

NAVAL AVIATION

NEWS



February 1978



COVERS - Front, F-4N Phantoms from VF-302 climb over Nevada desert. (See CVWR-30 feature beginning on page 22.) Cdr. Tom Irwin, VFP-306 C.O., took the picture from his RF-8G Crusader. VP-31 Orion parked at NAS Kingsville, Texas, back cover, was photographed by PH3 Sammy R. Pierce last August. Here, VAO-308 KA-3Bs refuel over Fallon during CVWR-30 AcDuTra cruise. VFP-306 OinC, LCdr. Jerry Walker filmed the action.

NAVAL AVIATION NEWS

SIXTIETH YEAR OF PUBLICATION

Vice Admiral Frederick C. Turner
Deputy Chief of Naval Operations (Air Warfare)

Vice Admiral F. S. Petersen
Commander, Naval Air Systems Command

THE STAFF

Captain Ted Wilbur Head, Aviation Periodicals
and History

Cdr. Rosario Rausa Editor

Dorothy L. Bennefeld Managing Editor

Charles C. Cooney Art Director

JOCS Bill Bearden Associate Editors
Helen F. Collins

Sandy Nye Assistant Editor

Cdr. Bob Cole Contributing Editor

Harold Andrews Technical Advisor



editor's corner

Juvenile Viewpoint. VP-47, a P-3C Orion squadron, held a static display for some school children in Misawa, Japan, where the squadron is on deployment. The youngsters wrote some observations:

"I like sitting in the cockpit but wish the stairs were not so steep to get into the airplane."

"Touring the plane was neat seeing all the equipment and all the escape hatches."

"I wish I could be in the airplane when it is moving. There are so many buttons to push."

"I think your patch is neat. I also liked the parachute. We have a parachute at home. We use it for a blocker to block the sun."

In the picture, AW2 Sam Watson helps a visitor try on a parachute.



Here He Comes. In the Pentagon last September the Air Force mail room began a test of an unmanned mail delivery vehicle called — what else? — Mailmobile! It functions automatically, follows an invisible chemical guideline laid out on the floor and is equipped with devices to ensure pedestrian safety. The test was to determine whether routine mail can be collected and delivered more efficiently and economically.

In what might be called an understatement, a circular said, "It is anticipated that the innovative test will arouse the interest and curiosity of Pentagon employees. Consequently, all

concerned are cautioned not to interfere with the operation of the vehicle and to stay clear of the travel path so that an effective evaluation of the system can be accomplished."

We don't know the final test results but Capt. D.W. Gill, USAF, reports that the Mailmobile was not only *not* abused, it has earned considerable respect for doing a superb job.

Oh yes. Someone in the ranks has given Mailmobile a name. Next time you're in the Pentagon and see the Mailmobile, call him Norman. You may just get a reply.

Poet's Corner

Nineteen forty came and found
Don Douglas' masterpiece strong and
sound.

Nineteen forty increased by ten
The Airline Workhorse, they called
her then.

Nineteen sixty again we find
It running "as usual" (to be kind),
Hauling its second and third genera-
tions

In freight and feeder-line operations.

Eighty and ninety will roll on by
And into two thousand the "Three"
will fly!

But by then, I'm sure, we must all
agree,

There'll be few alive who will care like
we

Who first flew airlines in a DC-3!

An *NANews* article on the DC-3/C-117 (May 1977) prompted retired Capt. Parker Gray to send along this extract from an ode to the aircraft written by Robert Robischon.

Short Haul. VR-30 flies C-1As, CT-39s and C-9Bs. Squadron crews have transported everything from live sea turtles to Russian cosmonauts and flown great distances in doing so. A record for brevity, for a change, was achieved last year. Ltjg. Bob Seago and LCdr. Fred Dalzell, pilots, and crew chief ABHC L. Hicks guided C-9B #114

from their NAS Alameda home base to Metropolitan Oakland International Airport, just down the Bay a piece.



The aircraft was to be overhauled there. The crew launched, lined up for a 4.7-mile straight-in to Oakland's runway 11 and was soon back on the ground. Time en route: one minute, forty-five seconds. The flyers' return trip to Alameda was a bit long. LCdr. Dalzell, who had brought along his bicycle, pedaled home in 15 minutes. Seago and Hicks rode the VR-30 duty vehicle and needed 20 minutes.



Animal Corner. This photo was resurrected from the history files. Wonder why the *Black Sheep* squadron's black sheep isn't Baa, Baaing?

Navigation Satellite System

The sixth Navy navigation satellite was launched in October from the Western Test Range in California on a four-stage *Scout* rocket. In addition to navigational equipment, this satellite contains two specially instrumented radio relays to test a *Trident* missile tracking system and calibrate range safety ground stations and equipment. The satellite navigation system is used by Navy ships and submarines to pinpoint their positions to better than a tenth of a mile in any weather, day or night, anywhere in the world.

The Navy Strategic Systems Project Office is the program sponsor for the TranSat satellite. Tracking support is provided by the Navy Astronautics Group.

X-Wing

An X-wing flight demonstration vehicle is being developed under the joint sponsorship of the Navy and the Defense Advanced Research Agency. Lockheed Corporation is designing and fabricating the full-scale rotor system for testing in NASA's Ames Research Center wind tunnel.

It is an advanced concept developed at the David W. Taylor Naval Ship R&D Center, Bethesda, Md., to solve conflicting aerodynamic requirements for a VTOL vehicle with both extended hover and high speed capabilities. It is intended to meet these requirements simultaneously without severely compromising either end of the flight spectrum. Past attempts to design a viable high-performance VTOL aircraft have been unable to achieve a successful compromise. The X-wing composite aircraft (*NANews*, October 1977, page 3) offers an attractive solution to these problems.

The circulation control concept used in this X-wing employs relatively thick hingeless blades with rounded trailing edges. Low pressure air is pumped into each blade and is ejected from a thin slot on the upper surface of the trailing edge. Due to an aerodynamic phenomenon, the Coanda effect, the air adheres to the rounded edge until it reaches the lower surface. This keeps the boundary layer from separating and creates high lift. The single lift system throughout the entire speed range gives advantages in empty-weight-to-full-weight ratio, structural efficiency and aerodynamic improvement. The dual-plenum blowing, four-bladed circulation control rotor should provide the capability for transition to the stopped mode without undue vibratory or other dynamic problems. Differential blowing between fore and aft blades and between the blades on either side allows strong pitch and roll authority. The 45-degree sweep angle of the blades also minimizes wing-fuselage interference drag, and very high overall lift-to-drag ratios are possible.

The X-wing composite aircraft has the potential for efficient cruise speeds approaching Mach 1.0 and is expected to have over twice the range of present day helicopters at significantly higher speeds.

Full-scale wind tunnel tests of the critical rotor and hub/control systems at Ames are scheduled this year.

Test Center Museum

The Naval Air Test and Evaluation Museum at Patuxent River has a three-fold goal: to become a repository for all valuable artifacts of the Naval Aviation test and evaluation program; to be a participatory facility where machines are designed to be touched, their buttons punched and levers pulled so that visitors can learn while doing and experience some of the mysteries of technology; and to serve as an information center of test and evaluation in Naval Aviation. The museum moved into its new home at Patuxent River last June.

New Communications System

Three Naval Research Laboratory scientists — William E. Leavitt, Phillip M. Hooten and J. Plummer Leiphart (retired) — have been recognized for their contributions to a new satellite communications system for the Navy which will soon update the current station-to-ship broadcast system. NRL Commanding Officer Captain Lionel M. Noel says that the new spacecraft communications technology will be resistant to all intentional and unintentional jamming, will permit simple reliable circuitry in satellites, will reduce the expense of required shipboard equipment, and will not depend on the use of communications stations at foreign sites. The NRL research project is supported by the Naval Electronic Systems Command.

AV-8B Wing Skin

Believed to be the largest composite part ever built for an aircraft, the wing skin of the AV-8B, an advanced *Harrier*, was recently completed by McDonnell Douglas Corporation in St. Louis. The 121-square-foot, non-metallic, lower-sur-



face wing skin is 28 feet from wing tip to wing tip and is laminated from graphite/epoxy plies. The graphite/epoxy upper skin and spars still have to be joined to complete the wing. The supercritical wing, scheduled for completion in March, will weigh 20 percent less than one made of conventional metal materials. It will help to double the range or payload of the AV-8A. The B version is scheduled to make its first flight late in 1978. Two prototypes are being built for the Marine Corps in a flight demonstration program.

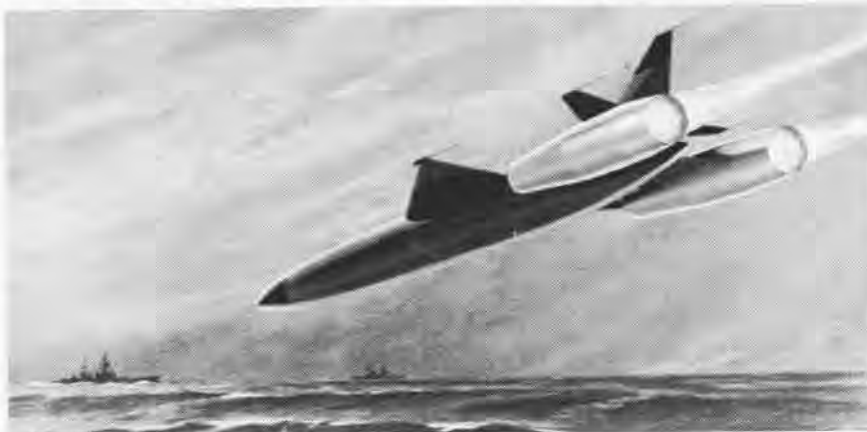
Firebrand

Commander Eugene E. Auerback has been designated project coordinator for the development of the *Firebrand* target vehicle. The XBQM-111A is a high speed aerial target designed to duplicate a number of enemy anti-ship cruise missiles. It will be used to test a variety of weapons systems and will fly supersonic profiles at various altitudes, simulating those of threat missiles anticipated in the 1980s. The target and launch booster, nearly three tons, will be launched from either a ground launcher or large aircraft.

The nose radome holds the anti-ship missile homing radar simulation equipment. The electronics system provides radar and infrared signals, simulated con-

termesures, and a means of scoring the hits of the anti-ship defense weapons. The guidance system includes a micro-processor flight control computer, programmable for automatic control from launch through recovery.

This is an artist's rendition of the Teledyne Ryan target vehicle.



Two Hats for Tomcat

A 17-foot-long pod, which can add a supersonic photo reconnaissance capability to the F-14 *Tomcat*, is being evaluated by the Naval Air Test Center at Patuxent River, Md. It is called the F-14 TARPS (tactical air reconnaissance pod system). *Tomcats* modified to receive it would serve in an interim status until the Navy completes development of a new generation of planes dedicated to photo reconnaissance.

Aging RF-8G *Crusaders* and RA-5C *Vigilantes* now perform tactical photo missions for the Navy. The Marine Corps uses the RF-4B *Phantom* which is currently going through the service life extension program and is not slated to be replaced by the *Tomcat*.

In the first stages of NATC testing (*NANews*, January 1978, page 3), the 1,550-pound pod is being evaluated for the effect it might have on the F-14's flying qualities and performance. Surprisingly, even with its bulky size and weight, the effects appear to be negligible.

Project officer Lt. Mike Clark says that before the pod is checked out as a camera system, it first has to be evaluated just as a pod to make sure it will stay on the *Tomcat* during catapult launches and arrested landings. The required structural stability of the pod seems to have been achieved by hard-mounting it to the aircraft rather than snapping it to a weapons station. To accomplish the required stability, the pod is carried approximately 15 inches off the centerline on the *Tomcat's* belly, in the tunnel created by the two engine nacelles. The pod straddles the missile fittings so that it can be hard-mounted snugly to the aircraft.

The Naval Air Development Center developed the system to fill the gap between the phasing-out of the *Crusaders* and *Vigilantes* and the introduction of a new photo aircraft, now referred to only as the RFX. Lt. Clark points out that installation of the system will not affect the *Tomcat's* ability to perform as a fighter.

The NATC evaluation is part one of a seven-part program. The test center is not only determining how well the pod stands up to the "shake-and-bake" world of the high-performance F-14, but how well the cameras within the pod operate in such a strenuous environment. The center is also examining the system's compatibility with existing ground support equipment.

After a modified *Tomcat* is tested with a fully operational TARPS pod, the aircraft will receive more extensive modification by Grumman, followed by a brief operational flight program at Point Mugu and then a last look by NADC. It will return to Patuxent River for the NTE and BIS trials, scheduled for April.



grampaw pettibone

Watch Your Step

A pilot flying an F4U made a normal approach to a landing, correcting adequately for a 10-knot crosswind, 60 degrees to the runway. During the landing rollout the fighter swerved to the left, starting a ground loop. As the pilot corrected with right brake, his foot slipped into the opening at the top of the pedal and the plane headed for a coral shoulder.

After tremendous effort our pilot managed to extricate his foot and to straighten the fighter out on a taxiway paralleling the runway. All was well until he ran smack into a coral mound left on the taxiway by construction workers.

Off came the landing gear and the F4U screeched to a stop 120 feet beyond the pile. The cause of this accident was not crosswind, as it was not of sufficient force, but rather a little bit of oil or grease which the pilot had picked up on his shoe before entering the cockpit.



Grampaw Pettibone says:

Gosh, fella, you almost made it except for that coral mound. Actually, though, that little bit of grease or oil on your shoe was the root of all your trouble. I once knew a fella who didn't pay much attention to a little bit of oil on his shoe and he slipped off a fighter wing. The next week he had to eat his meals standing up. These little things do count, so beware of that oil puddle and that grease spot. There are plenty around planes. (March 1948)

Grapefruit Squeeze

The T-28 departed home field on a local training flight. The instructor was in the rear cockpit and the student



pilot in front. During the first 55 minutes of the flight things went normally with the instructor demonstrating a spin maneuver and the student performing an approach turn stall and a simulated high altitude engine failure.

At approximately 2,000 feet msl, 170 kias and 4 nms from an outlying training runway site (field elevation 54 feet), the instructor initiated the first

of two simulated low altitude engine failures. The throttle was closed and simultaneously mixture was placed in rich and the propeller to the full-increase position. The student performed his tasks throughout the procedure satisfactorily and, when it was apparent he could have landed in a farmer's field successfully, the instructor took control and waved off.

During climbout the instructor discussed the student's choice of landing in a farmer's field vice a the paved runway at the outlying field 4 nms away. The student stated he did not believe they could have made the paved runway.

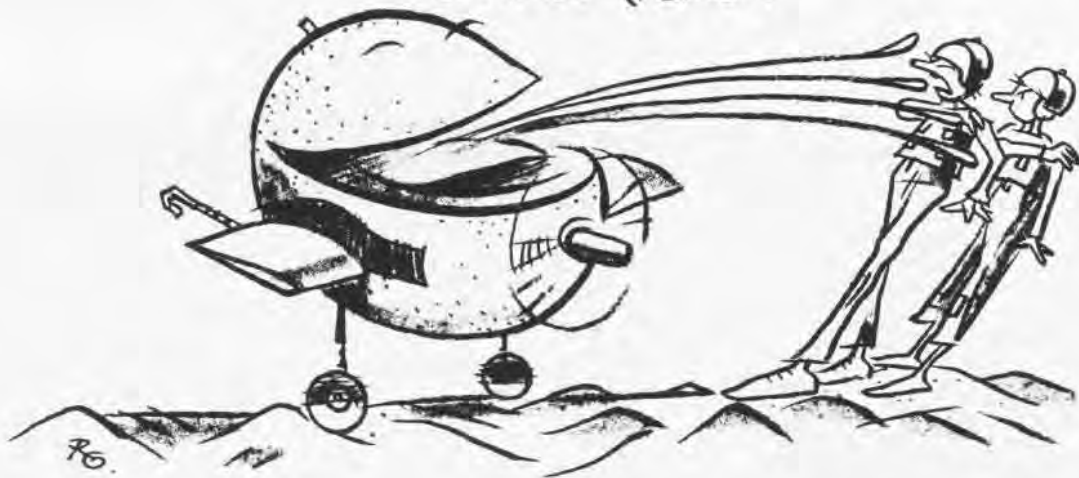
With that the instructor returned to the exact location over the ground where the first simulated engine failure was initiated. He discussed the effect of setting the prop lever to the full decrease rpm position (high pitch) and how this would increase glide distance. He gave aircraft control back to the student, ensuring the student knew where the outlying runway was located and initiated a second simulated low altitude engine failure.

The throttle was closed and prop and mixture controls placed full forward. After the student reported the aircraft clean, the instructor took electrical control. The student completed his procedures while heading the aircraft toward the paved runway.

The student asked for full decrease and the instructor placed the prop lever in the full decrease rpm position. The aircraft responded with a corresponding surge and a noticeable feeling of decreased drag. When the runway was made, the instructor told the student he should lower the landing gear so as to not overshoot the runway.

The instructor placed the prop co

Take that!



trol to full increase as the student lowered the gear. The instructor took control of the aircraft, smoothly added power with no corresponding increase of engine response. The prop control was recycled to near full decrease and back to the full-increase rpm position with no response.

Engine instruments were indicating normal with the aircraft at 500 feet over the runway threshold. (Runway length was 3,000 feet.) The instructor raised the gear and at this point realized the aircraft could no longer maintain altitude. The aircraft was crash landed in a farmer's field and both pilots escaped without injury.



Grampaw Pettibone says:

Great horned toads! Pushin' one of our oldest machines to the close hairs and asking for absolute flawless response every time is pushin' the margin as well. Save decreased rpm for the real emergencies. Procedures such as this may go uncriticized for years - until something happens. Squeezin' the margin for error is like squeezin' the grapefruit. If you squeeze too hard, you get it . . . right in the eye.

Unlicensed Driver Strikes Again

NAS WestPac was in Tropical Storm Condition One. An A-7 was secured, parked, and chocked on the flight line. An A-6 was parked in the next line aft of the A-7. The driver of a tow tractor began to remove the tow tractor and attached starting unit

from the A-6 flight line. To ensure that the starting unit would clear an adjacent A-6, the driver made a large radius left turn to pass in front of the A-6.

During the entire maneuver, the driver was looking over his left shoulder to monitor the clearance between the starting unit and the A-6. He did not look forward and to his right, and was unaware of the A-7's proximity. The driver was knocked off the tractor as it impacted the tail cone of the A-7. The tractor stopped when the exhaust duct of the starting unit

struck the starboard horizontal stabilizer of the A-7.



Grampaw Pettibone says:

Help! I've been booby trapped. Guess who did not have a license to operate this equipment? Where was the line supervisor? The unqualified, unlicensed operator story is getting older than Gramps. Know what licensed talent mix is sent on detachments. Maintenance officers watch out - these guys will cost you an up aircraft - think about it. Do you have enough yellow gear talent? Forklifts to LOX carts, you'll need someone qualified to operate them eventually. Train today - smile tomorrow!





Naval Aviation

By G. W. Pryce
Assistant Naval Aviation Historian

January

- 21 Robert Osborn, creator of Grampaw Pettibone, was designated an Honorary Naval Aviator. Mr. Osborn has illustrated the Gramps feature for *NANews* since 1943. Dilbert, the pilot, and Spoiler, the mechanic, are also Osborn creations which first appeared on



training posters during WW II.

- 22- In an unusual mission, HS-75 flew mercy flights along
23 the New Jersey shore in an effort to save the lives of thousands of ducks and geese suffering from the extreme cold. Squadron SH-3s made five flights and dropped seven tons of feed to the starving birds.
- 31 The TA-7C, a two-seat *Corsair II* converted from an earlier model and designated a combat crew and instrument trainer, was delivered to the Navy. During 1977-80 these aircraft will be sent to naval air stations at Cecil Field, Fla., and Lemoore, Calif. Replacement pilots for the 30 light attack squadrons flying A-7s will train in the TA-7Cs.

February

- 10- A major achievement in remotely piloted vehicle
11 (RPV) recovery technology was demonstrated in Venice, Fla., by Paraflite, Inc. of New Jersey. The company successfully launched and landed a 140-pound RPV using a pre-deployed steerable fabric



wing. The research project, sponsored by the Naval Air Technical Development Center, Warminster, Pa., investigated control accuracy and response for a

Review 1977

rudderless delta wing RPV. The vehicle, which has a 12-foot wingspan, was repeatedly maneuvered through data collection patterns to determine control accuracy and feasibility of shipboard recovery.



March

- 1 Secretary of the Navy W. Graham Claytor, Jr., announced that Navy's new F-18 fighter will be called the *Hornet*. The plane is scheduled for fleet delivery in the early 1980s. It will replace the F-4 *Phantom*. The name has often been used for Navy ships of the line. It was selected as the common name for the

- 30 Lieutenant Colonel Herbert Fix, USMC, became the first Marine to receive the Harmon Trophy. LCol. Fix was cited for his service as C.O. of HMH-463 during 1975 Operations *Frequent Wind*, the evacuation of Vietnam, and *Eagle Pull*, the evacuation of Phnom Penh. His citation stated, "Although the operations took place under combat conditions involving anti-aircraft, machine gun and small arms fire and in part at night with few navigational aids," there were no casualties among the aircrews aboard the 14 rotary wing aircraft of HMH-463. More than 5,000 American and Vietnamese civilians, foreign nationals and Marines were airlifted to safety by the squadron. LCol. Fix was personally responsible for saving two survivors of a search and rescue mission being conducted by another unit which had crashed at sea.



F-18 because the hornet strikes rapidly and produces a sharp sting. Initial flight hardware for the F-18 went into production on January 26.

- 24 Initial service acceptance trials for the CH-53E, the Free World's largest and most powerful helicopter, were completed at NATC. The growth version of the CH-53D has three turbine engines instead of two. The *Super Stallion* carries mission loads of 16 tons compared to nine tons for the D. It has seven rotor blades instead of six and can accommodate 56 troops.

April

- 5 The Navy took delivery of the new T-44A trainer at Corpus Christi. The Beech aircraft signals a significant modernization trend in the Navy's flight program and will eventually replace the TS-2A *Tracker*, flown by training squadrons since the early 1960s.
- 13 The *Tomahawk* cruise missile successfully flew 307 miles to locate a ship in its third over-the-horizon test off the California coast. The missile was dropped from an aircraft more than 100 miles from the target ship and then flew a search pattern until its guidance system locked onto the target. It flew over the target and landed by parachute in the water. In February, the *Tomahawk*, equipped for the first time with a dual mode guidance system, demonstrated precision accuracy against a simulated ground target.



May

- 14 The day before his 85th birthday, Admiral Charles E. Rosendahl died at the Philadelphia Naval Hospital. Adm. Rosendahl was known for his expertise in lighter-than-air airship operations. In 1925 he was one of the survivors of the *Shenandoah* tragedy. When the dirigible broke up in bad weather, the Admiral safely landed the remaining forward section. When the German *Graf Zeppelin* made its round-the-world flight in August 1929, Adm. Rosendahl was aboard as an official U.S. Navy observer. He commanded *Akron*



when it was commissioned in 1931 and was commanding officer at NAS Lakehurst when *Hindenburg* was destroyed by a hydrogen gas explosion in 1937.

- 27 Rear Admiral George L. Cassell became the Gray Eagle, the Naval Aviator on active duty with the earliest date of designation. The trophy was transferred to him by retiring Rear Admiral Martin D. Carmody who had held the honor since August 1976.

June

- 11 The amphibious assault ship *Belleau Wood* (LHA-3) was christened at Litton Industries' Ingalls Shipbuilding Division at Pascagoula, Miss., by Mrs. James L. Holloway III, wife of the Chief of Naval Operations. The ship displaces nearly 40,000 tons loaded and is 820 feet long. She combines the capabilities of a helicopter carrier, dock landing ship, amphibious

cargo ship and amphibious transport dock. She is built to carry a crew of 750 and a battalion landing force of up to 2,000 Marines, vehicles, weapons and supplies to support a sustained operation ashore. *Belleau Wood* is the third of five LHAs being built.

July

- 13 An F-4J *Phantom* landed for the first time using the microwave landing system (MLS) at the FAA Test Facility at Atlantic City, N.J. Lt. Jim Ellis, a pilot from the Naval Air Test Center, was at the controls. The system electronically reaches out and "catches" the airplane, literally flying it down to a safe landing without the pilot having to touch the controls. NATC's part in the effort has been to assure that any system selected will be compatible with the unique requirements of Navy high-performance aircraft.

- 20 The Senate rejected by a vote of 75 to 21 a proposal to consolidate the Army and Navy schools for training helicopter pilots. The recommendation had called for moving the Navy's basic helicopter training at Pensacola to the Army Training School at Fort Rucker, outside of Dothan, Ga.

- 21 NADC announced the results of some of its studies of onboard fire prevention. Research led to a spray-on thermal protective coating for munitions and discovery of a number of promising new materials. Research into this area has been going on for 10 years, since the fires onboard USS *Forrestal* and, later, USS *Enterprise*.

- 23 Rear Admiral Alan B. Shepard, Jr., was inducted into the Aviation Hall of Fame. He was cited for outstanding contributions to aviation as a Naval Aviator, instructor and test pilot, and his contributions to space technology. Shepard was the first American launched into space and the fifth to walk on the moon. Inducted with him were Walter Beech, Lawrence D. Bell, William Penn Adair (Will) Rogers and James S. McDonnell.

August

- 11 For the first time, Marine Corps helicopter pilots flew the CH-46E *Sea Knight* with newly developed fiberglass rotor blades installed. The helicopter is the first of 400 to be retrofitted with the new rotor blade

which are less susceptible to corrosion and fatigue damage.

- 12 The space shuttle orbiter, *Enterprise*, made its maiden flight test, launching from the back of a specially-equipped Boeing 747 at the Dryden Flight Research



Center. The craft, flown by Fred Haise and Gordon Fullerton, landed under its own power five minutes later on the Mojave Desert. Commander Richard H. Truly was the designated copilot during orbiter's second flight on September 13. The third, fourth and fifth test flights occurred on September 23, October 12 and October 26, respectively. The shuttle is scheduled for use in the early 1980s.

- 26 The XFV-12A, vertical/short takeoff and landing research aircraft, was unveiled at the Rockwell



International facility in Columbus, Ohio. The aircraft has completed 90 percent of its ground test program. Tethered test flights were scheduled for later in the

year. The aircraft may provide flight data that could lead to an operational V/STOL thrust-augmented wing, high-performance fighter operating from small ships.

- 29 The first production model of the P-3C Update II *Orion* arrived at NATC for technical evaluation. It incorporates the latest in avionics and weapons systems, including a turret-mounted infrared detection device which drops out of the nose to identify targets day or night. The aircraft also has the *Harpoon* air-to-surface missile system.
- 30 CWO-4 Henry Wildfang, the Marine Corps' Silver Hawk (senior Marine Corps Aviator, since 1975), became the Navy's new Gray Eagle. Retiring RAdm. George L. Cassell transferred the trophy to him in ceremonies at MCAS Cherry Point. The 30-year veteran aviator has flown over 23,000 accident-free



hours and is still actively flying with Marine Aerial Refueler/Transport Squadron 252. CWO-4 Wildfang became the second Marine to earn the trophy.

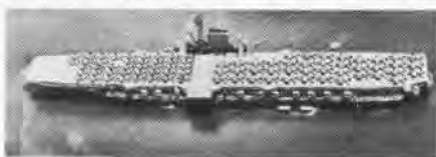
September

- 1 The Navy chose contractors for its LAMPS (light airborne multi-purpose system) MK III helicopter. Sikorsky Aircraft Division will build the helicopter and General Electric's aircraft engine group will provide the engines. The overall program is expected to cost up to \$3.5 billion over several years with a cost of about \$14.5 million per aircraft. The LAMPS helicopter will carry a crew of three, fly 170 miles an hour and operate at altitudes up to 10,000 feet.



October

- 1 USS *Franklin D. Roosevelt* (CV-42) was decommissioned after 32 years' service. Commissioned in 1945, the carrier has had many firsts, including the first U.S. jet aircraft landings and takeoffs on a carrier in



1946. She also made 20 deployments to the Mediterranean, more than any other carrier.

- 15 USS *Saipan* (LHA-2), the second of five amphibious assault ships, was commissioned. Senator John C. Stennis (Miss.), Chairman of the Senate Armed Services Committee, was the principal speaker at the ceremony. Like her sister ships, *Saipan* is 820 feet long and weighs 40,000 tons fully loaded. She will be home-ported in Norfolk, Va.
- 18 USS *Dwight D. Eisenhower* (CVN-69), the Navy's second *Nimitz*-class carrier, was commissioned at Norfolk, Va. The third nuclear carrier to join the fleet, she is 1,092 feet long and has a combat load displacement of 92,000 tons. She can accommodate more than 6,000 ships's company and air wing personnel and is capable of speeds in excess of 30 knots. Secretary of Defense Harold Brown was the featured speaker at the ceremony and the ship's sponsor, Mrs. Eisenhower, was the guest of honor.

November

- 10 A flight of six S-3A *Vikings* from VS-21 completed a transPacific flight without the aid of a lead navigational airplane or inflight refueling. The six aircraft left Atsugi, Japan, on November 7. After stops at Wake Island and Barbers Point, they completed the final leg of the 6,000-mile trip at North Island.
- 14 Rear Admiral B. H. Shepherd, CNATra, formally accepted the T-34C, manufactured by Beech Aircraft Corporation. A turboprop, two-place trainer, the T-34C will replace the T-34B and the T-28.



Each year Naval Aviation experiences changes in its operation. Below is a list of those activities which were piped over the side and those which were welcomed aboard in the fleet aviation community in 1977.

Disestablished

Air Antisubmarine Squadron 35	March 30
Fleet Logistics Support Squadron 21	March 30
Fleet Aviation Accounting Office, Atlantic	April 1
Carrier Airborne Early Warning Squadron 111	June
Carrier Air Wing 19	June 30
Fleet Aviation Accounting Office, Pacific	July 1
Fleet Air Photographic Laboratory,	
ASW Wing, Pacific	July 1
Reconnaissance Attack Squadron 5	September 30
Reconnaissance Attack Squadron 9	September 30
Attack Squadron 215	September 30
Attack Squadron 155	September 30
Attack Squadron 153	September 30
Helicopter Combat Support Squadron 2	September 30
Attack Squadron 125	October 1
USS <i>Franklin D. Roosevelt</i> (CV-42)	October 1

Commissioned

Helicopter Attack Squadron Light 5	March 1
Attack Squadron 122, Detachment Fallon	March 3
Fleet Area Control and Surveillance Facility,	
Jacksonville	April 1
Helicopter Antisubmarine Squadron 12	July 15
Fighter Squadron 171	August 5
Fleet Area Control and Surveillance Facility,	
Virginia Capes	October 1
Helicopter Combat Support Squadron 11	October 1
Tactical Electronic Warfare Squadron 209	October 1
USS <i>Saipan</i> (LHA-2)	October 15
USS <i>Dwight D. Eisenhower</i> (CVN-69)	October 18
Fleet Logistics Support Squadron 57	November 1
Fleet Logistics Support Squadron 58	November



Willy Fudd

Story by JO2 Alan Presley

Photos by JOC Russ Egnor

It sat alone that sunny autumn day on the acres of concrete outside Hangar LP-12 at NAS Norfolk. Not because of its unique look — squat stubby body, pug nose and pancake-shaped dome — but because it was the last one. They called its breed *Willy Fudd* and it gave 18 years of service. Progress forced *Willy* to retire. The last *Willy Fudd* belonged to Carrier Airborne Early Warning Squadron 78, a component of Carrier Air Wing Reserve 20.

Willy was gleaming on this November 19, 1977. The squadron had polished its gray back and white belly to a high luster. The sun sparkled off the fuselage. Even the squadron tail insignia looked as if it had been freshly painted.

A call to attention was sounded. The men snapped to, in unison. The silence was broken by a boatswain's pipe. Three men in flight suits with white helmets tucked under their arms marched toward the plane. The sideboys, including the flag representative for the Chief of Naval Reserve, Rear Admiral J. Russell Rohleder, raised their hands in salute. The crew vanished into the rectangular door on *Willy's* port side.

A minute or so later a small puff of smoke belched out of *Willy's* port engine exhaust as the prop sputtered to life. The prop became almost invisible. The starboard engine raced to catch its twin and shortly an aircrewman was directing *Willy* to the runway.

As *Willy* let out a defiant roar, the runway disappeared under its stubby legs. It was up. It circled and

made a low pass. The squadron remained at attention. Hands snapped salutes, on-lookers waved and *Willy* dipped its wings back and forth in a traditional aerial salute.

As *Willy's* sound faded another was heard. A high-pitched, combination jet-propeller sound. Everyone turned to look. The approaching plane resembled *Willy*. It had a dome on top but it was smaller, flatter. Overall, the plane was more slender. The plane settled gently on the runway. A plane captain directed it to the spot where *Willy* had been.

The aircraft was the E-2B *Hawkeye*, a plane that can "see" a potential enemy far better than *Willy* ever could. The *Hawkeye* can talk with computer language to other planes and ships. It can control interceptor aircraft by radar, relay messages from ship-to-ship and aircraft-to-aircraft. It can coordinate joint attacks for combat centers. Its primary mission is to provide early



warning for fleet units.

As for *Willy*, being the last of a breed has its honors. This *Willy* will be around for a long time, not flying as the eyes of the fleet, perhaps, but occupying a place of honor at the Bradley Air Museum in Windsor Locks, Conn. (see page 30).

The *Hawkeye* will have to fly over a lot of ocean to match the accomplishments of old *Willy Fudd*.





PEOPLE PLANES AND PLACES

Although the ship's propeller-driven C-1 Trader "Mamie" had made several deck-run launches and arrested landings, aircraft from NATC Patuxent River were the first high-performance jets to catapult and arrest on *Eisenhower*. Collecting honors were: LCdr. Dave Newton, pilot, and Lt. Dave Anderson, NFO, for the first catapult launch. They were shot from #1 cat in an A-6E *Intruder*. LCdr. Fred Lentz piloted an A-7A *Corsair II* in for a touch and go as the first ACLS touchdown. LCdr. L.J. Aunchman and Lt. Mike Cahill, in an S-3A *Viking*, were the first to trap on #1 wire. They were also the first jet launch from #2 cat. Lt. Kevin Dwyer, pilot, and LCdr. Denny Lauer, NFO, took the first #3 wire in an F-14 *Tomcat*. They were also the first jet to launch from both #3 and #4 cats. Lt. Jim Ellis was first on #4 wire, piloting an F-4 *Phantom*. Lt. Jim Kiffer, in an A-7, was the first to trap aboard in ACLS Mode One. Cdr. Gary Wheatley, Commander, Air Group One, was credited with the first trap on #2 wire. He flew an A-7 *Corsair* from VA-46.

Two naval air maintenance training detachments have been established aboard NAS Memphis. NAMTraDets provide training for naval officers and enlisted men in aircraft maintenance, systems and associated equipment, ground support equipment and aircraft maintenance administration.

H&MS-16's intermediate maintenance activity, MCAS(H) Santa Ana, is the winner of the ComNavAirPac Aircraft Intermediate Maintenance Department Ashore Achievement Award for the period January 1, 1976, through June 30, 1977. The IMA was judged best in the Pacific area based on statistical analysis of the maintenance data collection system and recommendations made by ComNavAirPac and FMFPac.

The *Black Knights* of VF-154 took time off from their busy ACM schedule to celebrate the Navy's 202nd birthday. What's so unusual about this event? Only that it took place on Luke Air Force Base's flight line during a week of intensive dissimilar air com-



bat training with the F-15 crews of the 461st Tactical Fighter Training Squadron. When not flying F-4J *Phantoms* off *Ranger*, VF-154, commanded by LCdr. R.A. Wilson, is stationed in Fighter Town, NAS Miramar. The *Black Knights* are part of Cdr. Fred Baldwin's CVW-2

Ground-breaking ceremonies for construction of a new air traffic control tower were held at NAS Glenview. The structure will stand five stories high and is scheduled for completion in November 1978. NAS Dallas presently has a similar tower, so several civilian employees of the air station have been sent to Dallas to receive some



training on it. Pictured left to right are: Mr. Jon Stromberg, president of the construction company; Capt. Maurice D. Fitzgerald, C.O. of NAS Glenview; and LCdr. Leon Aksionczyk, NAS public works officer.

Bruce Peterson, NASA safety and quality assurance employee, was guest speaker recently in a safety stand-down presentation at NAS Whiting Field. While working for NASA as a research pilot and aeronautic

engineer in 1967, Peterson was involved in a spectacular crash which was the inspiration for the television series, *Six Million Dollar Man*. The accident involved the experimental M2F2 lifting body, a wingless creation that was being tested as a re-entry vehicle from space. He told his audience that a contributing factor in the crash was a helicopter, which should not have been there, flying near his intended point of touchdown. Peterson, a former Marine pilot, was under treatment for over a year, in and out of several hospitals, as plastic surgeons performed numerous operations to rebuild him. Admittedly, he was put back together in a slightly more realistic fashion than that devised by Hollywood script writers for actor Lee Majors of the TV program.

VRF-31, NAS Norfolk, celebrated its 34th anniversary on December 1 and reached a milestone of 80,000 accident-free flight hours. The squadron is tasked with ferrying Navy and Marine Corps aircraft the world over. C.O. is Cdr. C.F. Williams.

LCdr. Richard J. Uhrig of VS-32, NAS Cecil Field, was awarded an Air Medal for his professional airmanship during an S-3 emergency while flying from *JFK* in the Med. Uhrig and his crew were on an ASW mission when the copilot's canopy blew out at 24,000 feet, causing the aircraft to experience explosive decompression. Cdr. Pedisch, squadron X.O., received a broken arm and was unable to perform his copilot duties. Though communications were lost, Uhrig executed night emergency carrier recovery procedures under instrument conditions and made a perfect landing. VS-32 C.O., Cdr. R. H. Bruce, Jr., pinned the medal on LCdr. Uhrig for a job well done.

The skies over NAS Whiting Field will see a different type of Navy training aircraft in the future — a T-34C — when the plane is officially incorporated into the training syllabus. Manufactured by Beech Aircraft Corporation, Wichita, Kans., the aircraft was formally accepted by RAdm. B. H. Shepherd, CNATra, during a recent ceremony.

The T-34C is a replacement for the T-34B *Mentor* and T-28 *Trojan*, both piston-driven airplanes. It is a turbo-prop, two-place train-

er with dual flight controls, tricycle landing gear and duplicate cockpit instrumentation for both instructor pilot and student. The aircraft is 29 feet long with a wing span of 33½ feet.

In what is claimed to be a WestPac first, three NFOs, then currently in command of deployed patrol squadrons, were tempo-



rarily together at the same base — Misawa, Japan. From left, Cdr. Gary Wells, VP-47; Cdr. Delbert Ritchart, VP-9; and Cdr. Thomas Leshko, VP-40.

Lt. Don Erickson, OinC of HSL-32 Det 8, explains LAMPS to President Siaka Stevens of the Republic of Sierra Leone while U.S. Ambassador Jack Linehan looks on. An SH-2F *Seasprite* flight demonstration was one of the highlights of the three-hour cruise which the President took onboard *Julius A. Furer* (FFG-6). Det 8 was assigned to *Furer* in May 1976 and took part in the Inter-



national Naval Review in New York City and Queen Elizabeth II's Silver Jubilee in the United Kingdom last summer.



The *Hukkers* of VS-28, home-based at NAS Cecil Field, had the honor of flying VCNO Adm. Robert L. J. Long aboard *America* from NAF Sigonella in an S-3A. The visit was part of the admiral's tour of the Sixth Fleet. Cdr. Jerry E. Goodman, X.O., was at the controls of the *Viking*.

Lt. Richard "Ace" Taylor of VA-176 recently completed his 500th A-6 carrier landing aboard *America*. This record spanned four cruises in three Oceana-based squadrons (VAs 35, 42 and 176) and involved all



five models of the *Intruder* — A-6A, A-6B, A-6C, KA-6D and A-6E. Lt. Taylor is currently deployed in the Med.

As its engines were revved up for the last flight into retirement, Navy and Marine Corps personnel at MCAS Yuma said goodbye to what is believed to be the oldest C-117D active in the U.S. armed forces.

No. 820 was manufactured and sold to Western Airlines in 1937 as a DC-3. In 1941, it was drafted into the Army Air Corps. After WW II ended, it became a civilian once more as a flagship, flying VIPs to various places. Four years later, it was reenlisted into the Army as a test aircraft in the Korean War. Then in 1950, Douglas Aircraft modified it into the present C-117, transferring it to the Navy. It joined the Marine Corps in the late 1960s and has been permanently stationed at MCAS Yuma for the past two years. Capt. H. C. Geren, operations maintenance officer, said, "The C-117 has always been steady, dependable, trustworthy and extremely safe. It is one bird with a lot of class."

Three Santa Maria, Calif., men are thankful for the Naval Air Reserve and especially HS-84, based at NAS North Island.

While returning from a training mission, the helicopter crew spotted the three men (whose small craft had tipped over in the high surf off San Luis Obispo) and went down for a closer look. The pilot of the SH-3, LCdr. Don Sanborn, and his crew, LCdr. Dan Walker and AW2 Nels Swenson, saw two of the men bobbing in the rough water about 200 yards offshore. They lowered a sling to recover the two men and then landed on the beach to pick up the third. All were near a state of shock but were reported in good condition after the helicopter took them to a local hospital. C.O. of HS-84 is Cdr. Ed Chrisman.

Several squadrons reached accident-free milestones: RVAH-7 *Peacemakers*, 10,000 hours in RA-5C *Vigilantes* — C.O., Cdr. Dave Sharp; VA-35 *Black Panthers*, 30,000 hours in A-6E *Intruders* — C.O., Cdr. G.D. O'Brien; RVAH-3 *Dragons*, three years in RA-5C *Vigilantes* — C.O., Cdr. Thomas W. Brown; and VAW-123 *Cyclops*, nine years in E-2C *Hawkeyes* — C.O., Cdr. Robert A. Allen.



Changes of command:

HMT-205: LCol. Laurence Delmore III relieved LCol. E. P. Noll.

HT-18: Cdr. David D. Cameron, Jr., relieved Cdr. James E. Thompson, Jr.

MARTD Willow Grove: Col. Bertram A. Maas relieved Col. Marvin T. Garrison.

VA-75: Cdr. Kenneth R. Werhan relieved Cdr. David L. Osburn.

VA-82: Cdr. Donald B. Hunt relieved Cdr. Thomas A. Mercer.

VA-97: Cdr. Rex Arnett relieved Cdr. John R. Murray.

VP-23: Cdr. Don W. Medara relieved Cdr. Peter R. Catalano.

VP-46: Cdr. William E. Frederick relieved Cdr. Henry D. Svoboda.

VRC-40: Cdr. James F. Duffy relieved Cdr. Grady W. Davis.

VT-24: Cdr. Hugh T. William relieved Cdr. William H. Smink.

VTC-22: Cdr. Jack A. Hicks, Jr., relieved Cdr. William M. Stanley.

Water



Bombers

By T. R. Hegele

Navy aircraft lead a varied life. Attack planes like the A-4 and A-7, fighters such as the F-4, F-8 and the F-14, RA-5s, patrol planes and helicopters of all types deploy all over the world.

But when they have outlived their usefulness or become so old they can't fly any longer, they are sold, scrapped, sent to storage or cannibalized for parts. A case in point is Beechcraft T-34 number 144083.

Built at the Beech plant in Wichita, Kans., in 1957, #144083 was accepted by the Navy and assigned to NAAS Saufley Field as part of the Naval Air Basic Training Command. During the next 12 years, the *Mentor* was used to train hundreds of Naval Aviators in VT-1 at Saufley Field and VT-30 at Corpus Christi.

In November 1969, 144083 was transferred to NARTU Jacksonville, Fla. Its stay there was short, only about a year. It was then shipped off to storage at Davis-Monthan AFB near Tucson, Ariz. The first part of its life complete, the T-34 rested in the hot desert sun for over two years.

Then, in February 1972, a crew began preparing the plane for a flight back East.

Under an agreement between the federal government and the various state governments, surplus military aircraft are often loaned to state conservation agencies for their use. Number 144083 was one of those selected for



this new life . . . flying with the North Carolina Forest Service.

The North Carolina Forest Service maintains a fleet of 22 aircraft which it uses to watch for and fight forest fires. Most of the planes are military surplus, ranging from the L-19 Cessna *Bird Dog* to the Douglas DC-3. Although many aircraft are based at scattered locations across the state — from Peachtree in the extreme western mountains to Fairfield in the swamps of the coastal plains near the Outer Banks — the majority are stationed at Kinston, the Service's regional headquarters and maintenance center.

Number 144083 was flown to Kinston where its transformation to a fire fighter began. The old red and white paint and Navy markings were removed. Mechanics pulled the engine, stripped the skin off down to the frame, inspected everything, replaced worn out and questionable parts, and then rebuilt 144083. New radios were added and navigational equipment installed. Painted yellow and green, with the Forest Service insignia on its tail, the T-34 became NCFS Plane 21.

The North Carolina Forest Service has been using aircraft since the mid-1950s when they purchased their first Piper *Super Cub* to look for wildfires and outbreaks of insects and diseases in forests in the eastern part of the state.

In the early 1960s, the Service acquired several old Navy trainers, N3Ns, which were converted so they could carry and drop a fire retardant chemical. The flotation gear was removed, wheeled landing gear installed, and a 200-gallon tank placed in the forward cockpit. These small "bombers" were used to provide close

air support for fire fighters on the ground.

To ensure that the bombers drop their retardant on just the right spot, a "lead plane" marks the location. The lead plane first makes a shallow diving pass over the drop zone, pulling up and turning left at the point where the retardant is to be dropped. It then circles back and picks up the bomber which follows it to the drop point. Again, with the lead plane in a shallow dive, the pilot pulls up sharply, marking the drop site for the bomber.

Today, the N3Ns and *Super Cubs* have been replaced by S2Cs and T-34s. The S2C is a converted crop duster which can carry and drop (not spray) from 250 to 300 gallons of retardant. It can operate from unimproved grass strips, has a range of approximately 100 miles and a maximum speed of 120 miles per hour.

The T-34's speed and maneuverability make it a good lead plane. Fire control aviation is dangerous and demanding. Although patrol flying is normally done at 500 to 1,200 feet, a fire is scouted between 300 and 500 feet. Making a fire retardant drop requires the lead plane and bomber to fly close to the ground because the best results are achieved if the drop is made between 20 and 50 feet above the treetops. In eastern North Carolina, this means at an altitude of between 80 and 150 feet. It is not uncommon for a lead plane to spend the entire day working a large fire and rarely get above 300 feet.

The end results are a reduction in the number of acres of forests destroyed by wildfires and a second useful life for planes like Beechcraft T-34 number 144083.

MAFLEX 78

Story and Photos by SSgt. C.W. Rowe



Top, 1st Lt. Frank Durtche, VMA-214, climbs into the cockpit of his A-4 Skyhawk. Above, Cpl. D. E. Harrell, H&GMS-17, tightens up a joint in one of the field showers installed by MWSG-17. Opposite page, left, MAG-36 Sea Knight prepares to ferry supplies to troops in the field; right, LCpl. John Archer, H&GMS-17, mans the switchboard of the 1st MAW field telephone system.

In a massive display of men and machines, the 1st Marine Aircraft Wing went to the Republic of the Philippines last October for an amphibious force landing exercise, *Maflex 78*, the largest post-Vietnam training operation in the Pacific. The wing was under the leadership of Major General Noah C. New.

Jet aircraft from Marine Aircraft Group 12 flew fighter protection and close air support. Helicopters from MAG-36 provided ferry service. Marine Wing Control Group 18 handled communications and staffed the tactical air control center, running the airfield and deploying a radar/intercept team.

It took months to plan the complex operation which involved approximately 100 aircraft and 2,000 men. The exercise was almost a total commitment of wing assets from Okinawa and Iwakuni.

For MAG-12 the event marked an extension of the unit's training already under way in the Philippines. The first MAG unit, VMA(AW)-121, arrived at NAS Cubi Point in early September. Two other squadrons, VMA-214 and VMFA-251, followed later the same month. The last aboard was H&MS-12.

These jet units used all available time to sharpen their combat skills. They dropped live and inert bombs and fired rockets on Cubi ranges, engaged in aerial combat with each other and Navy aircraft, and tested their electronic countermeasures against an Air Force system which simulated ground defenses.

No live ordnance was to be used on the island of Mindoro, the site of the exercise, because it is inhabited. Instead, the A-6s of VMA(AW)-121 made simulated close air support strikes on targets theoretically marked by the TA-4F *Skyhawks* of H&MS-12.

Fighter cover and protection of the fleet were in the hands of the F-4 *Phantoms* and A-4 *Skyhawks* of VMFA-

251 and VMA-214, respectively. They were challenged by Navy A-7 *Corsair II* and F-14 *Tomcat* "aggressors" from Cubi Point.

The *Harriers* of VMA-542, based at Cubi Point, were able to use the small airstrip at the wing's Blue Beach encampment on Mindoro. They were the quick reaction force for air strikes against the aggressors, carrying out simulated bombing runs on the aggressor units.

Less dramatic, but of equal importance, were the helicopters of MAG-36. Beginning with a six bird detachment operating from Cubi Point to support the advance party on Mindoro, the choppers filled the sky over the island when the exercise officially began October 16. The missions of the MAG were as diverse as its aircraft. CH-53 *Sea Stallions* and CH-46 *Sea Knights* hauled thousands of passengers and tons of cargo. UH-1N *Hueys* carted around VIPs and small groups of tactical personnel, made observation flights and sometimes played the role of aggressor against the *Leathernecks* on the ground. AH-1J *Sea Cobras* accomplished their designated mission — attacking the enemy on the ground.

The choppers made regular runs between Cubi Point and Mindoro, carrying passengers and cargo. They positioned food, fuel and supplies in the hills for the men of 3d Battalion, 9th Marines who formed the aggressor force. They evacuated the sick and injured and supported civic action projects. In their primary combat role they helo-lifted the 3rd Battalion, 9th Marines from the assembled fleet into the Mindoro hills for the pursuit and destruction of the aggressor force.

The choppers were supported by MWSG-17 which had a detachment at Mindoro and another at Cubi Point to assist MAG-12.

The 184 Marines and Navy corpsmen of MWSG-17, Det C, led by M



ter directed and scheduled hundreds of sorties by fixed wing and rotor aircraft.

One of the most impressive pieces of work was that of Marine Air Control Squadron Four. In a precision operation that involved more than 100 helo lifts, MAG-36 transported the squadron's men and machines 20 miles from the beach. Established, MACS began to practice its specialty. Radar operators scanned their scopes for aggressor jets and then directed Marine jets into aerial combat with them.

The air traffic control unit controlled the combat support activities from the airstrip, manning the control tower, approach and ground control radars.

Equally valuable was the effort of the security forces. These military policemen and other Marines of the 1st MAW worked long hours patrolling the perimeter against the threat of aggressor attack and infiltration.

VMO-6 OV-10 *Broncos* also operated from the Mindoro strip. They roamed the skies as spotters of aggressor units, switched to become aggressor air on occasion, and transported forward observers who called in air and artillery strikes on 3d Battalion, 9th Marines.

Unsung heroes of the exercise were the aircrews of VMGR-152. Their KC-130s flew men, material and machines from Iwakuni to Okinawa and from Okinawa to Cubi Point. Their tonnage was astronomical and their hours long. The massive transport chore was shared by Navy C-130s and Air Force C-141s.

No one unit earned all the praise. No one unit was totally successful and perfect. All worked together. For the 1st MAW, *Maflex 78* was a commitment that proved the wing's ability to perform its mission.

major Bruce Shapiro, supplied the wing with such necessities as fresh water, electrical power, motor transport, gasoline for vehicles and aircraft, and engineering abilities.

The support group began its mission the night of D-Day, October 16. "We immediately set up our base camp," explained Maj. Shapiro, "working until 5:50 in the morning. Then we took a one-hour nap and went back to work."

Water purification teams produced drinking and bathing water, supplying the wing with 12,000 gallons a day.

A tactical fuel dispensing system as set up, received 35,000 gallons of

fuel and began to feed the thirsty helicopters of MAG-36 and the *Harriers* of VMA-542.

A tactical air command center was wired for electricity which was supplied to every unit around the airstrip.

Engineers leveled areas and smoothed roads. The mechanics of MWSG-17 kept 85 vehicles "up," providing ground transportation among the various units.

MWSG-17 also maneuvered heavy equipment on the scene for construction and movement of supplies, and provided water tanker and refueling trucks, generators, trailers and a wrecker for vehicles that broke down.

MWCG-18's tactical air control cen-

Readily identified among current Navy and Marine Corps helicopters are the H-46 series *Sea Knights*, with their tandem rotor configuration setting them apart from the single rotor design of other Navy/Marine helos. Tandem rotors have been a feature of all production helos built by Boeing/Vertol, and its original predecessor company, Piasecki.

In 1958, Vertol completed a company sponsored prototype of a new helicopter design, powered by two Lycoming T-53 turbine engines for potential military or civilian use. The 107 first flew in April, exhibiting most of the basic configuration characteristics to be found in all of its 107-series successors. The Army ordered three YHC-1As which were developed as GE-T-58-powered military evaluation vehicles under a Bureau of Aeronautics contract. First flying in August 1959, the YHC-1As were followed by an improved commercial/export model, the 107-II.

During 1960, the Marines evolved a requirement for a twin-turbine troop/cargo assault helicopter to replace the piston engine types then in use. Following a design competition, Boeing/Vertol was selected to build its model 107M as the HRB-1, early in 1961. It retained the general configuration of its predecessors, including the aft sponsons carrying the fixed main gear, a fixed nose gear and built-in emergency flotation provisions so it could land and take off from the water in light seas. Special features included power-operated blade folding, integral cargo handling provisions, a rear loading ramp that could be left open in flight, personnel recovery and rescue equipment, and provisions for hoisting 10,000 pounds externally. These and other features marked a significant step forward in helicopter capability in the time period.

First flight in August 1962 was followed by a change in designation to CH-46A, development flight testing, (including the first NPE in January 1963), and BIS trials beginning in March 1964. Fleet introduction of CH-46As with the Marines and UH-46As with the Navy took place in November 1964. The latter were modified for use in the vertical replenishment role.

Production continued in subsequent years, along with modifications to improve some of the H-46's characteristics. With service in SEAsia came installation of guns and armor. Increased power requirements were met by installation of higher powered T-58-GE-10s in the CH/UH-46D models, which also featured new cambered (droop snoot) rotor blades. The final CH-46E, with further increased power, was preceded by the last production version, the CH-46F, before production was completed with delivery of the 524th H-46 in February 1971.

The early A models now serve as search and rescue HH-46As. CH-46s equip Marine reserve squadrons, and conversion of earlier aircraft to the new CH-46E version is under way with fiberglass blades slated to join its other improvements.



CH-46D



CH-46E



H-46

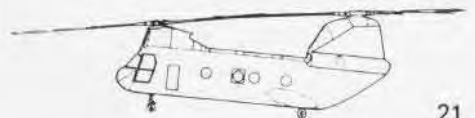
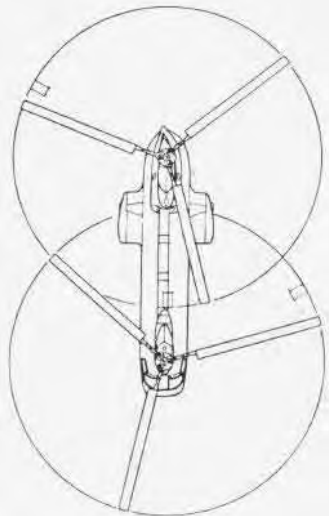


Rotor diameter		50'
Length (over rotors)		83'4"
Height		17'
Engine		
A	T-58-GE-8B	1,250 hp
D/F	T-58-GE-10	1,400 hp
E	T-58-GE-16	1,800 hp
Maximum speed		
A		131 kts
Maximum range		
A		210 nms
Service ceiling		
A		12,800'
Hover ceiling		
A		7,300'
Crew		3
Troops and cargo		17 and 4,000 lbs.

HH-46A



HRB-1 (CH-46A)



VA-303 and VA-304 Corsairs wait
in the desert dawn at NAS Fallon.

ON THE LINE

Story and Photos by



It happens every year. For two weeks, civilians leave their regular jobs, put on Navy uniforms and join their fleet counterparts as part of the regular forces. Everyone knows that a reservist trains one weekend a month and two weeks a year. But few outsiders know what each reservist must go through in order to be a valuable part of his squadron.

Personal endeavors must take a back seat to military requirements. Because training is "a second job," the reservist has a lot to do. Every drill is spent keeping up old skills and learning new ones. For the pilots, it means flying aircraft once, maybe twice, a day. And there are normal squadron duties: admin, operations, maintenance and collateral functions. For enlisted men, maintenance, personnel and admin are primary duties, while committees and miscellaneous assignments take up the rest of the schedule. The reserve squadron be-

comes a full-time Navy squadron.

During the week each unit is manned by full-time active duty personnel, regulars and TARs, who act as station keepers, flying and maintaining the aircraft. During the weekend, the unit is augmented by reservists working alongside the regulars. The better part of the year is spent keeping up in all areas, with an eye toward the annual AcDuTra, the two-week active duty period. As it approaches, the squadron pace quickens. More and more time is spent at the base and, about four weeks immediately prior to the cruise, it is hard to tell the reservists from the regulars. The hours are long and the pressure is noticeably tougher, on everyone.

During the FY 78 AcDuTra cruise, CVWR-30 went to NAS Fallon, Nev., in the desert wastes east of Reno. Fallon, despite its isolated location, is an important base because of its several ordnance delivery areas and EW

ranges — stories in themselves. All West Coast squadrons go to Fallon, from time to time, for periods of weapons training and to sharpen their EW skills. The reserve squadrons of CVWR-30 are no exception.

The logistics involved in moving an entire air wing, for only two weeks, to another base are awesome. One of the busiest men before and during the AcDuTra is the wing operations officer. CVWR-30's is LCdr. Tom Scully, an A-7 driver with numerous bombing derby awards to his credit. He and the staff had to pull together a myriad of loose ends before the wing's AcDuTra could become a reality.

With another air wing already scheduled at the Nevada air station, the turnaround and rest times for station personnel would be limited. LCdr. Scully had to coordinate a smooth airlift operation into Fallon, as well as ensure a supply of ordnance for the fighter and attack squadrons. The wing



WITH CVWR-30

LCdr. Peter Mersky

also needed Marine forward air controllers in OV-10s for combat search and rescue training. These critical evaluations not only test weapons delivery accuracy but also the ability to work with FACs executing weapons drops near friendly troops on the ground.

Coordinating target range times, providing helo support for SAR exercises and ensuring that the wing squadrons were notified in time to participate accounted for 16-hour days at CVWR-30 operations.

Several other logistic aspects for an AcDuTra present problems. They include host air base and VR squadron support. In this case, VR-30.

In the words of LCdr. Scully, "There is no way that an air wing can survive at Fallon without supply support." To cover this problem, VR-30 flew C-1s on a daily schedule from North Island to Miramar, Alameda and Fallon. Preliminary trips to Fallon

were also necessary to coordinate with the fleet liaison office everything required from the base: berthing, messing, TAD requirements, operations and various procedures.

The squadrons arrive one by one — the ground crews by airlift, the flight crews with their aircraft. No one can deny that it is a good feeling to watch your squadron's planes arrive, in flights of three or four, approach the tower and execute a snappy, well-coordinated break.

Operations usually start with aircraft maintenance, the crews getting right into the swing of things. The pace during an AcDuTra seems to constantly increase, heading toward a point, usually during the second week, when the ORE is in full stride. The first week serves as a workup period — time to get the planes ready, the spaces functioning, the personnel in the right frame of mind, the flying crews' skills tuned up. To change from

a civilian — salesman, student, policeman, teacher — into a full-time, smooth-functioning electrician, ordnanceman, photo mate or metalworker takes getting used to. A fleet sailor knows his rate is his job for the length of his hitch, but a SAR must set aside his regular job worries and responsibilities and transition to *being* a fleet sailor. This is not meant to put the SAR types on a pedestal, but merely points out that the two converging roads of participation in the Navy are different, separate paths.

As each man settles into the routine, old memories return. Going on watch, working shifts and trying to catch a meal or a nap in between often evoke thoughts of earlier active duty days. It really is like being back in the fleet. Remember trying to catch a few winks, curled up on a big pile of rope behind the carrier's island between launches? Or checking the watch bill to find you've got the 2400-



Top, technicians work on a Crusader. Above, an F-4 Phantom from VF-301 taxis out, as does an A-7 Corsair from VA-304, at right. Opposite, top to bottom, a VA-305 Corsair on a practice mission releases its Snakeeyes; F-8 engine in hangar area; a Crusader from VFP-306 plugs into a KA-3 Skywarrior tanker from VAQ-308.

0400 stint and the first flight is 0800 which means you start work at 0600?

There are good times, too, just like on active duty. The friends you make and keep, the liberty, the total experience of working en masse, together, and accomplishing the mission. It's hard to tell an outsider about it, but oh so easy to remember years from now with a friend over a beer.

The officers and men of CVWR-30 are very visible exponents of the Navy's reserve forces during a cruise. Not only do the individual squadrons look hard at each other, but they know that inspecting teams are watching them. The simplest things, from how an individual stands his watch, how he conducts himself on the flight line, the accuracy of an A-7 pilot's hit, the immediacy of an RF-8's post-strike BDA photos, become vital events. Everyone expects the SAR, with long experience in his specialty, to come up to the mark.

During the last week at Fallon, the air wing was carefully graded by ORE inspectors from ComNavAirPac. Written as part of wing commander's orders, the ORE, in one staff officer's words, is "just about the most important inspection any CAG or squadron C.O. can go through. For the reserves





Cdr. Tom Irwin



LCdr. Bob Norrell

it's the most important inspection of the year."

Every phase of operations was subjected to scrutiny: maintenance, safety, operational readiness and effectiveness, as well as special areas, such as VFP-306's air intelligence department which is at the heart of the light photo reconnaissance mission. Various tests, written and airborne, were given and observed. The final exam was the Alpha strike scheduled for November 3, a Thursday.

Several targets in the Nellis complex were pinpointed by 306's photo Crusaders. Target folders showing the various views and approaches were distributed to the VA and VF outfits. After initial briefings, 40 aircraft of the wing took off to strike the complexes of the Orange (enemy) Forces. An extra note of realism was injected by the presence of Red Flag defenders from Nellis Air Force Base. This was something new: a high-speed, low-level pop-up attack on a target in very hostile territory with a strong air-to-air and ground-to-air threat.

Sure enough, as the A-7s and F-4s struck, defending interceptors rose to meet them in the form of F-104s, F-5s and F-15s out of Nellis. In the words of one pilot, "There were planes everywhere," as the action ranged from the mountain peaks up to 20,000 feet.

If a pilot was shot down, he was to exit the area, but try telling a Navy pilot he's been had and he'll give you an argument. So the airplanes continued mixing it up until fuel caused a breakoff. Even the unarmed RF-8s got into the hassling. Commander Tom Irwin, VFP-306's skipper and an ex-F-8 fighter pilot, could not resist the temptation to tack onto an F-15 closing in on the wing commander's aircraft. With the CAG's okay, Cdr. Irwin successfully engaged the F-15 *Eagle*.

The ORE was a success, proving once again the reserves' capabilities. All squadrons scored well but, for the first time, VFP-306 came out on top as the highest scoring unit in CVWR-30, with an overall grade of 98.33.

CAG Speaks

Commander Riley D. Mixson commands CVWR-30, one of two reserve air wings. Headquartered at NAS Alameda, CAG Mixson's credentials are impressively similar to those of his predecessors and fleet counterparts. Designated a Naval Aviator in 1960, he flew aboard the axial deck carrier USS *Lake Champlain* with VS-32, earned an MS degree in management from the Naval Postgraduate School and has had a tour in Washington with NavAirSysCom. He was an instructor in the training command and joined the attack community piloting A-4s and A-7s with the VA-195 *Dambusters* in Southeast Asia. He flew 250 combat missions from USS *Oriskany* and USS *Kitty Hawk*, attended the Naval War College, earned an MS degree in international affairs, then skippered the VA-215 *Barn Owls* with their *Corsair IIs*.

LCdr. Peter Mersky, a frequent contributor to *NA News* and a selected air reservist with VFP-306 (one of the eight wing squadrons), interviewed CAG and recorded his comments:

"I have a high regard and strong praise for the reserves in this air wing. I endeavor to visit the various units as often as I can here at Alameda, Point Mugu, Miramar and NAF Washington. I try to fly with the squadrons, I learn from and assist with their operational, administrative and maintenance related problems. But it is only during the two weeks of AcDuTra, in this case at Fallon, where I really get a chance to see the wing function as a total unit. Fleet air wings deploy aboard carriers for prolonged periods and therefore work together on a continuing basis. With us, this cruise period signals the only time we can

put our assets all together at one base and operate them as a team.

"Motivating the young, enlisted selected air reservists is a challenge. While the senior enlisted types may stay on for reasons of comradery, well established feelings for the Navy and the country or even plain old job satisfaction, the junior men require constant encouragement to keep them in the reserve force. This is particularly true since we're in the post-Vietnam, no draft era.

"On the other hand, motivating the air crews is no problem. For them, the opportunity to continue flying is enough to ignite their interests and dedication in staying with the program. We have one VA skipper (Commander Al Talley of VA-303), for example, who is vivid testimony to that. After flying B-47s in the Air Force in the late 1950s, he transferred to the naval reserve. He accumulated 800 hours in A-4s, transitioned to A-7s and now commands a squadron. He's the only Naval Aviator I know who made his first night carrier landing as a full commander, an event which transpired during qualifications last year.

"Due to personal conflicts, school commitments and the job situation, scheduling requires long distance planning for the reserves. There are unique management problems in getting wing personnel together for a deployment.

"A fleet wing goes to Fallon for two weeks of training and is given an operational readiness evaluation (ORE) at some future time aboard a CV. For us, our ORE is, in effect, *the* two weeks. We've got to have it together by day one. This accounts for our heavy reliance on the higher level of maturity and experience of the



reservists in the wing. Seventy-five percent of the flight crew, incidentally, are combat veterans, with an average of 1,000 hours in their type aircraft.

"In the future CVWR-30 is looking for more deck time to hone skills around the carriers and update flight crew qualifications. There are plans for the first reserve coast-to-coast fighter weapons meet at Yuma, Ariz. Our two fighter squadrons intend to participate in joint USAF/Navy fighter adversary meets this spring. The three attack squadrons are frequently called upon to act as adversary aircraft for fleet 'war at sea' exercises and participate in all West Coast light attack bombing derbies.

"VAQ-308, which flies KA-3 *Skywarriors*, is often busy flying trans-Pac missions. VFP-306, operating RF-8Gs, supports other activities and government agencies outside the wing with its photographic capabilities. And VAW-88 is currently transitioning from the outdated E-1B to the sophisticated E-2B.

"The bottom line is that CVWR-30 measures up to its mission of an air wing, fully combat ready and available for deployment as a unit on short notice. This Fallon cruise is testimony to the skills, dedication and spirit at hand. From my standpoint, I get an extra degree of satisfaction in being part of the reserve force."

Turbo-prop E-2B from VAW-88 makes CVWR-30 an all jet wing.



SAR WARS

Story and Photos by JO3 Bill Ervin



And other reserve units train at Fallon in a different type of exercise. The following is an actual account of a SAR exercise held there last November. Involved were reserve squadrons HC-9, North Island, and VFs 301 and 302 from Miramar.

As the sun scales the top of the Nevada mountains, the pilots huddle in a final brief while HC-9 helicopters are towed from the hangar. It is 0615.

While "survivors" who are to act as downed aircrewmembers are bussed to surrounding bluffs, enemy troops wait by a truck on the side of a cliff. The desert sun is warming the cold, biting desert wind. It is 0712.

The distant thunder of the F-4 jets of VF-301 rattles the earth like a minor quake. The survivors are on the run — the enemy not far behind. All is ready. The war is about to begin. It is 0755.

A loud siren, that bounces throughout the canyon below, declares war. It is 0810.

The helos wait in the distance — unseen. The F-4s move in to "sanitize" the area of all enemy troops. At the same time, they will locate survivors and relay their position to HC-9. Once the area is "clean," HC-9 will make the pickup.

As the jets streak through the area, enemy fire flashes from a brushy area near the top of a slope. An F-4 strikes with lightning speed. Thick, green smoke billows from the enemy position. A hit. The survivors are spotted. A helicopter moves in for the rescue.

While the chopper hovers over the vicinity where a survivor was seen, there is an unexpected burst of enemy fire. The helo is down. As white smoke rises from beneath it, the craft settles — defeated — to the rocks below.

Another F-4 strikes. The area is sanitized. The second helicopter moves in, lowering its hoist and lifting the survivor to safety.

The war is over. It is 0910. Although simulated, it had a spine-tingling reality for everyone involved.

The thunder of the jets is soon replaced with the low hum of the choppers. The "downed" helo moves, lifting above a circle of dry, desert sand. All is quiet.



Target Practice



CVW-11

The wide open spaces and lack of high density air traffic at The Biggest Little Air Station in the World (over 125,000 acres with only 525 base personnel) contribute to the station's mission: providing services for Navy and Marine Corps squadrons that deploy there for weapons delivery training. By supplying fuel, armament and conventional and electronic warfare ranges, NAS Fallon enables a squadron or air wing, regular or reserve, to become operationally proficient in weapons delivery and carrier-like exercises.

Planning this kind of exercise is easier said than done, as pointed out in the CVWR-30 story, page 22.

So, when the 1,200 men and 70 aircraft of CVW-11 arrived at Fallon last April for a 12-day training period, five months of planning preceded that arrival.

During the next 12 days over 1,400 sorties were flown by F-14s, A-7s, A-6s, KA-6s, EA-6s, S-3s, E-2Cs and SH-3s. Rockets were fired and bombs

By JO2 Marc Matteson

were dropped. Ordnance was brought from the storage magazines to the ready service locker. Here a crew of seven issued the ordnance and provided bomb skids, hoists, trailers, people and anything else needed to get the job done.

Twenty-five miles to the south, a crew of six manned the Bravo 19 bombing range from 0730 to 2330 in two different shifts. Personnel in the two spotting towers, one on the left and one on the right, used binoculars to sight the hits in relation to the bull's-eye, relayed the information to the central tower where the impact board is located and the distance is determined by triangulation. Anything within 50 feet is considered a kill; anything within a couple hundred feet is considered well done.

The wing practiced electronic warfare in a created hostile enemy environment, utilizing four different radar sites. Approaching aircraft are picked up 64 miles away. At precisely the right moment, a surface-to-air missile is fired. A computer printout tells how close the missile came to scoring a direct hit. There is only a 50-percent chance of survival if the missile comes within 300 feet; outside of 300 feet survivability is rated 0 to 100 percent.

During the training period a landing signal officer was on duty at all times, controlling and grading each pass, using radio and light signals.

Another thing CVW-11 tried was night recoveries. Air controlmen from *Kitty Hawk* ran shipboard radar Case-3 recoveries, training the ACs and refreshing pilots in night landings. A vital part of the successful evolution of this operation was tower control and

Above, the strafing target is a parachute hung between two poles. Beneath the chute a metal device creates a magnetic field making it possible to count the rounds. Opposite page: top, Gordon Patterson locates impact area of bomb and Mike Nichols determines accuracy; center, left, VA-195 maintenance man returns tire to hangar; center, right, VA-52 ordnancemen prepare to load practice bombs; bottom, RVAH-7 plane captain signals taxi check. Right, pilots attend brief.



he air controlmen who manned it. The tower provided safe takeoffs and landings, often in heavy air traffic.

Perhaps the most important missions in the 12-day period were the Alpha strikes. Explained CVW-11 operations officer, LCdr. Ollie Milam, "These were quite similar to what we did in Vietnam off our aircraft carriers. In the Alpha, a group of loaded A-6s and A-7s flies into the target area

with an E-2C providing airborne early warning of hostile planes. Attack aircraft are well protected by fighters. EA-6s are along to jam radar."

And after a strike, a search and rescue exercise was often practiced.

Units participating in the exercise were VAs 127, 192 and 195 from Lemoore; VFs 114, 126 and 213, Miramar; VAQ-131 and VA-52, Whidbey Island; VAW-122, Norfolk; VS-33, North Island; VR-30, Alameda; RVAH-7, Key West; and HS-8, Imperial Beach. The exercise was commanded by Commander R.W. Leeds.



Legare

PH1(AC) A. E. Legare



Legare



Oldies but Goodies

By Peter Kilduff



Only one aircraft carrier has ever sailed the Connecticut River. And it was a strange sight to see the flattop cruising north into Hartford with its flight deck spotted with an A-4A, a TBM-3E and an F4D-1.

In case you're wondering what class of aircraft carrier can slip beneath the bridges over the Connecticut River and deploy with such an unusual air wing, the carrier was, in fact, an Army barge and the Navy aircraft were from the collection of the Connecticut Aeronautical Historical Association (CAHA). The aircraft were being returned to the Association after being displayed aboard USS *Intrepid* (CVS-11) during the Bicentennial celebration in Philadelphia.

CAHA is a non-profit historical organization dedicated to preserving a wide range of aviation artifacts, from a WW I pilot's flight suit to one of the two surviving North American FJ-1 *Fury* jet fighters. Most of CAHA's holdings are on display at the Bradley Air Museum, adjacent to Bradley International Airport in Windsor Locks, just north of Hartford.

Since Connecticut has also been home to a number of Naval Aviation suppliers — Pratt & Whitney, Sikorsky, Chance Vought, Kaman, et al — it is not too surprising to find that the museum displays an excellent selection of naval aircraft.

The naval side of the collection includes: The Chance Vought XF4U-4 *Corsair* (the first -4 variant); a Consolidated PBV-5A *Catalina*; the only surviving Curtiss XF15C-1; a Doug





SBD-5 *Dauntless*, A-3B *Skywarrior*, A-4A *Skyhawk* and F4D-1 *Skyray*; a Grumman F6F-5 *Hellcat* and F9F-2 *Panther*; General Motors-built versions of the FM-2 *Wildcat* and TBM-3E *Avenger*; a Lockheed SP-2E *Neptune*; Martin AM-1 *Mauler*; North American FJ-1 *Fury*; Piasecki HUP-2 *Retriever*; Sikorsky LH-34D *Seabat*; and a Vought F8U-2 *Crusader*.

For balance, some of the Navy's former adversaries are also in the collection. There's a Kawanishi NIK2-J *George* and a Mitsubishi Type 00 *Zeke* (better known as the *Zero*). Both aircraft are in the process of being restored to original condition.

The collection also includes many Army and Air Force aircraft, as well as a number of civilian types, but the naval collection is particularly diverse for a non-government facility. The aircraft have been acquired in a number of ways. Some were outright gifts, others have been offered to the group to simply "haul away" and still others on long-term loan from the National Air and Space Museum, which

allows certain qualified museums to display aircraft from its own vast holdings.

Once in Connecticut the aircraft receive lots of tender loving care from a dedicated band of aero-nuts who break away from the real world on evenings and weekends to devote free time to restoring historical aircraft. The museum staff is headed by Phil O'Keefe, an engineer by training and now a museum director by profession. He's also a former Navy man but vows that he tries to remain impartial in selecting aircraft — even if many of the museum's war birds do wear U.S. Navy markings.

If nothing else, however, O'Keefe and his staff are dedicated scroungers. "You have to be," he says, "since there is no parts inventory for most of the aircraft in our collection. What we can't pull off the shelf, we obtain from other museums, junkyards and individuals who, for one reason or another, squirrel away some items of aircraft hardware."

At the moment O'Keefe says he

would like to "bump into some old salt who has an AD4N windshield assembly stashed away in his sea bag. This interesting aircraft was once deployed aboard USS *Lake Champlain* (CVA-39) — but when we got it, the plane was minus the windshield hardware."

It's a slow process to refurbish historic aircraft, but CAHA, which boasts the fourth largest collection in the country, works steadily at the process. In the words of museum director O'Keefe, "These aircraft are an important part of American history and that's why we are trying to preserve as much as we can about the aircraft, their squadrons and the carriers they were assigned to. And we know our efforts are worthwhile when, every so often, some former pilot, aircrewman or plane captain will pass through the museum and share with us his vivid recollections of a particular plane in our display area."

The Bradley Air Museum is open daily all year 'round from 10 a.m. to 6 p.m. All hands are welcome.



touch and go

Plane Guard

The HS-15 *Red Lions* have long been recognized for their antisubmarine warfare role of searching out, tracking and localizing submarines. Recently they have become very popular with aircrewmembers stationed aboard *America*, for their secondary mission — plane guard.

Aircrewmembers of HS-15 made two at-sea rescues within 24 hours recently. And it was the first actual rescue for both wet-crewmembers involved. Two pilots and three NFOs from VF-142 and VAQ-137 were rescued.

It was the last recovery of the evening and Ltjg. Dave Crocker, LCdr. Dave Raffetto, AW2 Greg Nash and wet-crewmember AWAN Richard Good were on plane guard. An F-14 *Tomcat* rolled off the angled deck. A flash of light from the carrier signaled a successful ejection of pilot

and radar intercept officer. "Aircraft in the water" was radioed and the plane guard crew quickly responded as did another HS-15 crew, Lt. Nick Ross, Ltjg. Joe Sheehan, AWC Gary Lobdell and wet-crewmember AWAN Tom Hayes. They were on an ASW mission and were called to assist.

The common procedure when men go into the water in the immediate vicinity of the carrier is for flight deck personnel to throw their lighted wands into the water to facilitate visual contact with the SAR area. These lights were most helpful in finding the search site, the crews reported later, but were also a hindrance because there were so many. The pilot, LCdr. Jeff Cook, and Lt. Lar Stampe were located and picked up and were safely aboard *America* within a half-hour of the initial call.

The following day the crew of an EA-6B ejected about six miles ahead of the ship. LCdr. Ted Cash and his crew, Ltjg. Roger Fox, AW2 Greg Nash and wet-crewmember AWAN Richard Good, responded to an emergency beeper signal and a visual sighting of wreckage in the water by another jet. Another crew assisted: Cdr. Andy A. Granuzzo, Lt. Pete Blackwood, AW3 Robert Sipila and wet-crewmember Tom Hayes. The survivors were quickly spotted and picked up.

For VF-142 and VAQ-137, two flight crews are safe and have returned to duty, thanks to the quick rescue efforts of the *Red Lions*' crews. For the two wet-crewmembers of HS-15, their baptism is complete. Only a month in the squadron, and they have performed their first actual rescues.



Star Wars

A replica of a Naval Aviator's helmet reached galactic heights recently when it was used as the model for the helmet worn by Luke Skywalker, hero of the smash movie *Star Wars*.

When Skywalker ventured out into space to right interplanetary wrongs, he was armed not only with "The Force" but also with a helmet fashioned after that of Naval Aviator Lt. Ken Cunningham.

Lt. Cunningham of the Navy Information Office, Los Angeles, received a telephone call last summer requesting various military headgear for modeling helmets to be used in a science-fiction movie being produced in England. "I loaned them my flight



helmet and a gunnery helmet from an aircraft carrier," says Cunningham. "After they were returned, I didn't think anything more about it."

Cunningham and his wife were in a theater watching *Star Wars* when he recognized the copy of his helmet. "We were the last two in the theater," he says, "watching the credits carefully, when we



saw that the film was produced in England."

Cunningham borrowed the helmet from the production company and it was an instant hit with the neighborhood children, including those of JO1 Bill Trent also of NavInfo, L.A. For a brief time, "The Force" was with the Trents, Trevor, 7, (left) and Tiffany, 6.

On Deck

With a deafening metallic scream, a 20-ton aircraft smacks the deck of *Constellation*. Within seconds a plane roars off the flight deck and is airborne while another, at 150 miles per hour, comes screeching in to snag the arresting cable. It's a continuing cycle.

The flight deck covers four acres. It's where things happen on a carrier. A place where there's no margin for error. One unplanned step or one momentary lapse of attention can spell disaster.

The men who run the flight deck have one of the most dangerous jobs in the world. They are the handlers, the Aviation Boatswain's Mates, Handling (ABHs). They belong to the V-1 division of *Constellation's* air department.

V-1's 111 men are respon-

sible for all aircraft movement on the flight deck. They operate the elevators, tow the planes and chain down the aircraft. They spot aircraft for launching, man the crash and salvage crew and are responsible for maintenance of the deck, island and catwalk areas, and aircraft handling gear.

"Our job is to run the deck . . . safely," says LCdr. A. T. McGuffey V-1 division officer, "and it's a big job."

Every man who works on the flight deck must be thoroughly familiar with his job. An airman reporting to V-1 spends several days learning flight deck operations and safety procedures. He then dons the blue jersey of the handlers and is closely supervised until he shows he knows his duties.

After a substantial period

as a deck hand, an airman usually moves up to the position of tractor driver. If he has what it takes, he later dons a yellow jersey as a flight deck director.

In charge of the flight deck, directors run the top-side show. They get quick response to commands.

"Nowhere else in the Navy can a young man have such responsibility," says McGuffey. "We've had airmen in charge of their own 'fly' (the flight deck is divided into three 'flies' or specific areas, each manned by about 15 men). When you have aircraft, worth \$15 million and more, coming within inches of each other, directing them can be a pretty heavy job."

Certainly the ship needs all types of personnel for successful and safe operations. But no group is more important than those people in V-1. Without them, *Constellation* and her sister carriers simply couldn't function.

JO2 Brander Queets



*A History of
Sea-Air Aviation*

*Wings Over
The
Ocean
part seven*

By John M. Lindley

World War I both helped and hindered postwar development of commercial air transport. The war helped to promote the development of aircraft which could be adapted to carry passengers. Prior to the war, airplane designers had built multi-seat, cabin and multi-engine airplanes, but the wartime demands for aircraft for bombing, troop or staff transport and long-range reconnaissance hastened these developments. Yet aviation in WW I also acquired a public image that was hardly beneficial to carrying passengers. Both aircraft and pilots had the image of fighters engaged in a life-or-

death struggle. To some degree, this image was accurate, but it hardly contributed toward convincing the public to try air travel.

Despite these handicaps, the first commercial airlines got their start in 1919. Several companies in England and France initiated passenger services across the English Channel between London, Paris, Brussels and Amsterdam. A German line, Deutsche Luftreederei, began service within Germany. A French company established a run between Toulouse and Casablanca, Morocco, across the Mediterranean.

Air transport did not develop as rapidly in the United States as in Europe. Aero Ltd. offered flights between New York and Atlantic City in August 1919, using surplus HS-2 flying boats. Later in that year Florida West Indies Airways began flights between Miami and Nassau for passengers who wanted to avoid Prohibition by going to the West Indies for a drink. This company was soon taken over by Aeromarine Airways, Inc., which, as Aeromarine West Indies Airways, got one of the early foreign air mail contracts to carry mail and passengers between Key West and Havana. By 1921 they were using Curtiss F5L

twin-engine biplane flying boats which could carry up to 14 passengers. Aeromarine continued to expand in 1920 and 1922 but, despite running regularly scheduled flights for a profit, the company closed down its passenger services in 1923.

Another early air mail route was in Seattle, Wash. On March 3, 1919, Edward Hubbard began carrying mail with a Boeing C-700 biplane, equipped with pontoons, between Vancouver, British Columbia, and Seattle, across Puget Sound. Eventually service was between Seattle and Victoria, B.C. Later that year Hubbard switched to a Boeing B-1 flying boat which remained in service until 1927. This route was to save time on mail deliveries to and from the Far East by meeting vessels at their first landfall rather than at the pier. Even after Hubbard's death in 1929, the Seattle-Victoria air mail line continued its regular delivery of mail until its demise on June 30, 1937.

Prior to the establishment of Pan American Airways in 1927, the only other notable early commercial air service across water was the Syd Chaplin Airlines which began operations on July 4, 1919. This airline flew people from San Pedro, Calif., to Santa Catalina, 34 miles away. Although Syd



Chaplin Airlines changed hands and names several times until it was absorbed by Western Air Express in 1928, the company used flying boats for passenger service.

Infant commercial air transport in the United States suffered from several handicaps not present in Europe, where airlines were highly developed in the 1920s. Relatively few U.S. routes involved water crossings of great distance, such as the English Channel; within the United States inter-city routes were already served by efficient railroad lines (railroads in the 1920s were considerably more comfortable than airplanes); and lastly, the relatively low cruising speeds (no more than 100 miles per hour) of early aircraft were not that much faster than the railroads. Laboring under these handicaps, early airlines in the United States concentrated on carrying air mail.

When the U.S. Post Office decided to speed up air mail deliveries and Congress passed the Air Mail Act in 1925 (the Kelly Act) and subsequent legislation, airlines in the United States got the same boost that had made European airlines financially solvent: government subsidy. The Kelly Act put air mail service up for bid to

private contractors on a pound-per-mile basis. The Air Commerce Act of 1926 gave aviation legal status under the jurisdiction of the Department of Commerce and promoted improved navigational aids. The third amendment of the Kelly Act, known as the McNary-Watres Bill of 1930, provided an even greater help to U.S. airlines: the air mail subsidy rate would be based on the amount of space available on the aircraft for mail. This change in the law meant that since operators would be paid by space, there was incentive to fly larger aircraft. If mail did not take up all the space in the airplane, then the operator could use the available room for passengers. The sponsors of this law expected that eventually passenger fares would replace air mail subsidies as the principal form of airline revenue, but before that happened the financial future of most airlines would be secure.

As one historian, R. E. G. Davies,

puts it, U.S. air transport could not pay its own way because it could not charge fares within the reach of the ordinary traveler. Thus the McNary-Watres Act "was a neat compromise. The more mail that was carried, the more passenger accommodations could be provided." Yet these acts of Congress were not the only boosts to air transport in the 1920s.

The introduction of the Ford Tri-Motor Monoplane in 1926 and Lindbergh's flight in 1927 helped spur growth in commercial aviation. The impact of Lindbergh's flight is readily apparent. It showed what a well-built airplane could do when properly handled, and brought a new image of flying as a possible means of public transport to the attention of the nation. The Ford Tri-Motor was important in that it was more successful than other early commercial landplanes that were capable of carrying a reasonable load of passengers. Prior to



1926 when the Ford aircraft made its maiden flight, most passenger planes were flying boats. The reign of the flying boat as a passenger carrier lasted well into the 1930s, especially for overwater flights. But by 1926, landplanes were getting bigger and more reliable. At the same time, in large part because of air-mail operations, airfields and runways were gradually improved. Thus, with a few exceptions, landplanes superseded flying boats in commercial air service.

Flying boats dominated over ocean transport for two reasons. They were generally considered to be safer than landplanes because they were usually multi-engine craft which could land on water in an emergency. In addition they could operate out of places which had good harbors but lacked good airfields. Thus they proved to be ideal for flying to many cities in Central and South America, Africa and Asia.

In the history of sea-air aviation three flying boats of the 1930s are of particular interest and importance. The Dornier Company built several models of its Dornier *Wal* (Whale) flying boats which were very successful as passenger planes. Dornier produced what was perhaps the fullest development of the multi-engine design in a flying boat, its Do.X, which had 12 engines. In 1929 it carried 169 persons on a short flight over Lake Constance and in 1930-31 flew across the Atlantic to South and North America, visiting those continents for 10 months. In aviation history, the Do.X. is rivaled in size only by Howard Hughes' *Hercules HK-1*, also known as the *Spruce Goose* – an all wooden flying boat built in 1947 which made only one short flight.

When British Imperial Airways began to operate its Empire Routes between Great Britain and the Commonwealth nations in the mid-1930s, it used the Short Empire flying boat S-23C. The S-23C was ideally suited for operating out of places which lacked good airfields and, in addition, it could carry 23 passengers.

Another seaplane which rivaled the S-23C was the Boeing 314. It weighed 82,500 pounds and could carry 74



F5L modified by Aeromarine

passengers on short flights, 30 on longer flights. It had an elegantly equipped and appointed interior which made long overwater flights very comfortable. Boeing delivered the first of the 314s to Pan American Airways in 1939 at an initial cost of \$550,000 each.

With flying boats such as the Dornier *Wal*, the S-23C or the 314 available in the 1930s, the leading airlines soon opened new air routes to passenger service throughout the world. In the late 1920s French and German airlines began to offer mail service between Europe and the east coast of South America. In the early 1930s the North German Lloyd Steamship Line operated ship-to-shore mail service. While still far distant from the North American coast, either of the Lloyd liners, *Bremen* or *Europa* would catapult a Heinkel seaplane loaded with mail from the deck. It would fly to New York City via an intermediate landing point such as Nova Scotia. Some of these seaplane flights were as long as 750 miles and delivered the mail to New York from 24 to 36 hours ahead of regular mail delivery service. During the decade between 1929 and 1939, many European nations were preoccupied with establishing air serv-

ice between themselves and their colonial possessions: the British had their Empire Routes; the French, Dutch, Belgian and Italian airlines all established air service to their colonies. These routes made it possible for the air traveler to make connections from Europe to the Middle East, the Indian subcontinent, southeast Asia or Australia. Flying boats usually provided transportation on the long overwater stretches with landplanes used on shorter legs. Air operations to the colonies in the 1930s became a matter of national prestige partly because several different national airlines might operate out of the same airport where facilities were inadequate or stopovers were mandatory. Since the operating costs on these routes were high and the passenger loads were modest, most airlines flying to the colonies received either direct or indirect government subsidies to offset operating losses.

In contrast to these efforts, regular transAtlantic commercial service was aimed at fast transportation – for commercial reasons. Thus the French airline *Aeropostale* established the first regular airline service to South America in the early 1930s. The Germans provided not only airship service to South America with the *Graf Zeppelin*

and *Hindenburg*, but one of their airlines, DLH (*Deutsche Luft Hansa*) offered the first regular transAtlantic mail service in 1934. On the transoceanic leg they used a Dornier *Wal*. Two years later they initiated regular passenger service across the South Atlantic. Passenger service across the North Atlantic followed shortly because Pan American and British Imperial Airways worked out procedures for commercial operations across the Atlantic. Pan American opened regularly scheduled passenger flights from New York to Marseilles via the Azores and Lisbon on June 28, 1939, using a Boeing 314 *Yankee Clipper*, which carried 22 passengers. The crossing took 29 hours with a one-way fare of \$375; round trip \$675. Later Pan Am offered a northern Atlantic route from New York to Southampton, England, via Newfoundland and Ireland.

Pan American Airways started out in 1927 with a 110-mile air route between Key West, Fla., and Havana, Cuba. But, thanks to the astute management of Juan Trippe and his financial backers, some fruitful mergers with competitors and the winning of key foreign air mail contracts from the U.S. Post Office, Pan American grew enormously. By 1929 Pan Am was the master of Caribbean air travel. From there it branched out to encompass all of Central and South America, so that by the end of 1930, it had a total route mileage of 20,308 miles, which included a circuit of South America.

At first Pan Am used Sikorsky eight-passenger S-38 amphibians, flying into harbors and bases which the airline had built. As Pan Am's operations expanded, it switched to the Consolidated *Commodore*, a twin-engine flying boat that carried 20 passengers. Between 1929-1931 Pan Am introduced the first of the *Clipper* boats, the Sikorsky S-40, which soon became its trademark. These seaplanes could carry as many as 40 passengers. By the end of 1934, Pan Am had 103 land and 56 marine bases in Latin America from which it operated flying boats or landplanes such as the Douglas DC-2 and DC-3 and the Lockheed L-10 *Electra*.

In the mid-1930s Pan Am expanded its operations in two directions. It began to make survey flights across the North Atlantic in an effort to determine the problems and possibilities for transAtlantic service. It also began to study the possibility of transPacific flights. As early as 1931 Charles and Anne Morrow Lindbergh flew a survey flight from Canada and Alaska to Japan via Soviet Siberia. When the Soviets refused to allow U.S. aircraft to use bases in Siberia, Pan Am looked into developing a mid-Pacific route from Hawaii to Hong Kong via Midway and Wake Islands, Guam and the Philippines. Its surveys showed that there were two major problems in transPacific operations. Pan Am would need longer range aircraft and adequate bases en route.

Through a combination of good management, astute diplomacy and the availability of capable aircraft, such as the Martin M-130, Sikorsky S-42 and Boeing 314, Pan Am solved the problems of transPacific service. By November 1935 its *Clipper* flying boats were hauling mail from San Francisco to Manila in just under 60 hours. Almost a year later Pan Am opened this route to passenger service and, by 1937, had moved the western terminus to Hong Kong.

Then, Pan American began negotiations with New Zealand and the British for a route connecting Hawaii and Australia. Route surveys were made in 1935, 1936 and 1937, but when the British pressed the U.S. for reciprocal

landing rights at Hawaii and disputed the Pan Am claim to landing rights at Canton Island (a small coral atoll it wished to use as a stopover), Pan Am was stymied. In March 1938 the British decided to drop their claims to Canton Island and to abandon their efforts to get landing rights in Hawaii, clearing the way for Pan American. A Boeing 314 made the first passenger flight from San Francisco to Auckland, New Zealand, via Hawaii, Canton Island and Noumea, New Caledonia, on September 13, 1940. Within the next year, service was expanded to Singapore and Suva, Fiji.

Pan American could not have opened Caribbean, transAtlantic and trans-Pacific air routes without emphasizing technical excellence in its aircraft and flying operations. In 1932, for example, the airline developed a loop-type radio direction finder for aircraft which could be used with the standard radio receiver. It built improved ground direction finders to aid navigation and emphasized long-distance navigational training. By 1938 it required that navigators on transoceanic flights make celestial observations at least hourly, day and night; that drift be measured; that its many ground direction finder stations keep track of airborne craft; and that the planes, in turn, measure radio bearings. Aircrews were told not to depend upon only one system of navigation; instead they were to use and coordinate all available means of overocean navigation so that any errors would be minimized. In addition, Pan American had been developing improved weather forecasting using air mass analysis and a number of upper air meteorological stations since the early 1930s. With improved weather information, pilots and navigators could better determine optimal flight levels and courses to take advantage of favorable winds and, if possible, to avoid poor weather. By 1940, Pan Am had an admirable record for safety and near perfect completion of scheduled flights, as well as an air network greater in extent and scope than any of the leading airlines in Europe.

Not surprisingly, WW II disrupted normal air transport, especially long-



Berth in a Ford Tri-Motor

distance overocean flying. U.S. commercial air carriers tried to continue domestic business as usual, but heavy demands for overseas transport put a severe strain on them. Despite this, the airlines and their Air Transport Association, headed by Colonel Edgar S. Gorrell, willingly responded to the needs of wartime.

U.S. airlines began gradual wartime mobilization in the spring of 1941 when American and British airlines signed contracts for ferrying B-24 *Liberators* built in American factories to England. The Army Air Force established its Ferrying Command (later Air Transport Command (ATC)) on May 29, 1941. It wasn't long until the Ferry Command began ferrying airplanes to the Middle East and Africa across the South Atlantic from bases in the Caribbean. By the end of the war, air transport spanned the globe.

Although most of the domestic air carriers provided overseas air transport services for ATC and the Naval Air Transport System (NATS), Pan Am led the way in the development of overseas operations. Pan Am put its considerable experience to work in building airports, establishing new routes and providing the basic facilities necessary for transport operations around the world. Personnel from Pan Am and other airlines provided the Army and the Navy with valuable managerial expertise and counsel. Consequently ATC and NATS became, in effect, gigantic airlines composed of commercial air carriers – all under contract to provide transport services for the military forces of the United Nations throughout the world. In addition to the necessary managerial and operational aspects of air transport, ATC also established, with the aid of the airlines, various training schools to teach military personnel the procedures and methods of air transport operations.

As part of wartime air transport operations, NATS began work on December 12, 1941. It flew Douglas R4Ds (DC-3s) and later Douglas R5Ds (Army C-54 *Skymasters*) across the Pacific and to Alaska and Europe. This was a powerful and efficient civil aircraft fleet. An R5D, for example,



Boeing 314 Clipper, 1939

could carry 50 airborne troops, 24 hospital litters or a light tank, a truck or two scout cars or 155mm howitzers. It could carry a 7-ton load 500 miles or a reduced payload up to 2,500 miles. In addition to these landplanes, NATS also flew Consolidated PBV patrol bombers and Martin *Mariner* and *Mars* flying boats for transport services. By the end of the war, NATS had a staff of 26,600 persons and a fleet of 429 aircraft of which 159 were R5Ds. ATC was even bigger.

One wartime job which NATS and ATC performed with notable skill was flying important military and civilian leaders to various places around the globe. Pan Am, for example, carried President Franklin D. Roosevelt, General Dwight D. Eisenhower, Admiral William D. Leahy and several other senior leaders to the Casablanca and Teheran Conferences in 1943.

ATC and NATS (combined after the war to form the Military Air Transport System) did their share to win the war whether they were carrying mail, cargo, combat troops, wounded soldiers or VIPs.

World War II helped to produce a boom in air travel, once hostilities ceased. Wartime technical research and development led to safer and more powerful and dependable engines. Four-engine aircraft had become commonplace. There was a surplus of valuable equipment (airfields, navigational aids, radio, radar, weather facilities). In addition, the war had promoted a wider public acceptance of air travel. Thus by 1950 the general

public took intercontinental air travel for granted.

The development of Loran (long range aid to navigation) was typical of the way in which that conflict helped the future development of commercial air transport. Since both military combat and air transport aircraft were operating over great distances at sea, the Office of Scientific Research and Development in the War Department set about developing an electronic navigational aid which was entirely passive: that is, the ship or plane which used it emitted no signal which would reveal its position to the enemy. Loran was the answer. By day, airplanes or ships could get a Loran fix up to 700 miles from the Loran stations. At night they might get a fix as far as 1,400 miles from the transmitting stations (because of more favorable atmospheric conditions).

Beginning in the fall of 1942, Loran stations were set up on the coasts of Nova Scotia, Newfoundland, Labrador and Greenland. With any combination of at least three Loran stations (one "master" and two "slaves"), ATC planes flying to Europe or Allied surface vessels searching for U-boats were able to get accurate navigational fixes in the North Atlantic. These initial Loran stations soon won the acceptance and praise of both air and surface navigators. Consequently, Loran coverage was gradually expanded to include The Hump in China and Burma, portions of Europe and parts of the Pacific.

Wartime research and development produced other technical changes a

developments which fostered postwar commercial air transport operations. Long-range piston-driven landplanes began to replace flying boats on over-ocean flights. The flying boats had poor performance qualities (relative to four-engine landplanes) and high operating costs; thus they were being phased out. Helicopters and rotary-wing aircraft began making short flights where ground transportation was slow or inefficient. In the late 1940s, various airlines began to use helos for flights between the different airports in the Chicago area. By 1965 there were four scheduled helicopter networks operating passenger services in Los Angeles, New York, Chicago and Oakland-San Francisco.

Aircraft also conquered the North Pole again after WW II. On May 29, 1951, Capt. Charles Blair of Pan Am flew his own North American P-51 *Mustang* single-seat fighter over the Pole from Bardufoss, Norway, to Fairbanks, Alaska. Blair covered the 3,337 miles in 10 hours and 20 minutes, averaging 321.4 miles per hour. This solo transPolar flight effectively ended the era of pioneering Arctic flight and began the transition to commercial service over the Pole.

Scandinavian Airlines System followed Blair's lead and made the first commercial flights over the Pole on November 15-16, 1954. One SAS Douglas DC6-B four-engine propeller passenger plane, the *Helge Viking*, flew from Copenhagen to Los Angeles with a crew of 10 and 31 passengers. During

the same time period, another DC6-B, the *Lief Viking*, flew from Los Angeles to Copenhagen. Both planes flew as close to the Great Circle as practicable, covering 5,603 statute miles. The same trip via New York would have been 6,306 miles. The east-to-west flight took just over 27 hours; the west-to-east flight, nearly 24 hours. At that time, service between Los Angeles and Copenhagen via New York took about 30 hours.

Although the Germans and the British had been experimenting with jet aircraft since the beginning of WW II, the first passenger operation with jets did not begin until May 2, 1952, when BOAC put a de Havilland *Comet 1* into service between London and Johannesburg, South Africa. The *Comet 1* could carry 36 passengers at a speed of 500 miles per hour. Its success in passenger operations led other world airlines to begin the transition from piston-driven to jet engines. Pan Am led the field by ordering 20 Boeing 707s and 25 Douglas DC-8s in 1955. By October 1959, Pan Am offered round-the-world jet service. Today the air traveler can usually find jet service connecting all major cities in the world.

Sea-air aviation today includes a confusing welter of old and new aircraft. Piston-engine landplanes, seaplanes and flying boats, and even a balloon or two, among the older aircraft, are making flights over the oceans. Among the newer aircraft types, helos make short runs across

New York harbor or San Francisco Bay; jets, conventional or jumbo, speed around the world; and supersonic transports (SSTs) are making passenger flights.

There is no regular, commercial passenger transport by airship, but a few dirigibles are still in service. The Goodyear Tire and Rubber Company uses its blimps (non-rigid dirigibles) for advertising, public relations and televising sports events. One Goodyear blimp helped film the America's Cup 12-meter yacht races off Newport, R.I., in 1974. During those races, the airship demonstrated once more its stability as an observation platform and its capability for hovering or flying at slow speeds over a wide ocean area.

In contrast to the Goodyear blimp, the SST represents the latest technical innovation in transoceanic passenger flight. Although Congress cancelled funding of an American SST in 1971, the Russians and an Anglo-French corporation (British Aircraft Corporation and Aerospatiale-France) have built SSTs. The Soviet SST, *Tupolev 144*, made its first flight on December 31, 1968. It now provides service between Moscow and Alma Alta, the capital of Kazakh Republic in the USSR. In July 1975, the Anglo-French *Concorde* began regular passenger service between London and Bahrain in the Persian Gulf. On the initial passenger flight between these two cities, the *Concorde* made the 3,500 mile trip in 3 hours and 50 minutes, one-third faster than the conventional jet. Recently the Secretary of Transportation has given approval for the *Concorde* to make experimental passenger flights into Washington, D.C. If the *Concorde* flights between the U.S. and Europe are permanently established, the Atlantic will seem no bigger than a lake to the air traveler. One experimental flight from Boston to Paris and back to Boston took only 6 hours and 18 minutes at an average speed of over 1,000 miles per hour and a cruising speed of about 1,340 miles per hour. The conventional jumbo jet makes a one-way crossing in about 7 hours.



To be continued

AMO

I believe you overlooked a first in your "Women in Naval Aviation" article in the July 1977 issue. I was a student in the Aircraft Maintenance Officer Course, Class 413, which convened on January 7, 1974, and graduated April 26, 1974. This class had an enrollment of four Marine Aviators and one women Navy officer. We were joined for the last eight weeks by four aviator chiefs. According to school officials at the time, Ens. Christina H. Monthan, USNR, was the first woman student in the 16-week course. She stayed on at Memphis after graduation and attended the automatic data processing course before being assigned to VF-124, NAS Miramar. The last I heard of her, she was the quality assurance officer for the squadron.

During her school tour at Millington, Ens. Monthan began flying with the NAS Memphis flying club and, I believe, earned her private pilot's rating before moving to California. She finished the class 3rd of 5 officers and 5th of 9 overall, with a final average of 90.72. I feel that this pioneer also deserves recognition as we were all very proud of her.

H. A. Robertson III, Maj., USMC
C.O., H&HS
MCAS Beaufort, S.C. 29902

O3U/SU

The article on the O3U/SU was very interesting. Your readers might like to know that fighting plane squadrons of the early 1930s did not have radios. Later section leaders received radios and shortly after that all planes had them.

The radios of the fighters couldn't reach out very far, so each fighter squadron had a two-seater with radio/gunner to receive and relay messages.

Fighter squadrons consisted of 18 fighters and one two-seat scout plane, a Vought Corsair. The SUs were very fine aircraft for this work.

The radioman had to service and keep in good repair all radios in a squadron, conduct practice sessions when not flying, and keep up his gunnery proficiency. A radioman in a fighter squadron never lacked work.

I see that you used my picture of Ritmeister Arnold York. He was either an ensign or lieutenant junior grade. It will be

interesting to know whether or not he's still alive and if he sends in details on the incident.

Max R. Schwartz
1015 23rd Street
Wyandotte, Mich. 48192

Helicopter Association

The Navy Helicopter Association invites representatives of industry and the military to submit papers for presentation at its annual convention in San Diego, Calif., in May 1978. Papers of both general and limited interest will be welcome on any subject related to helicopters and multi-mission VTOL. Presentations should not exceed 30 minutes. Audio and visual aids will be provided. Abstracts should be submitted to the Navy Helicopter Association, HSL-35, NAS North Island, San Diego, Calif. 92135, not later than March 30. Authors of papers selected will be notified by April 30.

Shenandoah

Regarding Thom Hook's letter concerning USS *Shenandoah* survivors which appeared in your October edition, I am happy to inform you that there is at least one other survivor of that last tragic flight. He is Charles S. Solar who was a mechanic on that flight and presently resides, in retirement, in California.

I am aware of the above for two reasons. First, during the normal course of my job here at NATTC I answer a great deal of correspondence concerning airships. Second, Mr. William Althoff and I, independent of my job, are in the process of taping the recollections of those who participated in the Navy's rigid airship program. Mr. Althoff was in contact with Mr. Solar only last month.

In 2½ years, we have contacted 152 airship men and have about 200 hours of recordings. These tapes are to be incorporated into an audio library which, hopefully, will become part of an LTA museum to be built here at Lakehurst.

Michael C. Miller
Public Affairs Officer
NATTC Lakehurst, N.J. 08733

Navy Crosses

I must take exception to Capt. C.F. Hamilton, USMC, and your spelling of Admiral Noel Gayler, USN(Ret.). Having spent nearly two years as his aide and executive assistant, I would like to take this opportunity to inform you his name is spelled Gayler and pronounced (Guy-ler).

"OB" O'Brien, Cdr.
VQ-2
FPO New York 09501

Ed's Note: We stand humbly corrected.

Pen Pal?

I am interested in military aviation and in particular Naval Aviation. I would be grateful if you could put me in contact with a member of the U.S. Navy who is engaged in flying duties and would like to correspond with me on a regular basis.

Brian Hunter
P.O. Box 1271
Wellington, New Zealand

TPS Reunion

The Naval Test Pilot School will hold its 30th annual reunion and symposium at Patuxent River, Md., on April 29, 1978.

Commander J.D. Hamilton, school director, is asking alumni for papers on current test projects for presentation at the symposium. One-page abstracts of proposed presentations should be submitted by March 15 to LCdr. C.E. Boehmer, U.S. Naval Test Pilot School, NATC Patuxent River, Md. 20670.

Alumni are asked to send their current mailing addresses to the school.

Latin American Aircraft

I am researching all aspects of Latin American military aviation for a series of articles that will be published in the *Small Air Forces Observer*, the official publication of the International Plastic Modelers Society, Small Air Forces Clearing House.

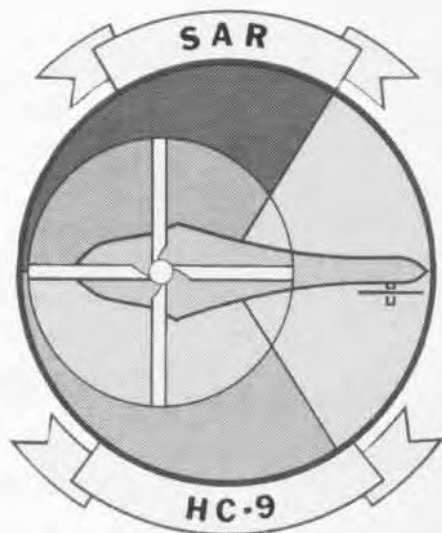
I am looking for photos of Latin American aircraft of any vintage.

Nicholas J. Waters III, IS1
NARDet Twin Cities
E62nd & 31st Ave. S.
Minneapolis, Minn. 554

Published monthly by the Chief of Naval Operations and Naval Air Systems Command in accordance with NavExos P-35. Offices: Potomac Annex, Bldg. 6, 23rd and E Streets N.W., Washington, D.C. 20372. Phone 202-254-4696; Autovon 294-4696. Annual subscription: \$12.85, check or money order (\$3.25 additional for foreign mailing) direct to Superintendent of Documents, Government Printing Office, Washington, D.C. 20402. Single copy \$1.25.



Established August 1, 1975, Helicopter Combat Support Squadron 9 is a Naval Air Reserve unit home-based at NAS North Island, Calif. In its role as the Navy's only combat search and rescue squadron, HC-9 trains Navy pilots and aircrews from the East and West Coasts in combat rescue procedures. Led by Cdr. D. W. Hodge, HC-9 flies HH-3As.



Naval Aviation
NEWS

