during Oshkosh '81. Back, Hap Stein's N3N-3 was a 1941 product of the Naval Aircraft Factory and is frequently mistaken by spectators for a Stearman. (Photos by JOC Kirby Harrison)

Features

Departments

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from the EDITOR'S NOTEBOOK

Punchin' out!
Painting by Ted Wilbur

Most of us at one time or another have quoted Benjamin Franklin's old saw ". . . nothing in this world is certain but death and taxes." In the military career, however, there is another certainty and that is the inevitability of retirement.

And so, after more than 30 years as Naval Aviator, Navy Combat Artist, editor and writer, with wide experience in public affairs, Captain Edward T. Wilbur, USNR, has departed *Naval Aviation News* and the Navy, overtaken by retirement.

Capt. Ted Wilbur was designated a Naval Aviator in 1950 and his first flying assignments were in night fighter and attack squadrons VCs 4 and 33.

In 1954 he became a member of the establishment group for the Naval Safety Center in Norfolk, Va., as graphics director of publications. He then moved on to the job of illustrator of *Approach* magazine, at the Safety Center, from its first issue through February 1958.

Capt. Wilbur served in VX-3 (Special Weapons) and in VS-26, and was a plank owner in VRC-40, the first designated COD squadron. He was officer in charge of flight support missions in the *Mercury* Project. His broad experience in carrier operations includes a total of more than 600 landings aboard 36 carriers and over 5,000 hours in both single and multi-engine aircraft.

Ted Wilbur had additional assignments as a Navy Combat Artist in Projects *Vanguard* and *Polaris*, the Manned Space Program, and nuclear submarines. His paintings and articles have appeared in both military and civilian magazines – *Naval Institute Proceedings, Time, True Magazine* and *Saturday Review*. He designed and produced the special issue "Space and the U.S. Navy" and the Smithsonian Institution's special publication "The First Flight Across the Atlantic." His paintings hang in the National Air and Space Museum in Washington, D.C., and are part of the Navy's permanent collection of art as well as private collections.

His motion picture credits include "The Quiet Warrior," a half-hour film for television which he wrote and produced for NBC and the Naval Air Reserve.

Ted Wilbur came to *Naval Aviation News* in 1967 as Editor and became Head, Aviation Periodicals and History for DCNO (Air Warfare) two years later, a billet he held until his retirement.

During that time his additional duties have involved a number of museum activities, including design coordination of exhibits for the Naval Aviation Museum in Pensacola, Fla. He was Navy project manager for the Sea/Air Operations Hall of the National Air and Space Museum in Washington, D.C., and is currently coordinator for the Naval Undersea Warfare Museum now being planned for Seattle, Wash.

Capt. Wilbur was the recipient of the 1977 Aviation Space Writers Association National Award for "consistent high performance in promoting the role of U.S. Navy Aviation. . . ."

During his years with *Naval Aviation News* he displayed a sensitivity and a feel for what would best enhance the image of Naval Aviation among the magazine's thousands of readers, yet still tell it the way it was. He encouraged creativity and imagination on the part of the staff to keep the magazine a viable and interesting channel for bringing the continuously unfolding story of Naval Aviation to its readers. As a result, *Naval Aviation News* has gone through many changes in which style, content and format have always kept pace with the best of the civilian magazines.

Ted Wilbur operated on the principle that a Naval Aviator can do anything and that if he didn't know how to do something, he'd better find out how. We'll call that the Wilbur Principle, and his accomplishments attest to the fact that it works.

Someone has said, "A man should choose with careful eye the things to be remembered by." He will be remembered wherever his paintings are on display for their vivid portrayal of individuals and events important in American history. He will also be remembered by the Naval Aviators who came into the Naval Aviation family through their contact with him. Many times in recent years, the magazine has received calls from pilots well into their careers, who ask about Ted Wilbur, express their admiration for him, and tell us how he was responsible for their entering the world of Naval Aviation.

It is never good to dwell on goodbyes and so we say Bravo Zulu, Ted. We wish you all the best.

DID YOU KNOW?

Hornet Milestone

Nineteen F/A-18 naval strike fighters have accumulated more than 4,000 flight hours in development and production in just 30 months since the first *Hornet* flew in November 1978.

Navy and Marine Corps personnel are flying and maintaining the multi-mission aircraft at Naval Air Stations, Lemoore and Point Mugu, Calif., and at the Naval Air Test Center, Patuxent River, Md. The aircraft at Lemoore are assigned to VFA-125, the *Hornet* fleet readiness squadron, where USN and USMC pilots and maintenance crews train. Point Mugu's VX-4 is presently evaluating the *Hornet's* tactics capabilities.

An F/A-18 cruises over eastern Missouri, home of Hornet prime contractor McDonnell Douglas, while testing the aircraft's GE F404 low-bypass turbofan engines.

Seven production F/A-18s have been delivered to the Navy for training and follow-on testing. One of these aircraft recently began the Navy's accelerated service test on its General Electric F404 low-bypass turbofan engines. The other 12 *Hornets* are pre-production models being flown and tested at McDonnell Douglas in St. Louis and at NATC.

Other development testing at Patuxent River is concentrating on air-to-ground capabilities, including bomb accuracy assessment. All AIM-9 heat-seeking *Sidewinder* missile tactical firings have been completed at NATC. Additional firings of various armament types will take place during the Navy's fighter and attack operational evaluations scheduled for next year.

Communications System for Helmets

Aviatrix Janice Brown, pilot of the solar-powered aircraft *Solar Challenger*, wore new head gear when she piloted the plane across the English Channel, in June, from Paris to London. In the photo, she is assisted by Douglas Robertson (l.) and Commander Douglas Call of the Pacific Missile Test Center, Point Mugu, Calif., as she tries on her helmet containing a communications system which was redesigned by PMTC.

Robertson, a physical scientist, made a sound-attenuating ear cup to accept a wide frequency response earphone, and integrated it into Brown's Kevlar helmet, keeping the weight to a minimum – an important factor in this project. The

final product weighs slightly over a quarter-pound. According to Cdr. Call, head of the Crew Systems Branch, one of the reasons that Janice Brown was chosen to fly this unusual aircraft is that she weighs just 95 pounds. The *Solar*

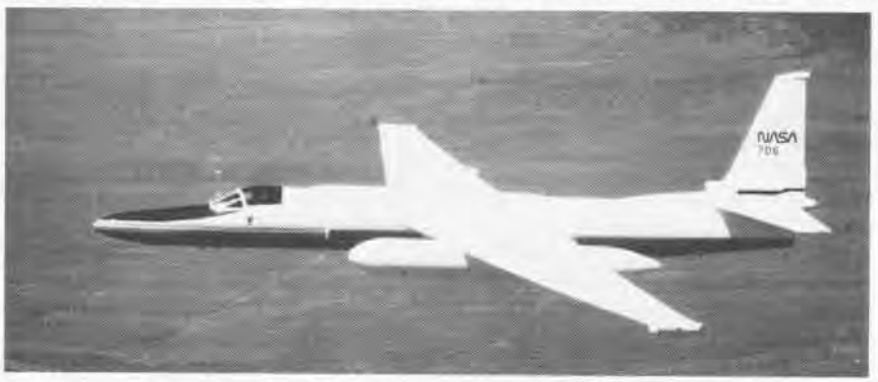
Challenger is constructed of lightweight space-age materials and weighs only 192 pounds.

Over 16,000 solar cells, spread over the Mylar surface of the aircraft's 48-foot wing span, produce over 3,000 watts to power its electric motor, which in turn propels the craft at 25-30 miles per hour at altitudes up to 12,000 feet.

Mrs. Brown flew the first solar-powered aircraft, *Gossamer Penguin,* at Edwards Air Force Base, Calif., in August 1980. Her original communications system afforded no muffling of the motor or flight noise and had a very limited, distorted frequency response. Cdr. Call volunteered the services of his branch to provide a lightweight system with good speech intelligibility characteristics.

NASA High Altitude Aircraft

The unusual looking aircraft in the photograph is NASA's high altitude U-2, flying at the Ames Research Center in northern California. High-flying earth resources planes routinely carry aloft a variety of sensors, aerial mapping cameras, electronic scanners and devices to sample air from the outer atmosphere. A new aircraft, called the ER-2, which can carry nearly two tons of



instruments to an altitude of 13 miles, was delivered to Ames last June.

Since each of the planes makes about 100 flights a year, scientists acquire very good data over wide geographic areas as the seasons change. Information is being gathered about the impact of our way of life on the earth's protective ozone layer as well as in the fields of pollution monitoring, astronomy and earth observations. High quality pictures have been used to update old maps, study urban growth, locate new water sources and to map and describe cropland. The planes can scan shorelines, assess flood damage and help fight forest fires.

Grampaw Pettibone

Cross-Country

From: Lt. P. D. Que, 1310/USN
To: Commanding Officer,
Observation Squadron One
Subj: Leave, Request for

1. It is respectfully requested that I be granted 10 days' leave.
2. If granted, my address will be:
200 Elm Street
Podunk, Pennsylvania
3. It is further requested that I be detailed aircraft NO-1 #4820 which is assigned to this squadron. It will be used for the purpose of practicing cross-country flying from here to Podunk and return.

Very respectfully,
/s/ P. D. Que

Because it was a normal request, it was approved and leave was granted. P.D. drew a cross-country pack from operations and proceeded with his mission. In due course, he returned from leave refreshed and with a beautiful tan.

Sometime later, the skipper called Lt. Que into his office for some explanations. The aircraft log book and a pile of fuel chits were on his desk. [The log was up to date and the chits were all properly completed.] The C.O. looked up at him and said, "Seriously, Lieutenant, there are some things here that I would like explained. What is this Charlie's gas pump at Podunk, Pa.?"

"Well, sir, you see," the lieutenant explained, "Podunk doesn't have a landing field, so I landed in a cow pasture on the edge of town. It belongs to a friend, and he said I could use it. He agreed that when I flew over his house, he'd go out and chase all the cows into one corner of the field while I landed. [Good forethought and planning.] Charlie's gas pump is just down the road a piece and, since the sheriff is my uncle, it was easily arranged to taxi down and fill up."

"I see," the skipper said, "but why all these practice flights every day?"

The lieutenant had the answer to that one, too. "You see, sir, Podunk is way inland, and they don't know much about the Navy or that we even have airplanes in the Navy; so I not only kept up my flying skills while on leave, but also flew over town to let them read the U.S. Navy on the side of the airplane. It was all good public relations for the Navy." [Two birds with one stone.]

With this the C.O. reached under his desk and pulled out a crumpled cardboard sign. "What about this sign that was found in the baggage compartment of your plane?" Crudely hand lettered thereon were the words:

SEE PODUNK FROM THE AIR
$5.00 A HOP
ZOOM YOUR HOUSE
$2.00 EXTRA

The barn door was closed the next day with the posting of the following order:

From: Commanding Officer,
Observation Squadron One
To: All Pilots
Subj: Flying regulations,
Publication of

1. Hereafter, pilots taking Navy planes on leave will not, repeat, not take up passengers for hire.

W. T. DOOR

Grampaw Pettibone says:

Well, singe my ol' gray whiskers! Don't think this didn't really happen, cuz it really did, albeit a few years back.

Things like that don't happen anymore, you say. Oh, but they do. Well, not exactly, but how about the Marine warrant officer who took his aged family relatives for a short air taxi in his H-53? Wiped out the *Sea Stallion* when he backed into another helicopter. Luckily, his family suffered only minor injuries.

Or, how 'bout the Marine captain who just recently buzzed his uncle's farm in the Middle West in his OV-10 *Bronco*? He bought that farm when his wing tip hit a tree.

What about the Navy lieutenant who practiced his own one-man air show to the amusement of the many? He flew wing on airliners, made low passes under power lines, performed aerobatics in the traffic pattern, etc., violating practically every good rule in the book – with no one making any effort whatsoever to bring such escapades to a halt until one day he failed to complete a dirty roll immediately after takeoff in his A-4.

And I only hear about the ones that end tragically. Gol durn immature little kids, that's what they are. There are two approaches to bringing such things under control. The reasonable one of appealing to each pilot's sense of responsibility, his pride of professionalism, his patriotism in not needlessly jeopardizing the taxpayers' dollars, his personal concern for his

ILLUSTRATED BY Osborn

family in not recklessly risking his own life to cause them suffering. This approach has been and is being used with only partial success today. The other approach is the "big brother" one, the "two-man rule" – constant, continuous, personal command supervision over all flight activities from takeoff to landing. It is coming, and it may be the answer. Our country cannot afford the carnage of one life, $1,000,000, and one aircraft destroyed every day of the year in the Navy and Marine Corps. Highly preventable accidents account for one third of this total.

(Reprint from *NANews*, May 1971.)

Spotless Flyer Flames Out

On his first flight in the T-2C, the student took control after liftoff and proceeded to the operating area. He completed the FAM portion of the flight and then headed toward home base to shoot a hi-tacan approach, missed approach and GCA to a full stop, intending to land with 1,000 pounds of fuel remaining.

Following the missed approach, the aircraft was vectored into the GCA pattern. At four miles from landing, tower directed a 360-degree turn to avoid VFR traffic. Completing the turn, the pilot requested a full stop but the tower cleared him for a low approach only (duty runway fouled) – followed by a wave-off. The duty runway was blocked with a T-2C tow tractor being equipped with a gunnery banner. The other runways were closed for resurfacing.

Turning downwind after this second missed approach, the pilot noted 600 pounds of fuel remaining. He switched VFR to tower, where he was directed to continue upwind to follow another T-2C. Arriving abeam, the pilot called for a touch-and-go, then corrected his call to a full stop and was again waved off for fouled deck. The pilot queried the tower as to the expected delay and was advised of a two to three-minute delay.

Two minutes later, he asked tower about the delay and was again advised that it would be two to three more minutes. The tower then questioned him as to his fuel state. His response was "low fuel." Tower asked if he wished to declare minimum fuel and received an "affirm." Tower advised him to follow the T-2C ahead and proceed downwind. The pilot asked if he could cut in front of the other T-2C.

The banner tow plane pilot, overhearing the conversation, asked him for his fuel state. Response, 400 pounds. The banner pilot then asked tower if the low fuel aircraft could land on 13R. Tower replied that it was closed. Banner pilot stated, "It's not closed for emergencies." Twenty seconds later, he asked about using the 35 runway and was told that 35R was closed for resurfacing, and 35L was fouled with tow banner. Tower cleared the low state aircraft to turn inside the T-2C. The pilot noted his fuel state to be 150-200 pounds just prior to the abeam position. Tower cleared the tow tractor for takeoff (after 13.5 minutes of fouled deck) and cleared the low state for full stop. Thirty seconds later, while turning to final, the pilot informed tower that the #1 engine had flamed out. At 200 feet altitude, still turning, he went to full power, hit his ignitors, and continued the approach. At 100 feet altitude, #2 engine flamed out. The pilot evaluated his sink rate, airspeed and other possibilities, and decided not to eject. The aircraft landed in tall grass 225 feet short of the runway, sheared off the landing gear, and slid to a stop 85 feet short of the runway. The crew exited unharmed.

Grampaw Pettibone says:

Holy foolhardy flameouts! This is enough to make old pilots cry and young ones jeer!

That this accident was pilot error goes without saying. Of interest here is the reason why. This pilot erred by thinking he could make it rather than declare an emergency – or anything for that matter. To believe that an instructor pilot would orbit home field until fuel was exhausted is ludicrous. To brief other pilots not to do same (as one endorser so recommended) would bring only jeers and guffaws from the ready room.

This pilot was reluctant to have his name associated with any kind of incident, not only those that might reflect upon his judgment but also those involving equipment malfunction. He stated he had reached a point in his career where he had to decide whether to stay in the Navy or resign to seek civilian employment (aviation assumed). He was so anxious to preserve his spotless record that he decided not to declare an emergency. With this kind of thinking, it's only a matter of time before your luck runs out, gents. The sad part of it all is that too often it leaves someone else holding the bag, or in the bag. The lesson to be learned here is that the pilot in command must confess to himself that a problem exists and aggressively demand assistance when the program gets off track.

You can rest assured that commercial aviation is not interested in drivers with this philosophy – nor is anybody else. Particularly not Old Gramps whose flying these days is done mostly in airliners.

WEPTAC-Tactics For Tomorrow

As a U.S. Navy carrier task force steams through the frigid waters of the North Atlantic just before dawn, its ships receive intelligence indicating that an attack by Red bombers may occur within the next two to four hours. General quarters is sounded. Soon the entire task force is humming with activity, mobilizing its resources for effective fleet air defense. As the officers in the combat information center attempt to define a threat sector, arrange their forces to best meet the attack and decide how weapons and sensors can be most effectively used, aircraft are launched from the flight deck. Both F-14 fighters and E-2C early warning aircraft take off into the ominous clouds that shut out the dawn.

Still more than 400 miles away, yet closing steadily on the task force, are the Red bombers and their accompanying jamming aircraft. In the bright sunlight well above the clouds, the Red flight commander carefully reviews the attack plan in his head. At Point Alpha the jamming aircraft will slow, take their stand-off positions, and start jamming. The first wave of bombers will approach silently under the electronic blanket provided by the jammers. The second wave will approach while jamming, providing additional concealment for both themselves and the first wave. At Point Bravo the bombers will launch their cruise missiles toward the task force and turn back toward home.

Neither force has yet made sensor contact. U.S. airborne aircraft scan the horizon with their radars while the U.S. Fleet is in emission control, trying to avoid detection by the Red bombers.

Suddenly the passive sensors of the U.S. task force detect a series of jamming strobes. Alpha Whiskey vectors fighters toward the jamming and launches the on-deck alert fighters. As the Red bombers approach, some U.S. radars are able to burn through the jamming and detect the Red bombers. The battle has begun. As U.S. radars pick up more Red aircraft, Alpha Whiskey* hurriedly sends additional fighters in the Reds' direction. The F-14s down most of the leading bombers. But as our pilots report reaching Bingo and Winchester, other Red bombers come within weapon

Left, WEPTAC screen displays tactical situation. Below, F-14 firing Sidewinder missile.

By Andrew Kilikauskas and Guy Kyser

range of the fleet.

As the remaining Red bombers reach Point Bravo and launch their cruise missiles at the U.S. task force, the shipboard defenses come into play and attempt to down the incoming missiles. Some missiles get through and sink four ships – some after many hits, one from a single hit.

Suddenly a button is pressed, cutting short the return fire and ending the air battle. This exercise has made its point: the U.S. task force commander should not have lost those ships. Fortunately, this battle occurred only on the display screens of the Weapons and Tactics Analysis Center (WEPTAC), a facility located in the California desert rather than in the icy waters of the North Atlantic.

The Analysis Center is designed to enable its users to evaluate weapon systems and tactics as they are employed in realistic interactive encounters between opposing forces.

WEPTAC was developed by Naval Weapons Center, China Lake, Calif., as a key element in the weapon research and development process. It allows evaluation of both weapons and tactics in the context of the operational environment in which they will be used.

WEPTAC is a powerful and versatile analysis tool whose many uses include:

- Developing and evaluating tactics for fleet personnel. What are the best tactics to exploit the capability of friendly systems and to counter threat systems and tactics?
- Evaluating enemy systems and tactics. How are enemy systems most likely to be used and how might they respond to our new weapons and tactics? How can we counter various enemy weapons and tactics?
- Evaluating conceptual weapon systems. How useful is a particular proposed weapon? How will it be integrated with other weapon systems, platforms, and sensors, both friendly and hostile?
- Integrating tactics in a realistic operational environment into the weapon system formulation process. What weapon characteristics will best serve the purpose of a proposed system?

*force antiair warfare coordinator

WEPTAC is a computer-age descendant of traditional methods of tactical analysis. Over recent years, as attempts were made to make war games more realistic, these games became more time-consuming and cumbersome, requiring more and more operating assistants to move pieces and make calculations. Moreover, the variables affecting warfare were continually multiplying as sensors, command and control, and weapon systems advanced in sophistication.

However, computers advanced even more rapidly, and they have taken over the calculations. Maps have given way to display screens as the Navy has developed a number of computerized systems for simulations of weapons and tactics. Prominent among these systems is WEPTAC, which has been expanding since 1978 to provide ever more sophisticated interactive simulations.

WEPTAC consists of a central computer, an umpire station, several work stations and a sophisticated software package. The heart of WEPTAC is a minicomputer, which includes a 640-kilobyte memory and a 20-megabyte, hard-disk, random-access storage system. This computer, which can process commands and display information very rapidly, is fully capable of implementing a complex software package designed to simulate weapons and tactics.

Expansion of the system is possible by the addition of more work stations. Each station needs only a cathode ray tube terminal that transmits command decisions to the computer, a graphics display screen that shows the tactical situation, and a printer that provides a record of all events.

The WEPTAC system software is arranged into a number of modules, each handling a different element of the overall game. The functions of the seven major modules are as follows:

- The force characteristics module is a complete file of weapon, sensor and unit characteristics necessary to the game.
- The game setup module provides all functions needed to set up the game, including force arrangement and preparation of initial tactics.
- The graphics and message module sends appropriate information to each side's printer and graphics display.
- The force movement module keeps track of where everything is and allows players to maneuver their forces and weapons.
- The detection assessment module watches events and determines the effects of a play's actions.
- The engagement assessment module calculates the results of any interchange of weapons and sends the results to the graphics and message module.
- The history extraction module can show an entire previous game or set up a previous game for replay from any point.

The WEPTAC software, like the equipment, is designed for minimum maintenance. Both software and hardware are designed so that players not accustomed to computers can quickly learn to set up and play war games. As WEPTAC matures, the software will be updated and the hardware expanded to create more detailed and exact simulations.

The system has a number of unique features that enhance its capability to evaluate weapon systems and tactics. It allows the interactive participation of two opposing teams so that weapons and tactics are evaluated in a dynamic combat situation. The flow of information is realistically modeled, and the game occurs in real time so that command decisions must be made as rapidly as in actual battle.

WEPTAC is also flexible. If an analysis problem requires a constant threat, an analyst may play against the computer or the umpire instead of an opposing team. A staggering variety of scenarios is possible. A simulation can range from a one-on-one engagement to a force-level campaign involving 400 units for each side with up to 300 different weapons and sensors. WEPTAC is capable of modeling all types of engagements between aircraft, cruise missiles, ships, submarines and helicopters. Planned expansions of WEPTAC will make engagements with land units such as tanks, armored personnel carriers, trucks and structures possible.

Another valuable feature is the WEPTAC computer

The nuclear-powered aircraft carrier Enterprise, CVN-65, off Point Loma, Calif.

library, which contains a permanent file on both U.S. and enemy systems. This file includes information on characteristics of systems, weapons and sensors for today – and for several time periods in the future. New weapon or sensor systems can easily be programmed into the computer.

The expertise of the Naval Weapons Center professionals who operate the center full time is another WEPTAC asset. The members of the staff have years of experience in war games, intelligence work and threat analysis. They are able to help research and development personnel and military officers put their weapons and/or tactics problems into game form and obtain meaningful answers to these problems.

To enhance its usefulness, WEPTAC has been designed to operate as simply as possible while still providing realistic interactive war games. In a typical game there are two teams (Red and Blue) and the umpire. Each team may have several work stations, including a command station and stations for several sub-units.

Each playing station has three members: a military commander who makes the tactical decisions for all the forces under the station's control, an operator who relays command decisions to the computer, and a monitor who maintains status logs to relay important events to the other players. Each station has complete control and knowledge of the forces under it, but each team's knowledge of the other is limited to general intelligence information obtained from its own sensors (such as radar), indirect information passed by players on the same team, or intelligence information passed by the umpire.

The umpire has complete knowledge of the force dispositions and maneuvers of all stations. The umpire's primary job is to ensure that the results of the engagement are not biased. To accomplish unbiased results, the umpire may give additional information (external intelligence) to either team as the situation warrants.

Before a game begins, WEPTAC operators working with the players set up a specific battle situation around which each playing team plans its tactics. During the planning, each team commander receives a threat assessment of the opponent's force structure and the approximate sector of engagement. At the playing terminals, the teams arrange their forces as planned and decide how weapons and sensors can be most effectively used.

During a game, opposing forces move toward each other in preset formations using their planned tactical doctrines. Both teams can receive sensor and intelligence information. The team commander can change the way sensors are used, maneuver forces, send out aircraft, or change tactics as required. Another option is to attack, either by executing a preplanned attack strategy or by sending specific weapons after specific targets.

Using the information in its library on the characteristics of the systems, weapons and sensors of both teams, the WEPTAC computer calculates the results of the interactions between Red and Blue forces. The results include when, where and by whom detection takes place; what the hit probability is of particular weapons launched in a certain direction; and whether a unit is killed or only damaged by a hit.

When a game has been completed, the scenario can be repeated. In the new game, tactics, weapon characteristics and the composition of each side's forces may be changed to evaluate the effects of such differences. The Blue side, generally representing a U.S. force, is more often varied to test various weapon system concepts and tactics against a constant Red menace.

Designed as an essential element of the overall weapon research and development process, WEPTAC serves as a speedy, versatile tool for judging the effectiveness of conceptual or existing weapons, defining the desired values for the parameters of a conceptual weapon system, or planning effective tactics for the employment of weapon systems. Because it enables naval officers and weapon system analysts to interact in the evaluation of advanced system concepts in a realistic combat decision-making environment, WEPTAC is a weapon system analysis tool of growing importance to the Naval Weapons Center and to the Navy.

WEPTAC users in the thick of battle.

A-7C on runway.

Making Sure That Weapons Work

. . . is the mission of the Pacific Missile Test Center. Located at Point Mugu on California's southern coast, PMTC has more than 6,000 military, civilian and contractor personnel, 30,000 acres of land and millions of dollars worth of buildings and equipment to do the job. It also has the Sea Test Range which encompasses an area of 15,000 square miles and, beyond that, the Extended Area Test Range (EATS) which doubles the sea and air space where PMTC professionals conduct more than 10,000 operations annually.

An outgrowth of the Naval Air Missile Test Center which was established in 1946, the thriving complex is 55 miles north of Los Angeles. Its location offers excellent weather and convenient air and sea lanes for missile testing. A series of offshore islands, especially the heavily instrumented San Nicolas, help to extend PMTC's reach into the Pacific, thus enabling testing to be conducted well beyond the California shoreline.

In addition to its California-based activities, PMTC is responsible for the Pacific Missile Range on the Hawaiian Island of Kauai. The Pacific Missile Range Facility combines surface instrumentation and other range facilities with two underwater ranges, one encompassing a 50-square-mile area and the other covering 700 square miles for subsurface weapons testing.

PMTC's public information officer, Ray Lucasey, points out that "PMTC is a field activity of AIR-06, Naval Air Systems Command. Our commander, Rear Admiral Fred H. Baughman, is responsible for test and evaluation of missile systems." The naval air station, part of the Point Mugu complex, functions as a landlord for PMTC and also supports other units, including VA-305, an A-7 squadron from Carrier Reserve Air Wing 30, and VX-4, which participates in a variety of aerial test and evaluation operations.

Lucasey emphasizes that "our main goal is to provide a test environment as close as possible to that which can be expected in actual operations. The vast and intricate instrumentation systems at Point Mugu and San Nicolas provide an enormously long baseline for data collection as the testing takes place. PMTC is able to obtain an accurate picture of how a weapon will work in combat scenarios."

The offshore test area has been likened to one big "shooting gallery." Every air-to-air missile the Navy has fired in combat has been tested here. These include the *Sidewinder*, *Sparrow*, and *Phoenix* missiles, as well as the air-to-ground weapons *Bullpup* and *Walleye*.

Controlling activities within the shooting gallery is not easy. Routings on the sea and in the air have to be coordinated to permit passage of commercial ships and aircraft. A P-3 *Orion*, for example, will fly over surface areas before a test to ensure that fishermen, pleasure boats and the like are well clear of the areas.

Public affairs officer Lieutenant Commander Tom Stuart explains, "We are within close steaming distance for Navy ships to come up from San Diego and conduct training and other exercises. Also, being near Los Angeles, we are able to capitalize on the technical expertise of the aerospace industry and academic institutions located there. We also draw upon the great manpower pool that is available in southern California." Nearly half of PMTC's civilian work force is comprised of scientists, engineers and other technically trained people.

Unfortunately, PMTC has encroachment problems. Oil leases in several areas within the range may eventually lead to drilling operations. There are proposals by oil companies to route oil tankers through a key test area. One official explained, "Three ships three hours apart passing through the zone would literally shut us down." So, while many problems lie ahead, constant negotiation and discussion are under way in the hope that they can be solved. Meanwhile, the pace of activities is steady and heavy.

The growing sophistication of weapons, coupled with rising costs, has dictated a need for increasing test and evaluation evolutions. The Navy simply has to ensure that what they buy works as advertised. PMTC plays a critical role in this effort.

The Center operates a broad range of airborne and surface targets. These include QF-4 and QF-86F drone aircraft, and the BQM, MQM and AQM series of aerial targets; *Septars* (surface targets); and various old ship hulks. Beyond actual missile-versus-target operations, PMTC also creates electronic and chaff countermeasure environments for weapons evaluations.

Enhancing all operations is PMTC's capability to produce real-time displays at Point Mugu during missile firings. An integrated microwave data transmission system "watches" test weapons and targets, and instantly sends data to monitors ashore where experts study and evaluate it. Recording units allow the same data to be reviewed at length, long after the actual firing run.

Some of the weapons systems and projects supported by PMTC include: *Tomahawk* cruise missile; *Harpoon*; F-14's missile system; *Trident* submarine weapons system; *Sparrow* and *Sidewinder* missile families; advanced Medium Range Air-to-Air Missile (AMRAAM); *Shrike*; Standard *Arm* and *Harm* missile families; the newly developed *Firebrand* target; AQM, MQM and BQM targets; and the integrated weapons system in the new F/A-18 *Hornet*.

In other projects, the Center designs, validates, verifies and manages software for various fleet deployed weapon systems utilizing imbedded digital computers. Supporting the F-14 project requires a completely instrumented F-14 cockpit and fuselage section (SITS or system integration test station) to effectively prosecute design, test and evaluation of F-14 weapon system software, avionics and missile integra-

By Captain Rosario M. Rausa

tion tasks. PMTC professionals simulate F-14 *Tomcat* flight, introduce realistic threats to the "aircraft" and exercise the F-14's fire control system by utilization of the hybrid computers. The computers, both analog and digital, provide flight dynamics and kinematics for the F-14 and up to 24 different types of targets. The device can actually be rolled outside onto a balcony to interface with airborne aircraft and targets operating on the ocean test range.

In simulation labs, missiles are installed in special chambers which emulate threat radars. The guidance and controls systems of the weapons are thus evaluated in detail.

Of special interest is the Crew Systems Branch headed by Commander Doug Call. Tasked with test and evaluation of aircrew survival gear, this unit focuses its attention on the aircrewman-cockpit interface. Cdr. Call and his highly experienced crew identify physiological stress levels encountered by flyers. From their research, specifications for aircrew life support systems may result. Incidentally, a new parachute trainer designed and built at the branch is receiving navywide attention. PR1 Charlie Tucker and PRC Albert Burton are the experts who have made important inputs to the project.

At PMTC's microelectronics laboratory, great strides are being made in the field of miniaturized circuits. Tiny chips containing hundreds upon hundreds of individual circuits are designed and completely fabricated here. PMTC also features an infrared/ultraviolet lab, one for laser/optical research and another for testing radar reflectivity. One facility has a mock-up of shipboard magazines.

This brief glance cannot properly chronicle all the activities under way at PMTC. It is important to remember, however, that the Center and its people are deeply immersed in productive efforts, invaluable to the success of Navy weaponry now and in the years to come.

OSHKOSH '81

The Worlds' Greatest Fly-in

Oshkosh '81 was a gathering of planes that ranged from the Curtiss Pusher to the sophisticated stunt planes of the Christen Eagles Aerobatic Team. At the right, one of the Christen Eagles leaves a marker trail of smoke over a restored SNJ Texan with Navy markings. The Eagles have been a regular feature at Oshkosh for the past three years and perform approximately 60 shows every year.

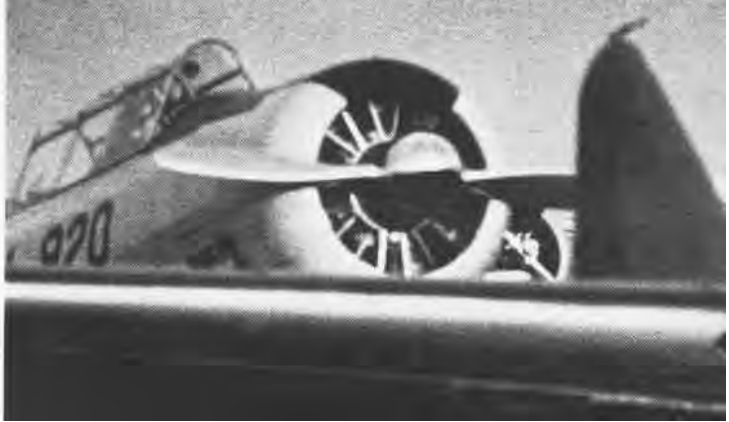
Stories and photos by
JOC Kirby Harrison

It's the Mecca of sport aviation. Oshkosh! An annual pilgrimage taken by thousands of aviation devotees with the enthusiasm of the faithful. It isn't a religious experience, but it comes close.

From August 1-8, more than a half-million people passed through the gates of the 29th Annual International EAA Convention and Sport Aviation Exhibition, popularly referred to simply as "Oshkosh '81." By the sponsoring EAA (Experimental Aircraft Association) count, more than 10,000 aircraft were at Oshkosh, Wisconsin's Whittman Field for the occasion. The total number of visitors to the fly-in this year was enough to increase the population of Oshkosh by nearly half its normal total of inhabitants. A far cry from the first association fly-in at Milwaukee in 1953 that drew 40 aircraft.

Friday before opening ceremonies, a half-dozen air traffic controllers skillfully juggled airplanes in what looked like the aerial equivalent of the Los Angeles freeway rush hour. Through the afternoon planes came in at nearly 300 an hour, landed safely and were directed to parking areas. By midnight Friday, more than 3,000 aircraft had arrived. Incredibly, the operation was nearly accident-free. Oshkosh '81, the entire eight-day fly-in, recorded no aviation-related fatalities, and no injuries. The only incidents were taxiway versions of the minor fender-bender.

Aviation enthusiasts at Oshkosh '81 could find a little something for almost everyone. An obviously



SNJ trainers, like Jerry Walbrun's Navy-marked plane warming up at the left, made up by far the largest aircraft type among the Warbirds' restored military aircraft.

popular feature was the "fly" market that featured an astounding array of items, from cockpit canopies to airplane postcards.

"I couldn't believe it," remarked Bruce Ashenfelter, whose bright yellow, Navy-marked Stearman biplane occupied a choice spot near the restored military aircraft parking area. "Tailwheels for a Stearman are hard to find, and some guy there had three of them for sale. So I bought two."

Bill Ross, a former Navy pilot, had a one-of-a-kind restoration job at the fly-in with a Navy GB-2 staggerwing *Traveller*. He has an obvious emotional tie with the plane, having flown aircraft of that type in earlier days. "I flew one like it in 1945," he recalls. "I still have a photo of it, so I know the markings on this one are accurate."

Ross won his Navy Wings at Corpus Christi, Texas, in 1945, and he confirms with a quick grin that, "Once a Naval Aviator, always a Naval Aviator." His GB-2 had joined the Navy just a year earlier than Ross. Now, 37 years later, both are still Navy, if not actually *in* the Navy.

Real interest at Oshkosh '81 centered on the more than 1,100 registered "show" planes, competing for grand champion recognition in the antique, classic, Warbird, custom-built and gyrocopter categories. After every flight, pilots and crews could be found with hands full of soft rags and assorted cleaning solvents, polishing chrome here and wiping up an oil streak there. Clearly a labor of love. Why else would someone invest $30,000 or so in an old, beat-up airplane, and another $30,000 or so to make it fly and look the way it did when it came out of the factory a generation ago?

If restoring them isn't cheap, flying them falls into the same category. Dr. W. D. Hospers of Ft. Worth, Texas, estimates it costs somewhere around $900 an hour to fly his restored B-17G *Flying Fortress*. The big bomber sucks aviation gas at 160-200 gallons an hour, and goes through about eight gallons of oil per hour. Naval Aviator Bill Ross' sleek P-38L *Lightning* gulps 100-octane low lead at 104 gallons per hour to feed the two 1,475-horsepower Allison engines.

Undaunted by distance or cost, Australians from "down under" came up for Oshkosh '81, with a chartered special 747 carrying 264 aviation enthusiasts and 12 small aircraft. "The Oshkosh Express," as they dubbed it, brought in the largest overseas group ever to attend the fly-in. A total of 1,340 persons representing 59 other countries attended the show.

Aerobatics exhibitions featured, among others, the champion Christen Eagles aerobatic flight team. Former National American Aerobatics Champion Marion Cole opened the show by cutting a ribbon stretched across the runway. Roaring inverted down the landing strip, he neatly clipped the ribbon and brought a cheer from the crowd.

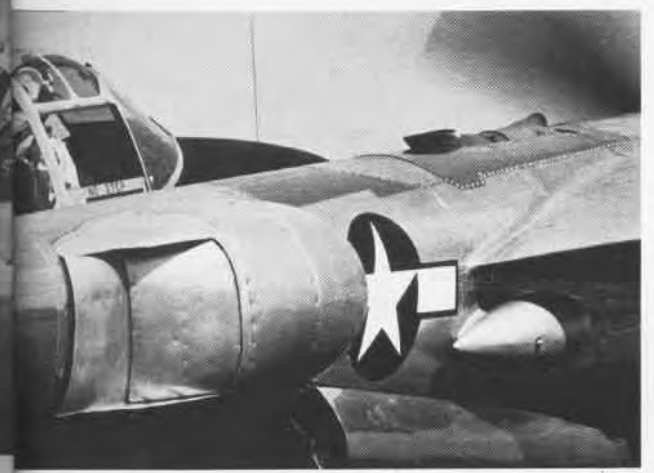
Ultralights and Warbirds, homebuilts and gyrocopters, it was all part of EAA's Oshkosh sport aviation showcase. And highlighted at this year's event was the groundbreaking for a multimillion dollar EAA Aviation Foundation complex which will house a flight research center, air museum, educational facilities, library, workshops and international headquarters.

"We've come a long way," EAA founder Paul Poberezny told guests at the groundbreaking.

"He has a gift for understatement," whispered a bystander.

John Parish' polished, 1951 D-18 Beechcraft was one of the true classics at the show. The Navy version, affectionately known as the "Bugsmasher," sometimes played tricks on the unwary pilot during landings. Bill Ross' P-38L Lightning, below, was an eye-catcher. According to Ross, it is one of only five Lightnings still flying.

Don Whittington's F8F Bearcat, above, drew attention with chrome-plated landing gear (see inside cover for overall photo). The Marine Corps was well represented by former Marine Aviator Howard Pardue's F4U-5N Corsair, at the right, with Pardue in the cockpit.



The mix of aircraft types at Oshkosh was visually spectacular, with frequent scenes like the FM2 Wildcat owned by Rudy Frasca and flown by his son Joe, seen in the landing pattern above the TA-4J Skyhawk carrying pilot Ltjg. T. J. Boylan and Lt. Duane Canon.

HISTORY IN FLIGHT
OSHKOSH '81

It was a page of history come to life. On the runway threshold, Dick Dieter's WW-II Navy torpedo bomber belched smoke from the exhaust ports and smoothed to a steady grumble. Overhead, a flight of three P-51 *Mustangs* stood out against the sky, followed by a Navy FM-2 *Wildcat* and an F6F *Hellcat*. As Dieter's TBM-3 *Avenger* gathered speed down the runway, a Japanese *Zero* flashed by and banked away, evoking memories of war in the Pacific for many at the Oshkosh '81 air show. For younger spectators, it was a page of history, 40 years and a generation ago.

The aircraft are restoration projects by the *Warbirds*, an Experimental Aircraft Association division devoted to keeping the old warplanes flying, partly to preserve an aviation heritage and partly to keep alive the camaraderie associated with the men and women who flew them in earlier days. And, according to one pilot, it is in no small part for the experience of driving a high performance war plane that still retains the thrill of seat-of-the-pants flying.

The *Warbirds* count at least 10 former Navy pilots among their members. John Ellis who flew F-4 *Phantom* jets in Vietnam now flies an F8F *Bearcat* in air shows. In April he flew a restored Navy SNJ trainer to NAS Patuxent River for the test pilot convention.

"I flew with the station commanding officer, Captain (Thomas B.) Flanary. He flew the SNJ 30 years ago. He took over the controls and flew it as if it were only yesterday. Much better than the young test pilots I took up.

"You know," he added, "the aircraft and the equipment may have changed, but the attitudes and the people have not. I think the Naval Aviator is still the best pilot in the world."

At nearly six feet tall, Teri Hospers of the B-17G "Chuckie" crew, drew more than a few glances. The Confederate Air Force B-29 "Fifi," at the bottom, was the largest aircraft at Oshkosh. The big bomber costs about $10,000 for a fuel fillup.

It was an all-Navy formation flight in which Ellis participated that drew tremendous applause at Oshkosh. The flight included Ellis' and another *Bearcat,* along with a Navy FM-2 *Wildcat,* F6F *Hellcat* and F-14 *Tomcat.* It was a unique formation, four WW-II carrier aircraft, which had distinguished themselves in combat, escorted by a high-performance, twin-jet *Tomcat* similar to those which recently made news in the Mediterranean.

The five aircraft flew low and level along the runway. As they neared the end of the airstrip, Lieutenant Commander John Ault in the *Tomcat* left the formation. Cutting in his afterburners, he abruptly pulled the F-14 into a near vertical climb and disappeared in the overcast. The other four planes continued in a "missing man" salute to fallen comrades.

Howard Pardue's Marine Corps Corsair, warming up below, bore VMF(N)-513 insignia and markings. Wearing Royal Australian Navy colors, Getch Getchell's restored MK II Sea Fury, at the right, was among many Warbirds with other than U.S. markings. Too late for extensive use in WW II, the Sea Fury did see action in Korea and Indochina.

Known as "Yellow Peril," Bruce Ashenfelter's Navy Stearman, at the right, was a beautiful representation of another age of aviation. Below, the early morning sun was often outlined in haze, throwing light off the parked aircraft. The fly-in was an exciting introduction to aviation for youngsters like seven-year-old Bruce Selkirk of Sussex England.

Bruce Ashenfelter, who flew a restored Navy Stearman to Oshkosh, reflected the same feeling. "I joined the Navy in 1943 in the V-5 (pilot) program, but I ended up as a line officer on surface ships," he said of his Navy days. "I had wanted to own a Stearman since I was a kid. It's the ultimate open-cockpit airplane."

He formerly owned a Navy SNJ trainer and was part owner of a P-51 *Mustang.* "As time goes by, I'll probably fix up another Stearman, or two, as part of my retirement therapy," said Ashenfelter.

As he wiped down his Stearman, Ashenfelter talked with admirers of his old biplane.

"Haven't had so much fun since I left the Navy," he said with a wink.

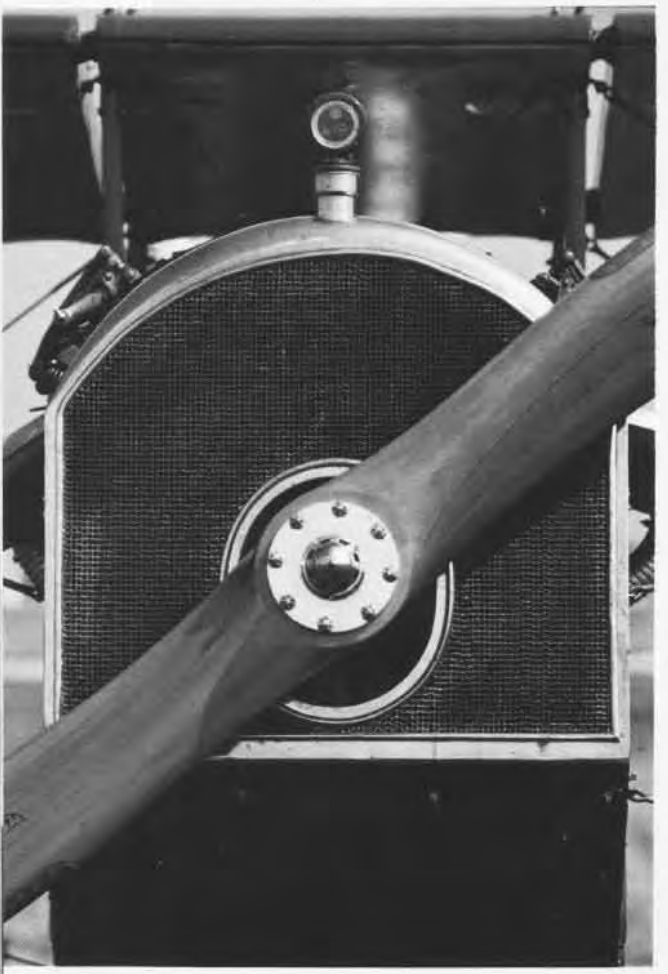
One of very few still flying, Bill Ross' P-38L Lightning, at the right, stood out among the more than 100 Warbirds, as did Dr. W. E. Hospers' B-17G, shown below in flight.

Pulled together by the telephoto lens, Dick Dieter's TMB-3, at the right, is the backdrop for a P-51 Mustang and (left) the only XP-51 Mustang still flying.

Sunrise at Oshkosh bathed thousands of parked aircraft in red, including the restored N3N-3 at the right. One of the more unusual restored military planes was the beautifully done Timm NST-I Tutor trainer, below, belonging to John Machulda of Minneapolis. Timm built 262 Tutors for the Navy during the early WW II period. They were constructed with a plastic-bonded plywood.

FLIGHT OF FANCY

OSHKOSH '81



The Brass-bound radiator on Dan Neuman's restored Curtiss JN4-D Jenny, at the left, was in itself a piece of art.

The Ford trimotor, left, is one of only two still flying. Hap Stein's Naval Aircraft Factory N3N-3, below, was often mistaken for a Stearman. At the bottom, a Cessna JRC-1 Bobcat known as the "Bamboo Bomber" got praise for authentic restoration.

Pete Parish' F6F Hellcat, at the left, took Grand Champion Warbird honors, while the Arizona wing of the Confederate Air Force B-17 "Sentimental Journey," included a Norden bombsight. The bombsight was an annonymous gift from a man who mailed it with a note saying he had "liberated" it at the end of the war. Below, bringing back memories of "Pappy" Boyington's Black Sheep, Howard Pardue taxis his Corsair.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They called it "Yellow Peril" because of its bright color. Bruce Ashenfelter of Grafton, Wisc., restored this Navy Stearman at a cost he estimates at about $40,000.

Ashenfelter flies quite literally out of his back yard, where he has an airfield and hangar. The Stearman was perhaps the world's most produced biplane. More than 8,000 copies of various models were built, and more than 3,500 of them were delivered to the Navy.

The Blues 35 Years Young

Twelve o'clock Blue Angel time.

This year marks the 35th anniversary of the U.S. Navy Flight Demonstration Squadron, the *Blue Angels*. Since the beginning of the 1981 air show season in March, the *Blues* have flown over 50 air show demonstrations in 33 cities around the United States and Canada.

The demonstration schedule keeps the squadron on the road from mid-March to mid-November, spending about 290 days away from its home base of NAS Pensacola, Fla.

The *Blues* met their largest audience in Coney Island, N.Y., where over 800,000 people packed the flight line in one afternoon to catch a glimpse of the Navy's finest. During the course of the Coney Island visit, over one and one-half million people watched the *Blues* fly.

Their audiences think of them as men in the air, but as the Navy's ambassadors of goodwill the *Blue Angels* spend much of their time on the ground — meeting people, visiting schools, hospitals and getting involved in the communities they visit.

By the end of the 1981 season, the 35-year-old *Blue Angels* will have been seen by over 152 million people around the world. An estimated six million people have seen them this year alone.

The view from the cockpit.

Photos by Harry Gann


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The Remarkable Red Arrows

The Red Arrows during a tour through the Middle Ea

Eclat = brilliant + spectacular

By Terry C. Treadwell

Roll! Roll! Go! With these words Squadron Leader Brian Hoskins leads his team into another of the perfectly executed maneuvers that have thrilled spectators for over a decade. "Eclat," the motto of the *Red Arrows,* means brilliant, spectacular, and those who have seen them know that this is no exaggeration.

The idea was born back in 1964. Although a formation team known as the *Red Pellicans* flying BAC jet *Provosts* was already in existence, the decision was made to form a new group called the *Yellowjacks* employing Hawker Siddeley *Gnat* aircraft. The *Yellowjacks* were so successful that they were given official Royal Air Force recognition in 1965 as the *Red Arrows.* The name was taken partly from the *Red Pellicans* and partly from an earlier British team known as the *Black Arrows.* In a short span of years, this RAF display team has become a popular air show attraction and has made over 1,300 appearances in 20 countries. In 1979, the *Gnat* was replaced by the British Aerospace *Hawk* which was used with great success during the 1980 season.

Competition among RAF pilots for a seat with the *Red Arrows* is keen. Successful applicants have a minimum of 1,000 hours and have demonstrated a commitment to the team concept. Generally, they have come from squadrons flying *Harrier, Jaguar* and *Phantom II* aircraft. Average pilot age is 30 and a tour of duty is normally three years.

There are nine demonstration pilots regularly assigned to the *Red Arrows.* New arrivals begin flying the rear seat of the *Hawk* during the last month of the season. After that, they are quickly integrated into the team during the many practice sessions, sometimes three or four times a day, which take place over the winter. By April of the following year they have blended into the group. There is no time for practice during the show season with its 100 or more performances.

The nine-plane *Red Arrow* demonstrations are performed within two nautical miles of the spectators and below 4,500 feet of altitude. There are more than 15 formation maneuvers, 24 formation changes, 5 solo synchronized items and upwards of 30 smoke-on and off calls. There are also "opposition" maneuvers with the team divided into four or five-plane formations.

While on the road, the *Red Arrows* are completely self-sufficient. A team manager who is also a pilot performs administrative duties, serves as narrator during the demonstrations and flies a spare *Hawk* aircraft to each new show location. An engineering support team, 28 men in all, service and maintain the aircraft between shows. Nine men and an engineering officer travel from one performance site to the next in the rear seats of the *Hawks.* The rest of the support crew accompanies the team in a C-130 *Hercules.* During the winter months, the traveling ground crew joins with home-based maintenance personnel to carry out a complete overhaul on the aircraft. The *Red Arrows* and their engineering support crews operate under the command of Wing Commander J. H. W. Black, Commanding Officer of the Central Flying School Detachment, RAF Kemble.

To serve with the *Red Arrows* is a unique and rewarding experience. Whether a man be pilot or part of the support contingent, each considers himself an important member of a very special family. Each is willing to put out that extra effort to achieve perfection. Perhaps that is why it has been said that the *Red Arrows* "make precision their profession, teamwork their science and aerobatics their art form."

Tony Theobold

". . . precision their profession, teamwork their science, and aerobatics their art form."

The Royal Navy's Historic Flight

By Terry C. Treadwell

The Royal Naval Air Service, formed in 1914, distinguished itself in WW I, flying from seaplane carriers and coastal air stations to wage Britain's air war at sea. It also fought in the Dardanelles and on the Western Front. The Air Service was incorporated into the Royal Air Force in April 1918. By this time, it boasted 67,000 officers and men, 2,949 aeroplanes and 103 airships.

On the eve of WW II, the Fleet Air Arm found itself poorly equipped because of peacetime economies and the fact that Naval Aviation had only returned to Admiralty control in 1936. Nevertheless, the Fleet Air Arm expanded rapidly to meet the challenge and dramatically demonstrated its effectiveness.

The aircraft that are part of the Royal Navy's Historic Flight helped to establish the Fleet Air Arm as an essential force in the Fleet. The Flight is based at RNAS Yeovilton in Somerset. Royal Navy personnel maintain and fly the aircraft.

"It is one of the most forgiving aircraft any pilot could wish to fly," said Lt. Cmdr. Wilkinson, C.O. of Heron Flight, Royal Navy Air Station, Yeovilton, England. He was referring to perhaps the best known of all WW II British naval aircraft, the Fairey *Swordfish*, affectionately known as the "Stringbag." This plane was designed for torpedo-spotter-reconnaissance operations from aircraft carriers, and first flew in 1934.

The world's only remaining Stringbag still in flying condition is part of the Royal Navy's Historic Flight, based at Yeovilton, England. This particular aircraft was built in 1943 and never saw combat service but was used for training and communications flying duties. In 1945, it formed part of the Victory display in Hyde Park. Later that year, it was bought from the Navy by the Fairey Aviation Co. and, in August 1947, the company registered the aircraft as G-AJVH and painted it "Fairey Blue," a special company color. It was placed in storage in 1948, where it remained until Sir Richard Fairey gave orders to restore the aircraft, a project which began in September 1954.

It turned out to be a major job, as the aircraft had to be completely stripped and rebuilt. Many important parts were found to be missing and a nationwide search for genuine replacement components was started. The work continued to completion and the aircraft finally flew again in October 1955. It has been maintained in flying condition ever since. Spares are a continual problem and a second engine is, at this moment, being rebuilt by the Royal Navy and Bristol Aviation.

In October 1958, the aircraft was repainted in the original colors and given the code lettering "5A" which was that of the leading aircraft of the first wave from HMS *Ark Royal* to attack the German battleship *Bismarck*. This was done specifically for

The Historic Flight delights the crowds at air shows each year. Here the Fairey Firefly (top), Hawker Sea Fury (center) and Fairey Swordfish (bottom) pose for a photo.


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the film "Sink the Bismarck" and the aircraft still retains these colors.

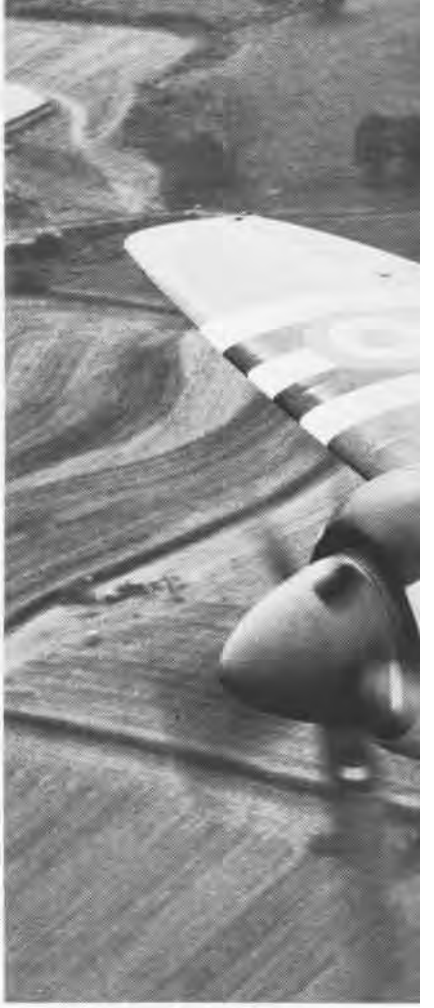
The *Swordfish* has two regular pilots, Lt. Cmdr. Wilkinson and Cmdr. Shercliffe. They share 60 shows a year between them. The responsibility for maintaining this historic aircraft and ferreting out hard-to-find parts falls primarily to Aircraft Artificer 1st Class Ron Gourlay. It's a tough job but very rewarding.

The Historic Flight also features a Hawker *Sea Fury*. In 1950, while serving with the Royal Navy's 807 Squadron, this aircraft, F.B.11 TF956, roared over war-torn Korea and still bears the flak scars to prove it. Now, 31 years later, this aircraft roars over the tranquil countryside of southern England. TF956 was the first *Sea Fury* F.B.11 to be produced by Hawker Aircraft Ltd. in 1948. After serving at various naval air stations, the aircraft went to Korea and flew some 200 operational sorties.

TF956 was retired from the Royal Navy in 1954, and was later bought back by Hawker Aircraft Ltd., for resale abroad. The condition of this plane was such that the decision was made to restore her for the Hawker Historic Aircraft Collection. In 1970, however, she was offered to the Royal Navy, which completed restoration and brought her up to flying condition in 1972.

The third aircraft of the Historic Flight is Fairey *Firefly* WB 271. This plane entered service with the Royal Navy in July 1949, with 814 Squadron at RNAS Culdrose. She left Culdrose and went to Korea, where she served with distinction. Later she was turned over to the Royal Australian Navy and served at RANAS Nowra, New South Wales, until 1966 when she was slated for scrapping. However, members of her original squadron, 814, happened to be visiting Sydney at the time and when they discovered that the aircraft was destined to be cut up for junk, they raised enough money among themselves to buy her. The price was £160.

The old warrior was triumphantly returned to the United Kingdom aboard HMS *Victorious* and presented to the Fleet Air Arm Museum. In 1972, however, it was decided to restore the aircraft to flying condition and include her in the Historic Flight. The current colors of this *Firefly* are the same ones she wore while operating in Korean waters.



The Sea Fury (top) and the Firefly (bottom) still fly over the English countryside side as hey did more than thirty years ago.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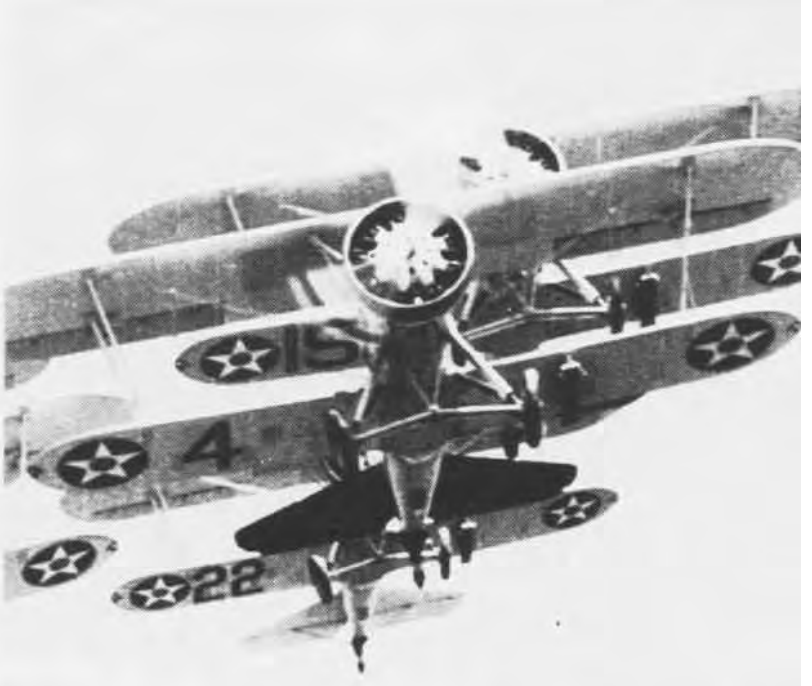
Marine Fighting Squadron Nine-M

By Jess C. Barrow

This is a condensation of one chapter from the book *Marine Fighting Squadron Nine-M* by Jess C. Barrow, published in March 1981 by Tab Books, Inc.



Tight formations were the norm. Occasional wing tip bombing caused much consternation among crew chiefs.

Marine Fighting Squadron Nine-M (VF-9M), United States Marine Corps, was without a doubt one of the most colorful squadrons in the history of Marine Aviation and – in some ways – one of the most controversial. It was based at Brown Field, Quantico, Va., and during the 1930s it performed at almost every important military and civil function in the United States in the promotion of Marine Aviation.

This intense publicity campaign was launched in the spring of 1930 by Colonel Thomas C. Turner, Officer in Charge of Marine Aviation, after repeated attempts had failed to convince his superiors in the Navy Department that additional funds were badly needed for the survival of Marine Aviation. He felt that the public exposure and the resulting publicity was sure to help his cause. He was right! In little more than a year, this squadron had established itself as the most colorful fighter squadron in Marine Aviation with its daring air shows at the 1930 Chicago National Air Races, followed by winning the "Sir Charles Orr" Trophy at the Miami All-American Air Maneuvers, awarded for the most outstanding performance by a military squadron.

At the 1931 Cleveland National Air Races, VF-9M flying nine Curtiss F7C-1 *Seahawks* left a lasting impression on spectators with its first public performance of the "Squirrel Cage" – a maneuver designed especially to dazzle air show fans.

The person responsible for putting the squadron together was First Lieutenant Lawson H. M. "Sandy" Sanderson, one of the Corps' finest pilots. When Sandy was recruited for the job, he asked what his restrictions were and was told, "Just get the job done anyway you can. We don't want to know how you do it, just don't get caught."

With these questionable words of encouragement, Sandy turned his attention to the selection of pilots and ground crews. Only those who were exceptional in all disciplines were recruited for the squadron. As for pilots, he made no distinction between officers and enlisted men. All that mattered was the ability to fly better than most.

As the squadron's popularity continued to grow, it did not go unnoticed in Washington. In the fall of 1932 and early 1933, the Marine Corps was allocated 28 new Boeing F4B-4 fighters, 16 to VF-9M and 12 to VF-10M on the West Coast. In July, the 12 assigned to VF-10M were reassigned to VF-9M, making it the largest and most modern fighting squadron in Marine Corps history.

Now that VF-9M was in the air show business, Sandy decided the new planes should be painted in special air show markings. Lieutenant Colonel Ross E. "Rusty" Rowell, group commander at Brown Field, agreed with Sandy. The engine cowls and wheels of all the F4B-4s were painted bright red, similar to the "Red Devil" markings used on the F7C-1s. Each three-plane section carried solid color trails in red, white and blue. The section leader's plane was red, plane number two (left wing) a white tail and the number three plane (left wing) a blue tail. The fuselage remained Navy gray, the wings silver with the top of the upper wing orange-yellow. Centered across the top side of the upper wing was "U.S. Marines" in large letters. To help the pilots quickly locate each other while rolling around the sky in wild maneuvers, regulation squadron markings were eliminated and replaced with large individual plane numbers 24 inches high on each side of the fuselage. The same number, 30 inches high, was added to the underside of the right lower wing panel.

With plenty of airplanes, Sandy decided to make his debut with a full 18-plane squadron at the next air show. His opportunity came sooner than expected.

F4B-4s of VF-9M lined up at Brown Field, Va., show their non-regulation air show markings.

On 30 September 1933, Rusty Rowell informed Sandy that his squadron was to be one of several feature attractions at the National Charity Air Pageant in New York, 7-8 October. Sanctioned by the National Aeronautic Association, it promised to be a success, with all of "Who's Who" in aviation attending. Major Geiger, from Marine Headquarters, informed that many of the nation's congressmen and senators were attending the two-day affair, as well as other leading citizens and dignitaries, telephoned Rowell to order a maximum effort for the show. Geiger was going to make the most of this opportunity to show off his Marines.

Brown Field suddenly became alive. Crew chiefs often worked into the night to have planes ready for the next day's flight schedule. As this was to be a maximum effort, it was decided that Observation Squadron Seven-M (VO-7M) would accompany VF-9M to the pageant. The two squadrons had previously worked together with excellent results.

At 0810 on 7 October 1933, VF-9M left Brown Field with 19 F4B-4s (one spare) for Roosevelt Field, Long Island, N.Y. Departing ahead of VF-9M at 0745 was VO-7M with 13 Curtiss O2C-1 *Helldivers* commanded by Lieutenant Colonel Rowell, followed by two Ford transport planes carrying mechanics, staff officers and equipment. Last to take off were several small aircraft carrying newsmen and dignitaries from Washington. The two squadrons joined over Staten Island and arrived at Roosevelt Field at 1015 where they landed for public display before the air show in the afternoon.

The turnout for this giant air show was much greater than anyone had anticipated. Not only was the airport crowded to capacity, but all roads for several miles around were blocked with traffic trying to get close enough to see the show.

At 1515, the air show announcer turned the microphone over to Second Lieutenant Tom Ennis, public relations officer from Quantico, to give a running account of the Marines' portion of the show.

"Ladies and gentlemen, you are about to witness a flying demonstration of two crack squadrons of the United States Marine Corps from Quantico, Virginia. Under the command of Lieutenant Colonel Ross E. Rowell, they will perform tactical maneuvers plus others that will keep you on the very edge of your seat, I promise you."

Following the VO squadron's takeoff, Sandy led his entire squadron of 18 planes in a close-formation takeoff. It was the first time the squadron had been at a field large enough to try this, and it came off perfectly.

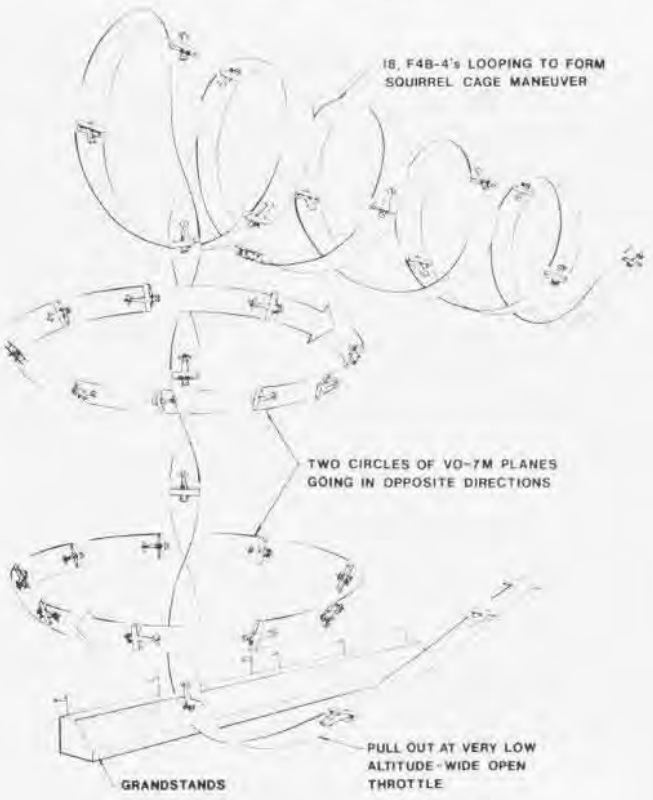
From this moment on, the audience seemed to be completely engrossed in the Marines' hair-raising maneuvers. The two squadrons worked beautifully together. Each gave demonstrations both singly and together of close-formation flying and dive bombing. Dive bombing thrilled the audience as the planes dived straight down – engines wide open – and let their bombs explode on the target. After several more maneuvers, the two squadrons were ready to add the *coup de grace* to the air show.

The announcer said: "Now ladies and gentlemen and honored guests. You are about to witness one of the most exciting, death-defying displays of flying ever performed before the public. Called a Squirrel Cage, it was made famous by none other than Lieutenant Sandy Sanderson, commanding officer of Fighting Squadron Nine, that has been so ably performing for you here today. He will be assisted by the observation squadron." As the crowd sat staring upward, Sandy leveled off at 8,000 feet and gave the hand signal for the squadron to form an echelon to the right.

While this was taking place, Rusty Rowell with the *Helldivers* had formed two tight six-plane circles, one at 2,500 feet and the other at 4,000 feet, one above the other, but going in opposite directions.

Observing that the *Helldivers* were in position, Sandy gave the tally-ho signal to start the Squirrel Cage. Diving down to the left to pick up speed, he eased his plane up and over into the first loop. He was followed by the other planes, one by one, at three-second intervals until the entire squadron was going around in loops. During the previous two weeks, Sandy had found that in order to accommodate 18 airplanes in a Squirrel Cage, it was necessary to make each loop slightly more offset; in other words, when all 18 airplanes were going around, it looked as if they were following the coils of a giant spring lying on its side. Sandy continued the Squirrel Cage until he was above the circling *Helldivers*. Then, as he came down the back side of his last loop, he continued straight down, executing several vertical rolls as he dived for the center of the two six-plane circles of *Helldivers* below. Each plane in the squadron followed single file in a vertical column of diving, rolling and screeching airplanes, each going through the center of the two circles of *Helldivers* below at almost 300 miles per hour. As each F4B-4 cleared through the last circle of *Hell-*

The Squirrel Cage



Squadron forms a right echelon prior to entering its squirrel cage maneuver.

VF-9M pilots pose with the Sir Charles Orr aerobatic trophy won at the 1931 Miami All-American Air Maneuvers. 1st Lt. "Sandy" Sanderson is third from the right.

VO-7M practices for the New York City Air Pageant in October 1933.

divers, it pulled out of its dive so as to pass in front of the huge crowd at low altitude. The noise from the wide-open engines was so intense that most people had to cover their ears.

Their performance at the New York show gave Marine Aviation the extra shot in the arm it needed. Admiral King, Chief of the Navy's Bureau of Aeronautics, was delighted and quickly commended Geiger and Rowell for the performance. In the weeks ahead, the Congress and Senate suddenly became more receptive to the needs of Marine Aviation. The Admiral revised the Navy's budget by increasing the Marines' portion, allowing the purchase of new dive bombers then under test by the Navy.

Sandy was learning many new things about commanding an 18-plane exhibition squadron. Problems appeared repeatedly that had to be solved immediately. There were too many close calls. This was not ordinary formation flying they were engaged in. It was a business that could kill in seconds and he was aware that one little mistake was all it would take.

One of the critical factors was timing. When 18 airplanes fly wing-to-tail and wingtip-to-wingtip, everyone must absolutely understand each maneuver and at all times be exactly where he is supposed to be, at the precise time. He must be able to identify every switch, lever and valve in the cockpit by feel, never for a moment taking his eyes from his wingman to look inside for anything. This means that pilot and airplane must be molded into one, never for a second letting the airplane fly the pilot. Each day, before and after flying, a briefing was held to discuss any problem. Sandy was a perfectionist; he often remarked to his pilots, "When you men leave this squadron, other flying will be easy." Commenting on this, Brigadier General Frank Dailey, USMC(Ret.), said, "You know, after I left the squadron I often remembered Sandy's words, which proved to be true. He was probably the best pilot ever produced by the Marine Corps, and I'm sure he used to get impatient trying to teach us to fly as well as he could."

For the next four years VF-9M continued with its aggressive promotion of Marine Aviation. Its popularity grew until it could no longer meet the demand for public and military appearances. In 1935 it performed at 20 air shows across the United States and Canada. The squadron was flying open cockpit airplanes at 150 miles per hour through all kinds of weather to and from these appearances, and this was an onerous chore. In addition, unlike demonstration teams of today, VF-9M was required to carry a full military load. In the years 1935 through 1937 this squadron was Top Gun in the naval service and in 1936 it won both the bombing and gunnery trophies. A remarkable feat in those days!

Many aviation historians associated with flying during that time period believe that no demonstration team has ever surpassed VF-9M's all-around qualities of showmanship and daring, especially with the use of 18 airplanes. Clifford Henderson, president of the National Air Races for many years, summed it up perfectly when he released this press bulletin for the news media: "They have glorified the National Air Races with their presence!"

On 1 July 1937 this squadron was designated VMF-1 and on 1 July 1941, it became VMF-111. The leading Marine Corps aces can be counted among its distinguished alumni.

Cdr. Decker and Lts. Dodsworth and Marsh with their S-3 Viking.

The wind was cold but the atmosphere was warm and friendly at the International Air Tattoo at Royal Air Force, Greenham Common, England. Once again a diverse group of eagles had gathered to show off their aircraft and to demonstrate their aerial skills. Over the years the Air Tattoo which first took place in 1971 has expanded and now includes participants not only from the North Atlantic Treaty Organization but from other countries as well.

There were antique aircraft from WW I, hot air ballooning and parachuting, as well as some spectacular flight demonstrations by Britain's *Red Arrows*, the *Swallows* from Belgium, *La Patrouille de France*, the Royal Jordanian *Falcons*, *Patrouille Suisse*, *Il Frecce Tricolor* of Italy, the Canadian *Starfighters*, the Austrian *Karo AS*, and the Royal Netherlands *Grasshoppers*.

This was the tenth anniversary of the Air Tattoo and the theme this year was "Sea Search." Billed as the largest gathering of antisubmarine, maritime patrol, and search and rescue aircraft ever to be staged, it attracted planes and crews from all over the world. Some of the aircraft participating were the British Aerospace *Nimrod*, the Pilatus Britten Norman *Defender*, the Breguet *Atlantic*, the Fokker F-27 *Maritime* and others. Representing the U.S. Navy were several P-3 *Orions* and an S-3A *Viking*. In all there were 120 aircraft from 22 countries on static display.

There were also a large number of competitions and trophies for Sea Search 81 crews and the U.S. Navy made an excellent showing. A VP-10 *Orion* flown by Lieutenant Commander Robert Ferguson captured the Rolls Royce trophy for the best overseas entry in fixed wing competition. This aircraft and its crew also took the Britten Norman trophy for the best fixed wing ground exercise and the EMI search water trophy for detection efficiency. The trophy for best adherence to schedule was won by Commander Decker and Lieutenants Dodsworth and Marsh of VS-30 in their S-3A *Viking*.

Some 250,000 people attended the two-day show. At one point, traffic was backed up for 17 miles by spectators trying to get to the base.

Sopwith Camel was a popular participant.

By Terry C. Treadwell

Photos by Tony Theobold

P-3 Orion from VX-1 was part of the U.S. Navy contingent which took part in the International Air Tattoo 81.

Fokker biplane conjures up images of the early days of air combat.

HINTON Iron man

It was a small informal gathering to honor a man whose colorful aeronautical exploits began more than a half-century ago. Mrs. Anesia Machado, herself a noted aviatrix, had traveled from Rio de Janeiro to Pompano Beach, Fla. on behalf of the Brazilian government to present the prestigious Santos Dumont medal to an extraordinary American named Walter Hinton. The ceremony took place at the old aviator's home in Florida on July 10, 1981. Also on hand for the presentation were the Brazilian Consul, Mr. Agildo Moura, and Colonel and Mrs. Alberto Baltor of the Brazilian Embassy in Washington, D.C.

Hinton is well accustomed to acclaim. In recent years he has been feted in similar ceremonies by Admiral Thomas B. Hayward, Chief of Naval Operations, and by Dr. Noel Hinners of the National Air and Space Museum. During his long lifetime he has received numerous U.S. and foreign awards, medals and commendations for his aviation achievements. Not the least of these is the Navy Cross and a large gold medal, one of only seven struck by the Congress of the United States. But he was especially pleased to receive the Brazilian medal which is named for a man who so greatly influenced the brave beginnings of manned flight. Hinton is one of the few people still living who knew and remembers Alberto Santos Dumont whom the Brazilians call "The Father of Aviation."

Now in his ninety-second year, Walter Hinton, Naval Aviator #135, is best known in the United States as the pilot who flew the left seat of the Navy-Curtiss NC-4 which made the world's first flight across the Atlantic. Three of these big wooden-hulled flying boats took off on that historic trip, but only NC-4 made it all the way. That was in May 1919, eight years before the nonstop solo flight of Charles A. Lindbergh.

Returning to the United States, Hinton, then a lieutenant junior grade, flew the big Navy-Curtiss seaplane on a recruiting tour of the United States. In December 1922 he was in the headlines again. He and two other Naval Aviators took off from the Naval Air Station, Rockaway, Long Island, N.Y. in a free balloon to study the effects of winter weather on lighter-than-air flight. They were blown northward by high winds for many hours. When the weight of snow finally brought the craft down, they were spilled out in the frozen Canadian wilderness near Hudson Bay. In minus-30-degree temperatures and hip-deep snow they struck out on foot to find civilization.

Back in the United States, days went by and then weeks. Hinton and his party were all but given up for lost. Without food or shelter it was unlikely that the men had survived for long in the hostile winter environment. But with determination, the three plodded on through the snow and eventually came to a small settlement. Thirty-one days after their takeoff, they made it safely back to civilization. Except for some frostbite they were none the worse for wear.

The 1920s were years of uncertainty for Naval Aviation. Personnel strength had fallen from 6,716 officers and 30,693 enlisted men at war's end to 534 officers and 2,209 enlisted men by 1922. Only 314 pilots remained on active duty with the Navy. Funding was austere with little improvement expected. Indeed, President Coolidge, who inherited the White House in 1923, reportedly asked at one point during his term of office, "Why can't we buy just one aeroplane and let the aviators take turns flying it?"

As the decade began, the *New York World*, a strong supporter of American aviation, made Hinton a tempting proposition. The paper would sponsor and finance the world's first flight from New York to Rio de Janeiro with Hinton as pilot. By then, he had spent almost 14 years in the Navy and loved it. But he was a compulsive adventurer and could not resist the proffered challenge. Reluctantly, he resigned his commission on January 1, 1922, and began preparations for another new and exciting "first."

Hinton's plane was a twin-engine Navy surplus H-16 Curtiss flying boat. It was named *Sampaio Correia* after a well-known Brazilian Senator, aviation enthusiast and president of the Brazilian Aero Club. Dr. E. Pinto Martins, a Brazilian national, served as copilot and the mechanic was John Wilschusen, an American. Writer George Bye and photographer Thomas Baltzell went along to do a series of articles which were distributed in installments to 80 different newspapers across the United States.

Sampaio Correia left New York on August 17, 1922, and headed south. During a night landing in the open sea off the big U.S. Naval base at Guantanamo Bay, the bottom was torn out of the old wooden flying boat and the aircraft sank to the upper wing. Hinton and his crew scrambled up onto the floating airfoil. USS *Denver* happened to be in the vicinity and personnel on the bridge caught a glimpse of *Sampaio Correia's* lights which were extinguished as she made contact with the water.

As the five men atop the wing considered their plight, they became aware of a splashing in the water about them. Unbeknown to Hinton

Walter Hinton stands beside a portrait of himself as a young Naval Aviator.

WOODEN BOATS

By Captain Dick Knott

and his crew, they had set down in an area which had been designated for garbage disposal by ships frequenting the naval base. Large sharks, conditioned by the daily dumping, had quickly gathered about the sinking aircraft for another meal.

Meanwhile, aboard *Denver,* the officer of the deck informed the commanding officer of what he had seen, advising him that it was probably a shooting star. The captain was not so sure. He had been reading about the goodwill flight and knew that Hinton would be passing through this area on his way south. He ordered the ship's searchlight to sweep the area in question. There they found the five men huddled on the wing with Hinton furiously waving his arms to make certain they had been seen. They were quickly rescued and the sharks went without supper that night. George Bye later reported that the sharks "not only followed the lifeboat to *Denver,* but even pursued the wrecked plane when it was towed into Guantanamo."

All's well that ends well but *Sampaio Correia* was now an unsalvageable wreck. Hinton, undaunted, immediately set about finding another aircraft with which to continue the flight. Contacts in Washington cleared the way for Hinton and his backers to purchase another Navy H-16. An aircraft in good condition was identified at the Pensacola naval air station and the project was back on track.

Walter Hinton and his intrepid crew set out from Pensacola on September 3, 1922, in *Sampaio Correia II* and retraced their steps to Cuba. From there they moved on to Haiti,

Hinton (arrow) receives a tumultuous welcome in Rio.

where they stopped for an engine change. That task detained them until the 7th of October, when they took off again and proceeded eastward by way of Santo Domingo to Puerto Rico and the Virgin Islands and thence south along the chain of the Windward Islands. At Trinidad, disaster threatened *Sampaio Correia* when the steamer *Viking,* alongside which the aircraft was moored, caught fire and burned to the waterline. Quick action saved the aircraft and she was towed out of harm's way with only a singeing.

Now Hinton and company crossed over to the mainland of South America and followed the coastline in a southeasterly direction. They put in a at places like Georgetown and Paramaribo but there were also many unscheduled stops along the way.

Fuel now became a major problem. As they proceeded slowly toward their destination, large port towns were few and far between and, although prior arrangements had been made for refueling at predetermined

Quotes attributed to Capt. Albert W. Stevens, USA, are reprinted from an article which appeared in The National Geographic Magazine, April 1926, entitled "Exploring the Valley of the Amazon in a Hydroplane."

Hinton (in cockpit) and the crew of Sampaio Correia.

locations, the gasoline frequently failed to materialize. Hinton was often obliged to fly until he was almost out of gas, ultimately landing on a river or a quiet bay to forage for fuel. Sometimes natives had to be persuaded to paddle one or more of the party to the nearest town in their canoes. Here, arrangements were made to secure some precious gasoline which was then taken back to the aircraft in cans via paddle-power. Spare parts were another problem which taxed even the resourcefulness of a crack mechanic like John Wilschusen.

The weeks and months marched by as they plodded steadily along. Nearing the end of their journey, they stopped for a complete engine overhaul. The tropic heat and the distance covered were taking their toll. But on January 9, 1923, *Sampaio Correia II* splashed down in the harbor at Rio to a warm welcome. Brazilians turned out in great numbers to welcome the first flight from New York. In all, it had taken just a few days short of six months and two airplanes to accomplish the feat. They had traveled 8,500 miles along the edge of a jungle wilderness to reach their goal, a flight which today is measured in a few hours.

Not long after his arrival in Brazil, Hinton was sought out for still another adventure. Dr. Alexander Hamilton Rice asked him to join his scientific expedition into the upper Amazon Basin to the headwaters of the Parima River. Intense heat, malaria, dense jungle and hostile natives had defeated previous attempts to explore this area. Rice and his party intended to proceed by steamer while Hinton scouted ahead by air, mapping and photographing the area and looking for hazards.

Hinton had always wanted to explore the Amazon and Rice's offer was readily accepted. He returned to New York by steamer with authorization to purchase any airplane of his choosing which he deemed suitable for the expedition. He had spent most of his flying career in Curtiss seaplanes, one of which had carried him across the Atlantic and another on the long flight to Rio. It is hardly surprising, therefore, that he chose a small two-place Curtiss flying boat which would provide the required range and would be maneuverable enough to negotiate landings and takeoffs in restricted quarters.

The airplane was named *Eleanor III* in honor of Mrs. Rice and proved to be an excellent choice for the expedition. Hinton's flying partner was Captain Albert W. Stevens, U.S. Army Air Service. Stevens, a pioneer of aerial photography, had been able to persuade the Army to grant him a leave of absence to photograph and map the Amazon Valley wilderness.

The expedition began in July, its primary purpose to survey certain tributaries and to follow one of these rivers to its source in the Parima Mountains. Rice also wanted to determine whether there was a passage between the Parima and Orinoco Rivers.

Hinton and Stevens usually took off in the early morning hours and flew 100 miles or more upriver sketching, photographing and looking for a good anchorage for the expedition vessel, which caught up with the advance party by dusk. Things went smoothly at first but malaria and other tropical diseases soon began to plague the group. One member died of his illness in September. The rest lived on quinine and pushed on.

As they moved further inland, the jungle became wilder and the way more difficult. Small rivers and streams were often overgrown and the only way they knew the rivers were there at all was the haze that hung directly over them in the early morning hours. On one side trip, Hinton and Stevens landed in an area that looked good from the air. But as they taxied toward shore a submerged rock ripped a gash in the wooden hull. Hinton had to think fast. They were in a remote area where, if they became stranded, they would be in deep trouble. On the other hand, if they could get the plane airborne again they could make it downstream to a point where the probability of rescue would be much greater. Hinton quickly moved the throttle to the wide-open

Ants made a meal of Hinton's shirt.

Eleanor III rests alongside a river bank.

position and nursed the badly leaking boat off the water.

The Curtiss biplane flew downriver until dusk. At night with no lights for reference, the jungle and the river blend together in darkness. Hinton put the seaplane down in the last moments of daylight and drove it up on an island beach so it would not sink. There they remained for 11 days repairing the aircraft. They lived mostly on fish, which they shared at one point with curious Indians who happened by. Stevens remembered, "They were not greatly surprised at the sight of the big plane. They seemed to think that the white giants might have almost anything."

Hinton and Stevens repaired *Eleanor III* their first two days on the island. During that time, however, the water level in the river fell, leaving the plane high and dry. Since it was too heavy for them to drag to the water, they were obliged to wait. On the eighth day, it began to rain and did so for three days. By morning on the eleventh day, the river had risen enough to float the aircraft and they took off to join the main party. On the way back, they encountered a rescue group which was working its way upstream looking for them.

Insects were an ever present problem when camping in the jungle. At night everything that might be eaten had to be suspended from lines to protect them from various ant varieties most of which are voracious. On one occasion Hinton hung his shirt on a fishing line before retiring for the night. In the morning he found the garment had been devoured by ants, apparently attracted by the salt from perspiration. They had climbed the tree and marched down the line after their meal.

There were other hazards awaiting the unwary explorer. Vicious piranha fish were present in great numbers. Attempts to catch them, however, always ended in lost tackle until they hit upon the idea of using a leader made of three strands of copper wire wound together. When a large specimen was finally captured and a knife inserted in his jaws, the fish clamped down so hard that its teeth were broken off on the steel blade.

When they camped ashore, Indians often ventured out to have a look at the strange white men and their flying machine. They called the plane "O Bicho Grande," the big bug. For the most part the Indians were friendly. Hinton recalls that "we always let them approach us and never made the first move. That way, there was no mistake about our intentions."

As they neared their destination the terrain became mountainous and more treacherous for flying. White water was now the norm and the steamer had been left far behind. Caches of gasoline for the plane were transported upstream by canoe.

On March 11, 1925, Hinton flew up the Parima River into a great canyon. There were many waterfalls and the gorge rose hundreds of feet in a few miles. Indian villages appeared along the way and they dropped gifts to the natives attached to small parachutes. The idea was to pave the way for the ground party which would follow.

As they neared the head of the canyon the river became very narrow. Hinton attempted to climb above the canyon walls but the engine overheated from the effort and they could not make it. They were now only 600 feet above the river. Fortunately, the canyon widened briefly and he managed to turn the aircraft around and head downstream. They followed the narrow, winding river back to quiet water where they were able to land. They had been the first white men ever to have penetrated this area.

Walter Hinton returned to the United States and remained active in American aviation for many years. He made a well-publicized flight across the country for the Exchange Clubs of America, visiting many cities along the way to promote aviation. Later, as chairman of a committee to develop a suitable air facility for the nation's capital, he was a driving force in bringing National Airport into existence.

On November 10, Walter Hinton will celebrate his ninety-third birthday. But his interest in exploration and discovery has not been dulled by his years. Not long ago, he was a guest at The Kennedy Space Center where he was given a complete tour of the Space Shuttle. Only a man who grew up in an era when manned flight was thought to be impossible can appreciate the spectacular progress that has taken place in such a short period of time.

Walter Hinton has been an integral part of that progress and has a drawer full of medals to remind him of the fact. But among his most prized possessions is a pair of Navy Wings he received some 64 years ago.

Photos by Capt. Albert W. Stevens, USA, courtesy of National Geographic Society

Curious Indians get a close-up look at Hinton's plane which they likened to a big bug.

NAVAL AVIATION HALL OF HONOR.
This is the tenth in a series of articles on each of the first twelve men to be enshrined in the Naval Aviation Hall of Honor.

Godfrey deC.

Godfrey deCourcelles Chevalier, one of the eagles of early Naval Aviation, was born in Providence, R.I., on March 7, 1889.

Modest and retiring, Chevalier did not seek the limelight, yet it was only a short while before he attracted notice because of his competitive nature. A well-rounded athlete, even up to his untimely death at age 33, he could chin himself with either hand and prided himself on being always physically fit. Chevalier was involved in many sports and was also a member of the high school battalion which won interscholastic military drill competition and in which he won individual honors for himself.

Inclined towards things military, Chevalier took the 1906 examination for the Naval Academy, topping the list both mentally and physically. When he graduated in June 1910, *The Lucky Bag* yearbook described him as "a curious mixture of New England Yankee and temperamental Gaul, both of which are eternally fighting for the mastery in his nature. Has all the warm likes and dislikes and the changeability of the Gaul, with the sterner qualities of the Yankee thrown in . . . Is early marked for great things . . . Is always liked and readily adapts himself to whatever company he may be in. Will probably make an excellent officer, and you may be very certain that he will always make an excellent friend."

As a midshipman on USS *New Hampshire*, fulfilling a requirement of two years' sea duty before being commissioned an ensign, Chevalier once rescued 20 men from drowning. On the night of October 1, 1910, a shoreleave party of 150 sailors was returning to the ship in a barge towed by a Navy cutter in Chevalier's charge. They had barely cleared the 157th Street dock in New York City, bucking a high wind that kicked up a heavy chop in the Hudson River. The tide was running strong and swells from several large river boats caused the cutter and barge to pitch dangerously. Suddenly a large wave swamped the barge and a shouting, struggling mass of men was hurled into the cold waters.

More than half the men could not swim and Chevalier was quick to appreciate the seriousness of the problem. The capsizing was witnessed by the ships of the fleet but even as they were lowering their launches, sailors were going under. Chevalier dove from the cutter again and again — until he had pulled from the water the incredible number of 20 men. When the young midshipman returned with his twentieth man, he turned to go again but his weary limbs refused to obey. He had to be dragged into the boat unconscious.

The limelight was forced on Chevalier again the following March while *New Hampshire* was being drydocked at Brooklyn. Standing in the engine room, he was startled to see water rushing into the fireroom. He quickly diagnosed the problem as a faulty valve. Calling to the chief machinist, he set out to correct the situation before the engine room was flooded. On his hands and knees, he crawled to the problem area, grabbed a bucket of red lead, dove into the murky water, and smeared the lead around the leaking valve. This checked the flooding temporarily until permanent repairs could be

Chevalier

Chevalier making landing approach.

made. Chevalier's fast action saved the day.

Chevalier was commissioned ensign while aboard *New Hampshire*, and transferred to *Petrel*, a gunboat also operating with the Atlantic Fleet. Later that year he was ordered to duty with the Naval Aviation Camp at the Naval Academy where he completed a course in aviation.

In 1913 he participated with other aviators in Atlantic Fleet maneuvers at Guantanamo Bay, Cuba. Afterwards, Chevalier returned to the Annapolis aviation camp to serve as an instructor until January 1914.

The young aviator next reported to *Mississippi* for a short time before joining the Aviation Detachment on board *Birmingham*, for aviation maneuvers off Mexico. After further aviation service in *North Carolina*, he reported to the Naval Aeronautic Station, Pensacola, Fla., in early 1915 to take part in aviation experiments. In March 1915 he was designated Naval Aviator No. 7 and, during that year, he had temporary additional duty as inspector of hydroaeroplanes which were then under construction at Marblehead, Mass.

In June 1916 Chevalier was again assigned to *North Carolina*. There he participated in the installation of the first catapult on a naval vessel and piloted the first plane to be launched by the device. When the U.S. entered WW I in April 1917, Chevalier became a member of the first U.S. naval aeronautic detachment in France. Later, he assumed command of the U.S. Aeronautic Station, Dunkirk.

Early in 1918, after temporary duty in London, England, Chevalier took command of the Northern Bombing Squadron, U.S. Naval Aviation Forces, quartered in Paris, France, and before the end of the year was assigned to the U.S. Naval Headquarters, London. After the Armistice in November, 1918, Chevalier served in a number of staff assignments before assuming command of the Atlantic Fleet Ship-Plane Division at Mitchell Field, Long Island, N.Y.

In late 1920, he became involved in fitting out the Navy's first aircraft carrier, USS *Langley*. Continuing aboard *Langley* after her commissioning, he became the first to land aboard on October 26, 1922. Less than a month later, he was seriously injured in a plane crash near Norfolk, Va., and died on November 14.

Two destroyers (DD-451 and DD-805) and an airfield at Pensacola, Fla., have borne the name of this intrepid young officer whose contributions played an important role in the early development of Naval Aviation and helped to establish the aircraft carrier as an essential element of naval warfare.

PEOPLE·PLANES·PLACES

Records

Several squadrons marked accident-free flight-hour milestones: HMM-164, VT-10 and VR-56, 100,000 hours; VA-128, 75,000; HC-3, 50,000; VMA-121, 39,000; and HS-15, 28,000.

VA-85, commanded by Cdr. Dan Wright, recently established a new Mediterranean record in in-flight refueling. The *Black Falcons*, embarked aboard *Forrestal* and

flying the Grumman-built KA-6D tanker, delivered over 30,000 gallons of aviation fuel to F-4 *Phantoms* assigned to VF-74 of NAS Oceana, Va., and VMF-115 of MCAS Beaufort, S.C., also deployed aboard *Forrestal*. The record was established after eight hours of continuous flight operations.

The *Thunderbolts* of VA-176 recently returned from a successful seven-month deployment to the Indian Ocean and the Med.

The following squadron personnel achieved milestones in carrier arrested landings aboard *Independence* during the cruise: 100 Traps: Cdr. Tim Beard, X.O.; LCdr. Ron Zimmerman; Lts. Mike Menth and Jerry Mantheu; Capt. Jim Burke, USMC; and Ltjgs. Kevin Dobson, Tom O'Bryant and Tim Masem. 200 Traps: Cdr. Doug Griffith, C.O.; Cdr. J. B. Dadson; LCdrs. Larry Forgerson, Carl Carden, Dean Ellerman and Keith Naumann; Lts. Tom McMahan, Jim Blaa, Joe Kilhenny, Marc Tripp and Tom Frey. 300 Traps: LCdrs. Paul Brown, Bob Mihocik, Brian Moss and Jim Tankersley; Lts. John Stahura, Mike Beebe, Pete Moore, Bob D'Antonio, Bob Walker, Gus Orologas and Jim Daigneau. 400 Traps: LCdr. Roy Hart. The *Thunderbolts* are commanded by Cdr. D. K. Griffith.

HC-3 Det 106 has begun its second decade as a continuous detachment. Det 106 was initially deployed in April 1971 and for 10 years HC-3 has maintained the det by rotating personnel. Despite this constant turnover, Det 106 has averaged 1,069.1 flight hours a year for a total of 10,691 flight hours. It has transferred 57,121.3 tons of cargo, carried over 25,230 passengers, serviced 2,514 ships and shore stations, and performed medical evacuations of over 155 personnel.

VT-10 in Pensacola, Fla., recently amassed a record 100,000 consecutive accident-free hours, making approximately 75,000 flights in eight T-39D *Sabreliners* and 20 T-2C *Buckeyes*. The squadron

Lt. Rutherford

averages 50 sorties daily. The flight marking the 100,000th hour was made in a T-2C by Lt. Bob Rutherford. The student NFO was Marine Corps 2nd Lt. Dan Burke, making the historic flight a joint Navy/Marine Corps effort.

Honing the Edge

"This is a drill! This is a drill! Helo in the water! Now activate the helo open-ocean salvage bill." That announcement, broadcast over the 1 MC system on board *Independence* last January, set the stage for the first of two practice sessions during which *Independence* and her embarked helo squadron, HS-15, would hone their helo salvage skills. The SH-3H, though configured with a boat-type hull and auxiliary flotation air bags, does not make water landings as a matter of routine. Rapid recovery of the aircraft is of primary importance, and the combined efforts of the carrier's bridge watch team, crane team, life boat crew, and salvage divers must dovetail precisely if the helo is to be successfully salvaged. When the training session was over and all hands had secured from helo open-ocean salvage drill, important experience had been gained.

"Helo in the water! Helo in the water! Now man all helo open-ocean salvage stations." It was almost three months later and this time it was *not* a drill. *Red Lion* 610 of HS-15 was forced to make a water landing in the Indian Ocean as a result of a transmission failure. The *Red Lion/Independence* team went into action and quickly demonstrated that they had learned their lessons well. The helo was recovered without incident and 11 days later *Red Lion* 610 was in the air again.

Awards

The following is a partial list of current Battle Es: VQ-4, NAS Patuxent River, Md.; VA-65 and VF-102, NAS Oceana, Va.; VP-11, NAS Brunswick, Maine; VAW-121, NAS Norfolk, Va.

Lieutenant Commander Bob Melvin, U.S. Coast Guard Air Station, Elizabeth City, N.C., recently received the American Legion's 1981 Valor Award from Aviator's Post No. 743 in New York.

Cdr. Melvin was selected for a rescue mission flown on January 5, 1980, while he was serving as pilot and aircraft commander of Coast Guard HH-3F 1430. The mission involved the rescue of eight crewmen from the tug *A. W. Guill,* which suffered a complete loss of steering after a collision with its barge during a severe winter storm. As the tug began to sink, the crew was forced to abandon ship onto a life raft. Dispatched from CGAS Elizabeth City, LCdr. Melvin found it necessary to fly the helicopter at an altitude of less than 100 feet because of near-blizzard and icing conditions. An inoperative radar and unreliable navigational signals, due to the low altitude, further complicated matters. Using dead reckoning, LCdr. Melvin finally located the life raft, which was being tossed by 15-foot seas and 45-knot winds. He maneuvered the helicopter into position for the eight hoists. With survivors safely on board, he flew at 50 feet above the ocean's surface and returned to Virginia Beach only to find the airports below instrument approach minimums and visibility down to 1/16th of a mile. Already fatigued by the demanding flight, he cautiously maneuvered his way to a safe landing with less than 30 minutes of fuel remaining. He was awarded the Distinguished Flying Cross for his skill and determination in making the rescue.

Et cetera

The officers of VA-93 held receptions recently while *Midway* (CV-41) visited Perth, Australia. Visitors from the Australian Navy included members of HMAS *Melbourne*. Many local Perth residents also attended and were entertained by video tapes of *Midway's* flight operations. After more than 50 consecutive days in the Indian Ocean, *Midway* had traveled to Australia for joint exercises with the Australian and New Zealand Navies.

Et cetera

Senator Barry Goldwater (R-Ariz.) prepares for flight in an F/A-18 *Hornet* strike fighter at the Naval Air Test Center in Maryland. A retired Air Force major general, the senator has flown more than 160

types of aircraft. Assisting Senator Goldwater with his equipment is a crewman from McDonnell Douglas Corp., prime contractor for the F/A-18.

Change of Command

ASWOC-374: LCdr. J. Steve Nettles relieved Cdr. Victor Walsh.

ComFitAEWWingPac: RAdm. George M. Furlong, Jr., relieved RAdm. Paul T. Gillerist.

ComNavAirLant: VAdm. Thomas J. Kilcline relieved VAdm. George E. R. Kinnear II.

ComTacWingsLant: RAdm. John H. Fetterman, Jr., relieved RAdm. Douglas F. Mow.

ComPatWing-11: Capt. S. Frank Gallo relieved Capt. William T. Pendley.

CVW-6: Capt. James A. Lair relieved Capt. Timonthy W. Wright.

HC-3: Cdr. Clinton W. Davie relieved Cdr. John C. Cook, Jr.

HC-9: Cdr. Paul D. Breithaupt relieved Cdr. James P. Cavanaugh.

HC-16: Cdr. P. Douglas Wilkes, Jr., relieved Cdr. Rolland B. Beougher.

HM-16: Cdr. Raymond M. Carlton, Jr., relieved Cdr. Paul F. Erny.

HMH-361: Maj. David E. Niederhaus relieved Lt.Col. Earl L. Bufton, Jr.

HS-2: Cdr. Jeffrie E. Wiant, Jr., relieved Cdr. Steven W. McDermaid.

HT-18: Cdr. Thomas W. Tilt relieved Lt.Col. Robert G. Clapp.

MAG-29: Col. William H. Huffcut II relieved Col. Van S. Reed.

MABS-13: Maj. Robert D. Jones relieved Lt.Col. Cary Kelly.

MATSG, NATTC Lakehurst: Maj. Michael P. Rohlfs relieved Lt.Col. Leroy B. Evans.

MATSS-902: Maj. Joseph A. Kelleher relieved Maj. Thomas M. Haddock.

MWSG-27: Maj. Robert H. Quinter, Jr., relieved Maj. Joseph C. Yannessa.

NAMTraGru Memphis: Capt. Charles W. Bolinger relieved Capt. Edward O. Williams.

NAS Bermuda: Capt. Stephen F. Loftus relieved Capt. R. W. Weir.

NAS Memphis: Capt. Benjamin B. Woodworth relieved Capt. George Ormond, Jr.

NAS New Orleans: Capt. Frank R. Schluntz relieved Capt. Robert R. Wilmer

NARU North Island: Capt. Stephen R. Slack relieved Capt. Claude L. Fare.

NAESU Philadelphia: Cdr. Bruce A. Ryan relieved Capt. Wallace C. Courtney.

Navy Astronautics Group, Point Mugu: Capt. C. O. Taff relieved Capt. J. H. Simpson.

VA-1074: Cdr. D. W. Thornhill relieved Cdr. J. C. Harris.

VF-24: Cdr. William H. Switzer III relieved Cdr. Charles R. Brokaw.

VF-43: Cdr. Charles R. Brun relieved Cdr Albert M. Van Pelt.

VF-114: Cdr. John C. Ensch relieved Cdr. Ernest E. Christensen.

VF-124: Capt. Lonny McClung relieved Capt. Gary Hakanson.

VMA-513: Lt.Col. Woody F. Gilliland relieved Lt.Col. Marx H. Branum.

VMAT-102: Lt.Col. Peter K. Davis relieved Lt.Col. Roy T. Edwards.

VP-31: Cdr. Kenneth D. Sullivan relieved Capt. Robert M. Howard.

VR-56: Cdr. Morris L. Newton, Jr., relieved Cdr. Melvin G. Burkart.

VRC-30: Cdr. Theodore K. Krohne relieved Cdr. Donald R. Gapp.

VS-24: Cdr. Phillip L. Reed relieved Cdr. James C. Roy.

VT-6: Cdr. R. A. Perron relieved Cdr. E. G. Stacy.

VT-25: Cdr. Donald W. Scott relieved Cdr. Robert L. Kiem.

VT-31: Cdr. Ralph Fink III relieved Cdr. Torrence Wilson.

VT-86: Cdr. Omer M. Brackx relieved Lt.Col. Noel E. Douglas.

VXN-8: Cdr. William J. Baumhofer relieved Cdr. Vincent J. Gilroy.

Professional Reading

By Lieutenant Commander Peter Mersky, USNR

Lamb, Commander Charles. *To War in a Stringbag.* Bantam Books, 1980. 369 pp. No photographs; illustrated with drawings and maps. $2.50.

To British carrier pilots of WW II, "Stringbag" meant only one thing: the Fairey *Swordfish,* a lumbering biplane designed in 1933 as a combination torpedo/spotter/recce aircraft. The *Swordfish,* as archaic as it was when war began, was employed until the end of hostilities and participated in several historic actions, especially during the first three years of the war. This entertaining book was written by a *Swordfish* pilot who flew this aircraft through the hectic period which followed the invasion of Poland in 1939. He served aboard HMS *Courageous,* and participated in the historic attack on Taranto Harbor in 1940, which effectively ended any threat from the Italian Navy. This officer was also on hand during British efforts to assist Greece in 1941. Besides containing some exciting descriptions of an area of combat operations less well known to most Americans, this book also provides a glimpse of life aboard a carrier in wartime. The story is told in a down-to-earth style, laced with British humor.

Pearce, George F. *The U.S. Navy in Pensacola.* University Presses of Florida, Gainesville, Fla., 1980. 207 pp. Illustrated, indexed.

This book covers the early history of the Pensacola area from the 16th century under Spanish rule, through the establishment of a U.S. navy yard in 1825, to the creation of the nation's first Naval Aeronautic Station in 1913. World War I and postwar activities are also detailed through the 1920s. Those who have spent any time in the Pensacola area, should find this book of both nostalgic and historical interest. Photographs of the developing complex, personalities and aircraft add to the story.

O'Neil, Paul. *Barnstormers & Speed Kings.* Time-Life Books, Alexandria, Va., 1981. 176 pp. Illustrated, indexed. Bibliography. $9.95.

This volume of the *Epic of Flight* series concerns itself with the unique collection of people, airplanes and events of the 1920s and 1930s, usually referred to as the barnstorming era of aviation. Peace always brings periods of uncertainty and unemployment for wartime flyers and those who stayed with the new business of flying after WW I, sometimes found themselves wandering from place to place, earning whatever money they could offering rides and thrills to the ever-ready public. This was also a period of aviation progress. Although air shows and air races were good entertainment they also provided testing grounds where some of the aircraft, power plants and equipment used in WW II were first developed. Illustrated with a wealth of photographs and specially commissioned drawings common to this series.

Miller, Thomas G., Jr. *The Cactus Air Force,* Bantam Books, 1981, previously published by Harper & Row, 1969. 247 pp. Maps, index. Paperback. No photographs. $2.50.

During WW II "Cactus" was the code name for Guadalcanal-Tulagi. With a handful of pilots, men and machines from three services, the Cactus Air Force, as it came to be called, flew out of Henderson Field and was able to keep the enemy at bay under difficult and primitive conditions. It was a shoestring operation but success was imperative. Navy and Marine Corps F4F *Wildcats* and Army P-400s, the latter being intended export versions of Bell P-39s, played key roles in preventing the Japanese from reclaiming the island. Together they helped to establish the momentum to push the enemy northward in retreat toward the home islands. This book concentrates on the spectacular aerial action of the Guadalcanal campaign. Although containing no photos, it does make use of well-rendered drawings of most of the primary aircraft involved, American and Japanese. There are also some useful maps which cover the area of action. A moving account.

Barrow, Jess C. *Marine Fighting Squadron Nine (VF-9M).* Tab Books, Inc., Blue Ridge, Pa., 1981. 239 pp. $7.95.

This book is an excellent research effort and fills a significant gap in historical writing on Marine Corps Aviation. The colorful Curtiss and Boeing fighters of the period come alive as the author describes their roles as part of VF-9M. Included are a number of rare photographs which have not been previously published. Appendices include a listing of the serial numbers of all the planes which served in the squadron, as well as a roster of squadron commanding officers. The book contains in-depth accounts of the air shows in which this unit demonstrated its aircraft and pilot skills in an attempt to keep Marine Corps Aviation before the public eye. It is the story of a group of outstanding officers and men who influenced Marine Aviation in its formative years. The trials of keeping a separate Marine Aviation organization alive during the war-weary twenties and depressed thirties is well told. This volume is excellent reading, as well as a valuable reference work.

TOUCH and GO

Winner at the Wire

If an idea by AD1 Jose Basco is adopted by the entire Naval Aviation community, it could add substantially to the $855 he has already won.

Assigned to the power plants section of the Aircraft Intermediate Maintenance Department at NAS Lemoore, Basco has designed a simple steel band and tightening screw, similar to an automobile hose clamp, that will hold turbine blades in place during installation of the fan in a TF30 jet engine.

Until Basco's idea, a wire was twisted around the blades to hold them in place, and four persons were usually needed to slip the assembly over the shaft and into place.

"That turbine unit cost $72, and each blade had to be held firmly in place while being installed. Sometimes the wire would slip or break, causing a bend in a blade. That meant lost time and a new unit would be needed," explains Basco, who switched from operating heavy equipment in the Philippines to working on Navy jet engines.

With Basco's idea, the turbine blade assembly can be safely lifted into place by just one person, saving time and money.

Basco made the first clamp in July 1979, and submitted the idea as a beneficial suggestion, complete with engineering drawings. The idea won him $855 at the local level, and if adopted navywide might win him much more. And he has already submitted another suggestion for a tool modification. But he won't be around to see it put into practice at Lemoore. He is headed for surface Gas Turbine Mechanic School at Great Lakes, Ill., where he will seek a change in rate to Gas Turbine Mechanic.

AD1 Jose Basco smiles with good reason.

Tailsitter Set to Travel

In 1954, Lockheed built the experimental Navy XFV-1, designed to take off from a standing start on its tail, transition to horizontal flight, and land on its tail wheels.

But in test flights, the "tailsitter" had a tough time landing in the upright position. The engine lacked the very fine control necessary for safe operation. Although the XFV-1 made successful in-the-air conversions from vertical to horizontal flight, the project never went beyond the prototype.

More than a quarter-century later, the XFV-1 will be doing some long-distance traveling — via ground transport.

After display at the Lockheed-California Company open house at the Burbank plant in 1978, the XFV-1 was donated by the Navy to the San Diego Aerospace Museum at Balboa Park.

The San Diego museum planned to display the tailsitter in its courtyard. Unfortunately, it was discovered the courtyard wouldn't stand the weight of the moving equipment and the aircraft. To display the XFV-1 inside the museum would require the building of another structure, something the museum couldn't afford. And the City of San Diego wouldn't allow the aircraft to be displayed in front, outside the museum walls.

So the XFV-1 will be making one more trip. The tailsitter's new home will be the U.S. Naval Aviation Museum in Pensacola, Fla. Lockheed Life, August 1981

XFV-1 tailsitter points skyward.

Big Bird Stops at Point Mugu

With its well-kept lagoon, NAS Point Mugu is a stopping place for just about every migrating bird on the West Coast.

But when a 700,000-pound bird stopped in for a visit, the local bird watchers were oooh-ing and ahhhing over a new flying star. The terns, egrets and other aerial voyagers had to give up the spotlight. The spectators had their binoculars trained on a giant galaxy – an Air Force C-5A *Galaxy*.

Almost 246 feet long, the huge aircraft can hold "about six or seven Greyhound buses," according to Seabee Dale Adams. Adams was coordinating training for Seabees from nearby Port Hueneme who were using the *Galaxy* to practice loading and unloading heavy construction equipment.

"We usually use C-141 *Starlifters* for these static loading exercises," Adams explained. "But this time the Air Force sent us the C-5A. It was a nice change."

Every battalion has an air detachment of 80 to 100 Seabees who, along with their equipment, can deploy anywhere in the world in 48 hours. For a normal air det mount-out, the men and equipment can be aboard and ready to fly in four hours or less.

It was just such a Seabee air det from Naval Mobile Construction Battalion 40 that provided disaster assistance to Jamaica following hurricane Frederick in 1979. **Judy Cole.**

The C-5A yawns wide for Seabee equipment.

WASPS Buzz NAS Miramar

The San Diego Chapter of the Women's Air Service Pilots (WASPs) recently toured NAS Miramar as guests of women Naval Aviators stationed in the local area.

The WASPs, a unique organization formed during WW II, was comprised of female pilots who were quasi-military. To release male pilots for combat flying, the Army Air Force authorized formation of the WASPs in August 1943. Technically civilians, they were subject to a number of military procedures. While undergoing training, they received the same flight instruction given male aviation cadets, with the exception of aerial gunnery and formation training.

The original intent was that WASPs would ferry only training airplanes. However, as the war progressed, their responsibility expanded to flying various types of non-combat missions in many other aircraft. These missions included towing sleeves for aerial gunnery, flying as practice targets for searchlight crews, and administrative flights.

Approximately 1,000 WASPs flew 60 million miles on operational assignments in 77 types of aircraft prior to deactivation of the organization in December 1944. Despite their military involvement and their contributions to the war effort, WASPs were not considered WW II veterans until March 1979. Of the original 1,000, 37 gave their lives in aircraft accidents during the war. Eight hundred are still living, and to keep in touch they hold a convention every two years.

Twenty former WASPs from the San Diego area participated in the Miramar tour which included a visit to one VF-124 hangar and an opportunity to pilot the F-14 flight simulator. According to Isabelle McCrae Hale, "It's incredible how much things have advanced. We had Link trainers during the war, but nothing like this."

Mrs. Hale flew a B-26 bomber during the war, towing targets.

The tour was continued at the hangar where the women looked closely at the *Tomcat*, and was followed by a visit to VF-126 and a close-up view of the A-4 *Skyhawk*.

JO3 Steve Tharp

Isabelle Hale gets F-14 simulator instructions from VF-124 pilot.

Letters

Albatross

I read with personal interest "You Can't Keep a Good Airplane Down" in the March 1981 issue of *Naval Aviation News*. I delivered HU-16D BuNo 141266 to the Naval Aviation Museum on August 13, 1976, after dipping it in the waters of Pensacola Bay a couple of times. Although the aircraft was destined to be struck, I felt it had a lot of life left, so I was careful to list any existing discrepancies. I'm happy to see this aircraft back in operation again. There is much value in many of the military aircraft that have been retired.

Again in your March issue, I was pleased to see the report on the retirement of NAP R. K. Jones. He and I flew together back in the fifties in a ferry squadron and are shipmates again, as he has joined my company. I can assure you that R. K. is still a hard-charger and is presently flying the Middle East, Europe and North Africa.

M. T. Burke, Exec. Vice President
Arab Wings
P.O. Box 3038
Amman, Jordan

Aviation Cadet Solo Bar

Please help! I need an Aviation Cadet solo bar for a permanent display. If you have one, please contact me at (213) 999-1567 or write:

Richard D. Kendel
5927 Penfield Avenue
Woodland Hills, CA 91367

Flopped Photo

In your February 1981 issue, there appears to be a mistake in the "Naval Aviation Review 1980." Although it is true that most Naval Aviators have a limited knowledge of ships, we do generally recognize the difference between the pointy end and the blunt end. At least some of us know that the island is on the starboard side. I call your attention to the picture of the *Kitty Hawk*, *Nimitz* and *Midway* task forces steaming in formation in the Arabian Sea, which appeared on three separate pages. It shows all three carriers with islands on the port side. Now, that can't be 'cause that's the side we land on! I think you printed the picture backwards.

LCdr. David Vaughn
Naval Plant Representative Office
Grumman Aerospace Corporation
Bethpage, NY 11714

Ed's note: You're right. The negative was flopped and we didn't catch it before the magazine went to press. Thanks for the "eagle eye."

Info Needed

I am an Italian aviation journalist. I collaborate with several Italian and English magazines and have written many articles about U.S. naval aircraft.

Presently, I am working on two books concerning histories of the Grumman S-2 *Tracker*/C-1 *Trader*/E-1 *Tracer* family, and the Douglas A-3 *Skywarrior*. I am also trying to make a complete list of all active and reserve Naval Aviation units, in the period 1950-75, including all commissioning and decommissioning dates, aircraft type assigned, wing code and deployment aboard carriers.

I would appreciate receiving anything which would be useful for my research. Any photographs loaned will be reproduced and returned to the owner. Please use air mail. I will refund all money spent.

Angelo Romano
via S. Altamura, 8
80128 Napoli, Italy

Corsair Photo

Congrats on your July issue. I recognized the full-page shot on page 8 and dug out my original 8x10 print. A notation said it was taken October 14, 1949, aboard USS *Sicily* (CVE-118). The plane was from VMF-322, F4U-4 BuNo 81100, but I can't make out the faint writing with the pilot's name.

The *News* continues to look good and read good. Keep it up.

Arthur L. Schoeni
Former Editor
Naval Aviation News

Reunions, Conferences, etc.

Air Group Seventy-five/Air Group Four reunion (in connection with Association of Naval Aviation's annual meeting May 6-8, 1982). For information, contact Lester Morris, 1760 Placita De Santos, Tucson, AZ 85704.

SQUADRON INSIGNIA

Attack Squadron 303 was established on July 1, 1970, at NAS Alameda, Calif., as part of a general reorganization of the Naval Air Reserve.

The squadron's history before the reorganization dates back to 1945, shortly after WW II, when a Naval Reserve group was organized at Livermore, Calif. In August 1948, Air Group 54 was divided into squadrons, one of which was Fighter Squadron 876. Both the name and the mission have changed through the years until the squadron evolved into Attack Squadron 303, under the operational control of Carrier Air Wing Reserve 30, also based at Alameda.

The *Golden Hawks* recently completed over six years and 20,000 hours of accident-free flying in the A-7B *Corsair*. This impressive safety record was accomplished during both carrier-based and shore-based operations. The squadron C.O. is Commander Don P. Smith.