

NAVAL AVIATION

NEWS



FEBRUARY 1972



NAVAL AVIATION NEWS

FIFTY-FOURTH YEAR OF PUBLICATION

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FEATURES

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The 60th year of Naval Aviation was filled with events that in many ways reflected the trends of 1971; successes and setbacks, evolution and revolution marked the events that were many things, but never dull.

Navy Takes a Look 35

JOC Dick Benjamin visited Grumman's Calverton facility to do the on-scene report of Navy's preliminary evaluation of the F-14.

Covers

The front cover head-on shot of the F-14 Tomcat is the work of JOC Dick Benjamin. PH1 M. Hershenson took the VF-101 shot, opposite, when he was gathering material for this month's squadron insignia page. The back cover is by AN Paul Mansfield (see page 5 for related story).

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EDITOR'S CORNER

Each year in February, Naval Aviation News features as its lead article a resume of the major events that have affected Naval Aviation during the preceding year. In 1971, a number of significant changes took place which directed the Navy's air arm along new lines of advancement.

As United States military involvement in Vietnam winds down, operations from the decks of our carriers on Yankee Station continue at a high tempo even as the Sixth Fleet is faced with a growing Soviet presence in the Mediterranean. The past year has witnessed, at the same time, an overall reduction in the overseas presence of Naval Aviation: Marine Corps aviation units have left Southeast Asia, naval air facilities in Japan and the Philippines have been turned over to the host nations, and our total carrier force has been reduced by one CVA and one CVS.

However, two new nuclear Nimitz-class aircraft carriers are now under construction and the Navy is optimistic that a third may soon be approved. New aircraft have been introduced into operation with fleet squadrons or are progressing on schedule through development and testing phases.

Naval Aviation News has attempted to provide an insight into these advances: F-14 preliminary evaluation trials are reported in this issue; S-3 development, leading to the first flight of Viking in January; LAMPS and Harrier introduction in June and April, respectively; and aerial minesweeping by HM-12 in August.

The Tomcat is scheduled to be the next addition to the Navy's air arsenal. According to associate editor JOC Dick Benjamin, the aircraft is the next best thing to pumpkin pie on Thanksgiving. Since Dick reported to NANews just over a year ago, his enthusiasm for Naval Aviation has gradually grown. When he returned from the NPE at Grumman's Calverton test facility on Long Island, the staff heard nothing but F-14 for several days. Dick relates that when he was taking pictures of the Tomcat during touch-and-go's, he was so impressed by the aircraft in flight he almost forgot to click the shutter on his camera. He sums up

his impression of the F-14 with one word — beautiful.

Some current weapons systems were also reviewed in NANews in the past year. Air-to-air weapons were discussed in March and air-to-ground weapons last month, with a view towards providing a measure of orientation for those of our readers who may not have an opportunity to become familiar with that aspect of Naval Aviation or who have been unable to keep in touch with the latest advances.

In keeping with that approach and in line with our duty to our readers, we also have, on occasion, reviewed books or other materials which we believe you will find of professional interest. Two such publications have come into our hands. The first is a new book by Gareth Pawlowski, entitled Flat-Tops and Fledglings. It contains a ship-by-ship historical summary of each American aircraft carrier beginning with USS Langley (CV-1) and continuing through USS John F. Kennedy (CVA-67).

The ships are arranged numerically by hull number with illustrations of each ship, along with some excellent photos of flight deck activities. All the carriers except CVE's, which are to be the subject of a future book, are included in this volume. A section at the end of the book provides data concerning citations, unit commendations and campaign medals earned by each ship. Another section illustrates and gives thumbnail information for carrier aircraft from the VE-7 to the A-7. A wealth of other useful and interesting data is contained in the appendices.

The second publication is a slim booklet of 48 pages by Thomas E. Doll, U.S. Navy Markings, WW II — Pacific Theater. This publication relies heavily on photographic presentation, with a few pages of drawings containing an abundance of wing, tail and fuselage markings used to identify naval aircraft throughout World War II. Though relatively little space is devoted to text, it is sufficient to describe the development of aircraft marking systems from 1940 to the end of the war, including such details as the federal standard color identification numbers.



1911

1972

A-6E Makes its Debut at NAS Oceana

NAS OCEANA, Va. — The first A-6E made its debut when VX-5 Detachment Oceana accepted delivery of BuNo 158041. Commander Arthur M. Page, OinC of the detachment, piloted the newest *Intruder* to Oceana from the Grumman Aerospace Corporation's facility at Calverton, Long Island. LCdr. Roger A. Smith, B/N for the flight and A-6E project test officer, was in the right seat on the acceptance flight.

The newest version of the *Intruder* utilizes the same airframe and J-52 engines as the A-6A, but improved electronics end the resemblance.

The A-6E is equipped with a new solid state airborne computer for attack and navigation and is integrated with a new search radar system, AN/APQ-148, which replaces the A-6A search and track radars.

Most significant design improvement

is in the areas of maintainability and reliability. The A-6E uses fewer black boxes than the A-6A, providing more efficient maintenance troubleshooting, and its solid state systems engineering will increase reliability.

VX-5 Det Oceana, a unit of VX-5, China Lake, is responsible for operational evaluation of the weapons system and for providing tactical information relative to its combat role.

Anti-Ship Harpoon Being Evaluated at Point Mugu

POINT MUGU, Calif. — The Naval Missile Center and the Ship Missile Systems Engineering Station at Port Hueneme will test and evaluate the anti-ship missile *Harpoon* on the Pacific Missile Range next month.

The *Harpoon* design phase, an 18-month program involving A-3, P-3 and F-4's and a destroyer, will utilize both destroyer and patrol boat targets.

Contracts for Navy's first anti-ship missile designed for both air and surface launchings were let in June to McDonnell Douglas which sent a staff to Point Mugu this month.

Other Navy missiles are being modified for use in the anti-ship role until the *Harpoon* is ready for the fleet, in approximately three years.

The new missile, still in the design phase, has a conventional warhead and a radar seeker for all-weather operation. Powered by a jet engine, the surface-launched version also has a solid fuel rocket booster for lift from the surface.

Lt. D. W. Stubbs, program officer, anticipates delivery of four series of *Harpoons*: the first group in March, for aircraft separation testing; the second series in June, for launches from a ground complex; a third series, in August, will be used to test the control system; testing of the complete missile should begin in October after delivery of the fourth series. Fourteen air launches from a P-3 *Orion* will be part of the first tests. The missile's radar seeker is slated for evaluation in April, using an A-3 *Skywarrior*.

VT-6 Counts 50,000 Hours

NAS WHITING FIELD, Fla. — Training Squadron Six recently recorded its 50,000th accident-free flight hour during a training flight by Lt. Hugh McCullom and his student aviator, Ens. Thomas Gale.

Representing 26 months of accident-free flying, the record includes 30,232 sorties and 74,407 landings.



Plane Captain AMSAN J. Salmon recovers the first fleet A-6E to arrive at NAS Oceana, Va.

Fleet Air Quonset Personnel Get VWS

NAS QUONSET POINT, R.I. — Scientific research which began eight years ago has produced a new anti-exposure ventilated wet suit (VWS) which will replace the MK-5A rubber-type suit now in use by Navy aircrew members who may face a water survival situation.

For the past four years, Lieutenant Harold T. Pheeny, survival officer and flight physiologist on the staff of Commander, Fleet Air Quonset has had an active role in the research project.

Members of squadrons attached to Fleet Air Quonset have been selected as the first to receive the new wet suits and, according to Lt. Pheeny, nearly 900 aircrew members home-ported here have been measured for the suits at the aerospace physiology branch of the Quonset Point Naval Hospital. Individual sizing and customizing are necessary to obtain a satisfactory fit.

Navy regulations state that anti-exposure suits must be worn by aircrew members operating in areas where water temperature is 59 degrees or below and the air temperature is expected to be 32 degrees or below. Exempted from the rule are crews of large transport-type aircraft.

Designated CWU-33/P, the new survival suit is designed to protect its wearer in 32-degree water, 20-degree air and 20-mph winds for approximately 90 minutes, depending upon the wearer's physical condition. The VWS is constructed of one-eighth inch neoprene foam rubber and is worn with nomex flight coveralls, polyvinyl chloride underwear, rubber mittens, inflatable hood and lined wool socks.

The new survival suit is a wet system (a small volume of water is allowed to flow between the body and the foam rubber). It is flexible, allowing greater mobility, and more comfortable since ventilated air touches the body for better temperature control. It is also easily maintained and repaired, and will provide a maximum buffer against cold, injury and death for the downed aircrewmembers operating in cold water areas.

According to Lt. Pheeny, "The one thing that Navy aircrewmembers must remember about the VWS is that the special underwear must not be washed and dried at high temperature as it may shrink. The laundering process must be kept below 110° F."

HS-11 is Awarded MUC

NAS QUONSET POINT, R.I. — The Meritorious Unit Commendation was recently awarded to HS-11 for contributing "significantly to the development of tactics and employment of soñar-equipped helicopters with a fast carrier attack group."

From December 1969 to June 1970, while serving aboard USS *Forrestal* (CVA-59) with the Sixth Fleet, the squadron compiled over 2,600 flight hours in ASW, search and rescue, plane guard and utility roles, with only seven available aircraft. Additionally, HS-11 developed tactical doctrine regarding ASW helicopters operating with attack carriers; a space allocation and support equipment concept to be used by an eight-plane HS squadron

deploying aboard an attack carrier; and a list of aircrew training requirements. It also revised the aviation consolidated allowance list to support the multimission attack carrier helos.

HS-11, presently led by Commander Robert J. Switzer, was under the command of Commander Felix R. Spiegler during the period of the award.

Apollo 16 Prime Recovery Squadron Named

NAS IMPERIAL BEACH, Calif. — Helicopter Combat Support Squadron One has been selected as the prime recovery pickup squadron when *Apollo 16* astronauts Young, Duke and Mattingly splash down.

Commander Arnie Fleser, squadron executive officer, will be prime recovery pilot of the SH-3G making the pickup. Six helos, 12 pilots and approximately 60 enlisted personnel will make up the *Apollo* detachment.

Operating from the yet unannounced prime recovery ship, the *Fleet Angels* are familiar with the unique tasks involved in pickup, having recovered *Apollo 15* last August.

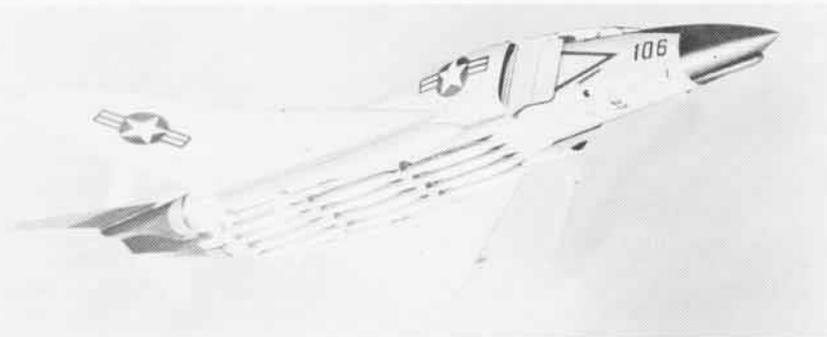
Dopplers for LAMPS

WASHINGTON, D.C. — Teledyne Ryan Aeronautical has been awarded a Navy contract for AN/APN-182 Doppler radar navigation sets which are scheduled for installation in the SH-2D LAMPS and SH-3H helicopters. The new lightweight, fixed antenna Doppler, which replaces the AN/APN-130, is used in point-to-point navigation and automatic descent and hover maneuvers.

The 182 has already been installed aboard selected UH-2A/B plane guards stationed at NAS Pensacola as well as SH-3D's of HS-3, currently deployed to the Med. The sets are presently in use in armed forces helos of Brazil, Denmark and Italy.

QUESTOL Designer Named

WASHINGTON, D.C. — NASA has selected three airframe companies for separate \$1.5 million, six-month contracts for the design phase of the QUESTOL (quiet, experimental STOL) program. One of the design phase contractors will be chosen for



Artist's concept shows conformal carriage adapter and weapons mounted on an F-4B. A Navy/Air Force jointly-funded research program is under way to develop this system for improving operational performance of tactical attack aircraft. Planes carrying weapons using the conformal carriage system experience less drag which improves speed and range; weapons separation is improved and weapons loading and handling are faster and safer for ordnance personnel.

the subsequent fabrication phase which will provide two experimental transport-type aircraft for future NASA flight research.

Douglas Aircraft Company, Grumman Aerospace Corporation and Lockheed-Georgia Company were selected as design phase contractors. Several other major aerospace companies are aligned with these contractors in subcontracting roles.

The objective of the QUESTOL program is to provide knowledge of propulsive-lift technology which is required for the development of quiet STOL transport aircraft. The use of turbofan engine systems to augment aerodynamic lift is considered by some to be the key to noise reduction, airport congestion relief and improvements in short-haul transportation and tactical airlift capability.

Heinemann Gets Navy's Public Service Award

ST. LOUIS, Mo. — Edward H. Heinemann, a vice president of General Dynamics, received the Navy's Distinguished Public Service Award November 17. The presentation was made in Washington on behalf of Secretary of the Navy John H. Chafee by Dr. Robert A. Frosch, Assistant Secretary of the Navy for Research and Development.

Heinemann was cited for his "outstanding contribution to the U.S. Navy in the field of aircraft development" and for his efforts as a 15-year member of the Naval Research Advisory Committee. As chairman of that committee from 1969 to 1971, he "directed work of special significance to the Secretary of the Navy, the Chief of Naval Operations and the Chief of Naval Research."

The award commended Heinemann for providing "valuable advice and assistance on problems and policies concerning naval research programs" and for advocating "simplicity in the complex field of aircraft development. He has made an outstanding contribution to the design, development and production of superior carrier-based aircraft."

Ed Heinemann, former vice president—for military aircraft—Douglas Aircraft Company, was responsible for the design and development of a wide variety of aircraft, including the SBD, F3D, A-1, A2D, A-3, A-4 and F4D.

Hydra Sandhawk Flies

POINT MUGU, Calif. — Personnel of the Naval Missile Center and the Atomic Energy Commission's Lawrence Livermore Laboratory, assisted by the support vessel USS *Norton Sound*, recently conducted the first successful flight test of the *Hydra Sandhawk* rocket and launcher a few miles offshore from San Nicolas Island. The *Hydra Sandhawk*, successor to *Hydra Iris*, will be used to measure x-rays emitting from sources above the atmosphere.

USS *Norton Sound* put the rocket and mobile water launcher over the side and backed off. From a console in a mobile van aboard, an NMC technician began the firing sequence.

The slim two-stage rocket, capable of lifting a 300-pound payload about 150 miles, is 30' long, 13" in diameter and weighs 2,400 pounds. Its payload is 8' long and 14" in diameter.

The *Hydra Sandhawk* system, which also has a land-launch capability, was designed in 1967 by NMC personnel; fabrication began in 1968. Preliminary testing of flight hardware and floating launcher also began in 1968.

Four of a Kind Are All in the Family

CORPUS CHRISTI, Texas — When Ltjg. Eric Honour completed his advanced aviation training with VT-31, he became the fourth member of his family to be designated a Naval Aviator.

It all began in June 1940 when Walter W. Honour, Eric's father, was

appointed to the Naval Academy. He graduated, was commissioned, entered flight training and received his wings, thus establishing a pattern for the Honour family.

When Captain Honour gave Eric his wings, he was pinning his third Academy-bred Naval Aviator son. Eric had been preceded by brothers Walter, Jr., and Craig.

In order to attend the four-of-a-kind ceremony, the three older Honours flew to Corpus Christi. Capt. Honour came from Washington, D.C., where he is assigned to the Office of the Chief of Naval Operations.

Lt. Walter W. Honour, Jr., who graduated from the Academy in 1967 and was designated a Naval Aviator in 1968, came in from NAS Cecil Field where he is a pilot with VA-37.

Lt. Craig Honour, a 1968 Academy grad, arrived from NAS Oceana where he is presently assigned to VF-31.

There is another Honour son, Stephen. He is enrolled at Florida U.

Air-to-Ground BombEx

LEMOORE, Calif.—VA-127 has won the Golden Bomb Award in the ComFAirLemoore light attack air-to-ground competitive bombing exercise. In competition with 11 other squadrons, VA-127 obtained the highest cumulative score in visual dive bombing, strafing and laydown deliveries, and in electronic warfare.

VA-127 and VA-113 won Silver Bomb Awards; the *Royal Blues* in visual bombing competition between A-4 and A-7A/B squadrons, and the *Stingers* in visual and hooded delivery competition among A-7E squadrons.



Oceanographic Development Squadron Eight's newest aircraft, an RP-3D, arrived at NATC Patuxent River in November. The Project Magnet Orion was selected by the Naval Oceanographic Office as its new platform for measuring the direction and intensity of the changes in the earth's magnetic field. Navy has pioneered in airborne magnetic surveying since WW II.



GRAMPAW PETTIBONE

Look Ma — No Wings

Ltjg. Shortwings received word that he would night carrier qualify that evening. Following dinner and the preflight briefing, the young lieutenant departed for his A-7A. Preflight was uneventful except that the A-7A did not have a full fuel load, necessitating refueling prior to launch. After starting and receiving an okay from the final checker before leaving the line area, Ltjg. Shortwings taxied to the fuel pits to hot refuel. (The flight leader had informed the pilot that the rest of the flight would meet him at the ship.)

While taxiing to the pits, the lieutenant decided to put his kneboard on his right leg, partially obscuring the fuel gauge, caution and advisory panels, and he also folded the A-7's wings to facilitate hot refueling. Fueling was normal. Ltjg. Shortwings pulled out of the pits, turned on his anti-collision lights, and called for taxi clearance to the duty runway. During this time, he was thinking about making his Charlie time, the speed required to make it, and the procedures for CCA's. Shortwings "looked around the cockpit" and, seeing nothing unusual, pulled on to the duty runway for takeoff. He added takeoff power, checked his instruments and commenced his takeoff roll, progressing normally up to 145 knots. He initiated rotation with approximately 3,500 feet of runway remaining. The aircraft began a roll to the left, heading toward the left edge of the runway. The pilot, thinking he had a runaway trim, checked his gauges. They indicated normal. He applied right rudder and right stick and succeeded in touching down again on the left edge of the runway. He considered aborting; however, he noted a "couple of hundred feet of runway remaining." He also noted that he was too far to the left for a successful arrestment. Ltjg. Shortwings continued the takeoff with the idea of ejection. He was airborne again at the end of the runway and, as



he passed through 150 feet, he felt the rudder shaker and pulled the alternate ejection handle. The ejection equipment functioned as advertised. During his short descent, Shortwings saw the aircraft stall and impact approximately ½ mile from the end of the runway. He was still unaware of what caused the erratic behavior of his machine. It

was only during his ride back to the hangar that Shortwings realized he had made a takeoff with the wings folded!



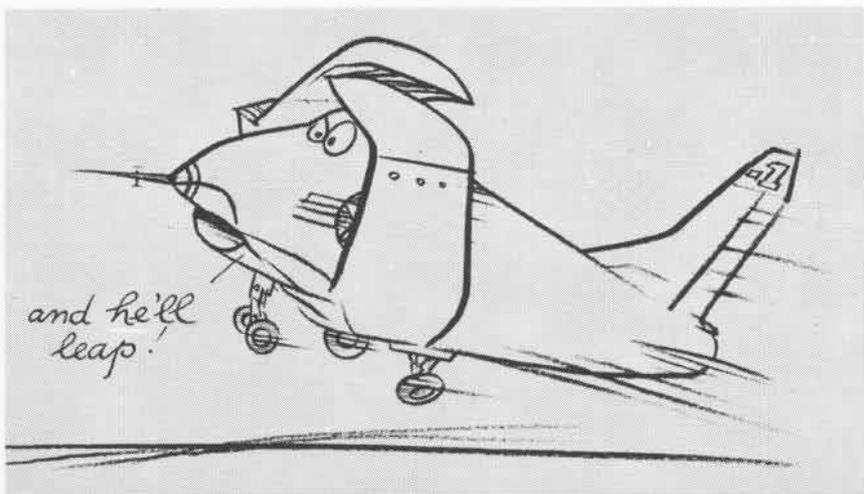
Grampaw Pettibone says:

Great leapin' lizards! Checklists, checklists, checklists, checklists! Kneboard, smeboard! This lad's gonna have to shape up or ship out. If he was dead sure of his CCA procedures before the flight, he could'a concentrated his efforts on the task immediately at hand — takeoff checklist! I don't care what knee you put your kneboard on — there's no excuse for violating NATOPS! This just represents another completely needless loss of an aircraft, to say nothin' about the potential hazard to the pilot! "Lookin' around the cockpit" ain't 'nough, boy! Let this be a warning to all who do not follow checklists!

Check Pilot

Three aviators were scheduled for a combined logistics, photographic and crew training flight in an HU-16D *Albatross*. The crew consisted of a lieutenant commander, the aircraft commander; a lieutenant receiving his aircraft commander check; and a lieutenant junior grade copilot.

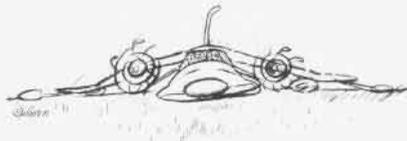
The flight commenced at 0915 from



NAS Pacific Island with the first leg about 45 minutes to a nearby island field to discharge cargo. En route to the next airfield, they photographed some nearby islands. The lieutenant commander was occupying the right seat, giving a check ride to the lieutenant in the left seat.

Arriving at the airfield, they made a low pass to check field conditions. The weather was estimated at 2,000 scattered, visibility seven miles plus, with a 30-degree crosswind of six knots on the runway. The runway was 2,730 feet long with an overrun of approximately 100 feet. Following a low pass, the pilot was all set up for landing and, as part of his check ride, the aircraft commander ordered a go-around. On the next approach, the pilot used 80-85 knots and full flaps. He planned to touch down in the first 100 feet of the runway. There were numerous power changes during the approach and nearly all the witnesses in the aircraft thought the aircraft was "low" during the final approach.

The *Albatross* touched down approximately 100 feet short of the runway. The starboard main landing gear failed, followed by the nose gear, as the aircraft slid 400 feet down the runway to its final resting point. After



the aircraft stopped, the uninjured crew secured the engines and left the aircraft. The HU-16D was damaged beyond economical repair.



Grampaw Pettibone says:

Leapin' lizards! How could'a gent with as many flying hours as this lieutenant commander allow that poor approach to continue? With a calculated landing roll of 1,300 to 1,500 feet — why shoot for a landing in the first 100 feet even though the runway is only 2,730 feet long? That's poor planning combined with complacency!

The landing was well within the capabilities of the machine. Those pilots just plain goofed. I'd down both the upgrade pilot and the check pilot. Every check pilot and instructor should

decide now just how far they're goin' to allow the other fella to foul up before they do something. In this case, it was too far.

Paper FOD Program

Following briefing and preflight, two Marine captains manned their TA-4F *Skyhawk* for a scheduled day carrier landing practice hop. The instructor was in the rear seat. The student, in the front seat, was a recent graduate of Air Force flight training and was enrolled in the Naval Aviators designator syllabus in a Marine training squadron. Start, post-start checks and taxi were all normal. Following completion of the engine run-up and manual fuel check, the aircraft proceeded to a nearby field to conduct practice carrier landings.

Following takeoff from the sixth touch-and-go landing, at approximately 200 feet, the engine began to unwind and run rough. The instructor pilot took control and attempted to push the throttle forward but it was already at full military power. The nose began to fall through the horizon as both pilots ejected.

The pilots and the LSO heard a minor explosion just prior to ejection, and the LSO detected a slowing of the engine rpm. Ejection functioned as

advertised with both pilots landing uninjured on the runway. The aircraft impacted approximately 4,500 feet down the runway and slid to a stop, still on the runway. Both main gears and nose gear were broken off at impact. The TA-4F was a total loss.

Investigation revealed a pair of water pump pliers in the compressor section of the engine.

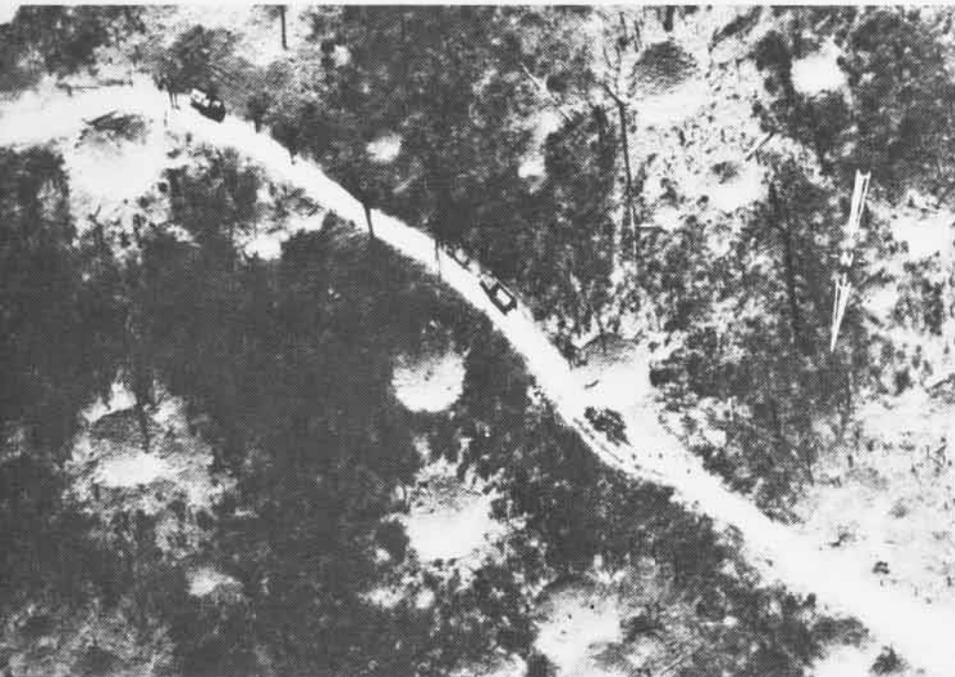


Grampaw Pettibone says:

Egad! Alive?! Now here's one for the book! With all the preachin' we do on FOD, it still cost us this aircraft. Apparently there are still people around who are talkin' when they should be listenin'. This unit has a great FOD program—on paper! Each maintenance action must be signed off by quality assurance personnel with the FOD stamp that all tools are accounted for. Now ain't that nice—that is exactly what was done, "signed off." This accident board did a commendable job and put the blame right where it belongs—supervisory! Mr. Maintenance Officer, you better take a second look at your FOD program—looks like a paper tiger. How 'bout you other fellas? Is your FOD program really effective? Are your quality assurance personnel actually checking for missing tools, safety wire, etc.? Review your program, *now*!! Close the barn door before the horse gets out!



FC



Stopping the movement of enemy supplies along the Ho Chi Minh Trail in Laos, particularly during the dry season, is an important Naval Aviation contribution to stability inside the Republic of Vietnam. At right, Kitty Hawk leaves North Island for her successful 1971 combat cruise in SEAsia.



1971 Naval Aviation Review

YEAR OF CHANGE

By John M. Patton
Assistant Historian, DCNO (Air Warfare)



The events that mark the year 1971 were plentiful, diverse and far reaching. Plans for an American supersonic transport collapsed in Congressional budget debates. The right of various newspapers to publish the "Pentagon Papers" on the Vietnam War was upheld by the Supreme Court on June 30 and, the same day, three Soviet cosmonauts died while returning to earth. Apollo 15's lunar rover explored the moon in July, and, in Japan, 162 lives were lost in history's worst aircraft accident. After August 15, government economic policies proliferated. The following month, the John F. Kennedy Center for the Performing Arts opened, and 43 persons died in a bloody prison rebellion at Attica, N.Y. Mainland China was admitted to the United Nations and Taiwan was expelled from that same organization in October. In December, India and Pakistan went to war. Interwoven in this fabric of world events, Naval Aviation was not unaffected. Great and diverse changes have shaped this organization since its inception 60 years ago; 1971 was no exception. Naval Aviation continued to be the recipient of praise and criticism, to progress and be set back, to influence and be influenced, as it evolved to better serve the nation.

1971 Naval Aviation Review

Carrier-based strike operations during 1971 added another chapter to the history of the Southeast Asia War. After Navy air strikes into North Vietnam on August 5, 1964, and February 7 and 11, 1965 — in response to attacks first on USS *Maddox*, then at Pleiku, and later at Qui Nhon — the Navy, on March 15, 1965, joined the systematic bombing of selected military targets in North Vietnam, Operation *Rolling Thunder*, which had begun March 2. These strikes continued until April 1, 1968, when the bombings were restricted to areas south of the 20th parallel, and then terminated on November 1. Although full-scale peace talks started on January 25, 1969, the air war continued, in 1971, as interdiction of enemy supply routes and protective reaction air strikes against enemy positions. In one instance, exactly three years after the bombing halt, an *Intruder* fired a missile against an attacking enemy surface-to-air missile battery — the 70th protective reaction raid of 1971, the 137th since November 1, 1968.

In a marked increase of activity, the largest air strikes into North Vietnam, since the 1968 bombing halt, occurred from December 26 to 30.

In another highlight of the year, USS *Kitty Hawk* left the war zone after a full combat tour without the loss of a single man or plane to enemy action.

With the **decommissioning** of USS *Bon Homme Richard* and USS *Shangri La*, the Navy's active fleet was reduced to 14 attack carriers, three ASW carriers and one training carrier. Eight attack carriers and one CVS operate in the Pacific, the remainder in the Atlantic and the Mediterranean.

Five CVA's and three CVS's have been active since at least 1951 (although USS *Midway* was recommissioned on January 31, 1970, after an extensive four-year modernization). Because of the age of eight of the flattops, **two new carriers** are being built. Progress in the construction of USS *Nimitz* (CVAN-68) and USS *Dwight D. Eisenhower* (CVAN-69) continued. These new nuclear-powered attack carriers, the first aircraft carriers since USS *John F. Kennedy* was commissioned on September 7, 1968, are expected to be launched in 1972 and 1973 and to join the fleet in 1973 and 1975, respectively. Indicative of the freedom of nuclear power from fuel logistics support, USS *Enterprise* completed sea trials in January with her new nuclear re-

actor cores which contain enough energy to power her for the next 10 to 13 years.

Other carrier aviation developments during the year involved the CV and the sea control ship concepts. The **CV program** moved into full scale fleet evaluation during the summer as USS *Saratoga* tested the concept in the Med. The new concept increases the flexibility of attack carriers by integrating fixed-wing and helicopter ASW aircraft into CV operations, lessening the impact of reductions in ASW carriers.

The **sea control ship concept** became a full-scale Navy program by the end of the year. On October 29 at NAS Lakehurst, the **first sea control ship squadron**, HS-15, was commissioned with Commander William P. Franklin, commanding. The squadron, which will receive specially configured helicopters this year, is devising tactics to protect convoys and vessels beyond the protective range of carriers. Tests aboard *Guam* (LPH-9), involving HS-15 helicopters and Marine Corps AV-8A *Harriers*, are presently being conducted.

Marine aviation units completed redeployment from the Republic of Vietnam to bases in the U.S., Okinawa and Japan on June 25. Some of the final Marine air units leaving Vietnam were, in order of their departure: VMFA-115, HMM-364, VMO-2, 1st MAW Headquarters, VMA(AW)-225, VMA-311, HMM-262, HMM-263, HMH-463, H&MS-11, HML-367, HML-167, H&MS-16.

Home-port changes in the Western Pacific included the relocation of four activities from NAS Atsugi: Commander, Fleet Air Western Pacific, to NAS Cubi Point; VQ-1 to NAS Agana, Guam; VRC-50 to NAS North Island; and HC-7 to NAS Imperial Beach. NS Sangley Point was returned to the Republic of the Philippines and NAS Atsugi became an NAF under Japanese control. Patrol squadron deployments were transferred to NAS Cubi Point from NS Sangley Point.

In the Med, a detachment of **EA-6A Intruders** from VMCI-2 operated aboard Sixth Fleet carriers *Forrestal*, *Saratoga* and *America*, consecutively. Other Marine fixed-wing squadrons serving aboard carriers during the year included VMA-331 and VMFA-333 in the Med and VMA(AW)-224 off Vietnam.

Marine aircraft on loan to the Navy served in several Navy squadrons: OV-10 *Broncos* with VAL-4 in Vietnam, CH-46 *Sea Knights* were used for underway replenishment operations in various helicopter com-



Above, introduction of the Harrier (operating aboard USS Guadalcanal (LPH-7)) represents not only better close-in support of ground troops, but is also a means of adapting fixed-wing aircraft to operations aboard the smaller aviation ships and the proposed sea control ships now being evaluated. Below is a Kaman HH-2D LAMPS-configured Seasprite. LAMPS is a significant addition to the anti-submarine detection and attack capability of Navy's escort vessels.



bat support squadrons, and CH-53A *Sea Stallions* went to the new mine counter-measures squadron, HM-12. Marine helicopters suited for the vertical assault mission completed another year as the aviation component of amphibious assault ships. *Guadalcanal* (LPH-7) and *Inchon* (LPH-12) operated simultaneously in the Med.

New Aircraft

The **Tomcat**, designed for all fighter missions, including air-to-air combat and fleet defense, recorded significant milestones. On May 24, F-14A No. 2 resumed flight tests for the first time since the loss of the initial aircraft in December 1970. After tucking its variable-sweep wings toward the fuselage for the first time in flight on September 2, another F-14A made its first supersonic flight on the 16th and then surpassed Mach 2 on October 29.

After traveling from Long Island to NAS Point Mugu, *Tomcat* No. 4, with various weapons and avionics equipment installed, began flight tests on December 13.

The first phase of the naval preliminary evaluation of the F-14A, conducted at Grumman's Calverton facility, by a team from NATC Patuxent River, Md., began on November 30. Then on December 2, Commander George White, NATC, became the first Navy test pilot to fly the *Tomcat*.

By the end of 1971, nine F-14A's were assigned to various flight test programs. Purchase plans call for an eventual total of 313 aircraft—301 for operations and 12 for research and development.

First firing of the sophisticated **Phoenix** air-to-air missile from the F-14A is planned for early 1972.

Navy's newest carrier-based electronic warfare aircraft, the sophisticated **EA-6B**, entered squadron service with VAQ-129 on January 29 when BuNo 158029 arrived at NAS Whidbey Island. A major advance in the field, the EA-6B is a significant addition to the fleet.

And Navy's new carrier-based antisubmarine aircraft, the **S-3A Viking**, rolled out of the Lockheed-California Company plant at Burbank, Calif., on November 8. The S-3A, equipped with sophisticated avionics, will eventually replace the long-lived S-2 that has served the fleet since February 1954 when the first *Tracker* was delivered to VS-26.

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The arrival of the A-4M *Skyhawk* was an important contribution to Marine air and ground control capability. The A-4M is the newest version of an aircraft that first entered squadron service with VA-72 on September 27, 1956, and has since proven its ability to support ground troops. On April 20, the Navy accepted the 2,500th *Skyhawk*.

The A-4M entered squadron service with VMA-324 at MCAS Beaufort, S.C., on April 16. By year's end the squadron had received approximately 20 of the newest *Skyhawks*. Manufactured by the McDonnell Douglas Aircraft Corporation at Long Beach, Calif., the A-4M has a new self-contained starter, carries twice as much 20mm ammunition and has 20 percent more thrust (11,200 pounds). It can cruise to a target 400 miles distant at a speed of 440 knots, remain in the target area for one hour, and return to base, where, by deploying its drag chute, it can land on an expeditionary short airfield for tactical support without using the arrested landing gear.

The first AV-8A *Harrier* BuNo 158384, the first vertical take-off and landing fixed-wing aircraft ever accepted for combat duty by U.S. armed forces, was delivered by Hawker Siddeley Aviation to Major General Homer S. Hill, USMC, on January 6 at Dunsfold, England. Transported across the Atlantic, partially disassembled, by the Military Airlift Command, the *Harrier* arrived at NATC Patuxent River on January 26 for Board of Inspection and Survey trials. When the tests, which included landings and take-offs from LPD's and LPH's, were completed, deliveries to operating units of the Marine Corps began.

First squadron service began April 16 with Marine Attack Squadron 513, commanded by Lieutenant Colonel Clarence M. Baker, at MCAS Beaufort, S.C. After receiving the *Harrier*, VMA-513 began training its pilots and maintenance personnel and participated in further evaluation of the aircraft's operational and mission characteristics, including a period at the Naval Weapons Center, China Lake, Calif. At the end of the year, VMA-513 remained the only *Harrier* squadron and had nine of the unusual, capable aircraft.

Missile Developments

The first live warhead test of the air-to-surface **Condor** missile scored a direct hit



The new EA-6B *Intruder*, Navy's first aircraft designed specifically for carrier-based electronic countermeasures, is the key aircraft of the tactical electronic warfare squadrons. Below, a CH-53 *Sea Stallion* of Helicopter Mine Countermeasures Squadron 12, first helicopter squadron established specifically for mine countermeasures, prepares to lift its minesweeping gear from the deck of USS *Raleigh* (LPD-1). The minesweeping helos combine effectiveness, mobility and safety.



on the target ship, USS *Vammen* (DE-644), on February 4 near San Clemente Island off the California coast. Launched from an *Intruder*, the missile demonstrated its ability to use its guidance to blast surface targets at extended range. After the operator locked the missile on target, the direct hit was scored. Operational evaluation of *Condor*, produced by North American Rockwell Corporation, is expected to be completed in early FY 1973.

The Navy announced on June 21 the selection of the McDonnell Douglas Corporation as prime contractor for **Harpoon**, the all-weather anti-ship missile. It is being designed for launch from aircraft and ships at an extended range from the target.

In July, Navy accepted the first operational supersonic **Firebee II** aerial jet target from Teledyne Ryan Aeronautical.

Command Change

Vice Admiral Maurice F. Weisner, previously Commander, Seventh Fleet, became **Deputy Chief of Naval Operations (Air Warfare)** on September 1. He succeeded Vice Admiral Thomas F. Connolly who had charted the course of Naval Aviation for five years, since November 1, 1966. VAdm. Weisner is the eighteenth Naval Aviator to hold that position since its establishment on August 18, 1943.

In another development, all tactical electromagnetic warfare programs were placed under the coordination of Vice Admiral Frederic A. Bardshar, the **first Director of Tactical Electromagnetic Programs** under CNO, on April 15.

The establishment of **Fighter Wing One**, composed of Atlantic Fleet VF squadrons flying *Phantoms*, on July 16 at NAS Oceana, and of **Medium Attack Wing One** there on October 1, for Atlantic Fleet attack squadrons using *Intruders*, seeks to provide more direct supervision of maintenance support and personnel training keyed to a particular type of aircraft. (Light Attack Wing One for *Corsair II* squadrons was established on June 1, 1970.) These new wings supervise the replacement training squadrons for their type aircraft and assist in equipment support. As with previously commissioned special mission wings, such as RVAHW-1 and VAQW-13, operational control of the squadrons remains with the carrier air wing commander.

New Programs

LAMPS, the light airborne multi-purpose system, is Navy's program to equip frigates, destroyers and destroyer escorts with manned helicopters for antisubmarine warfare and anti-ship missile defense. The drone antisubmarine helicopter program during the 1960's employed an unmanned remotely-controlled rotary-winged aircraft that carried a torpedo but no detection gear.

Kaman's SH-2D *Seasprite* was selected as the helicopter for the LAMPS program. Carrying a three-man crew — pilot, copilot and sensor operator — it is equipped with active and passive sonobuoys, retractable magnetic anomaly detector, search radar with an antenna housing under the nose, and two Mark 44 or 46 antisubmarine torpedoes. The helicopter is capable of day, night and all-weather operation, and information from its detection equipment will be integrated into the combat information center aboard ship. Secondary missions may include reconnaissance, search and rescue, medical evacuation, personnel transfer, gunfire support and replenishment.

Although the first model of the *Seasprite* entered Navy service in late 1962, the operational application of LAMPS is new, and 1971 was an important year in the evaluation and introduction of the program.

Landings by a 12,500-pound HH-2D *Seasprite* aboard USS *Sims* (DE-1059) in November 1970 confirmed adequate ship deck strength for helicopter operations and, in March 1971, the Navy assigned 115 *Seasprites* to the LAMPS program. After completion of inspection and survey trials on October 5, the first SH-2D LAMPS helicopters to be assigned to fleet operating units were delivered to Helicopter Combat Support Squadron 4 (HC-4) at NAS Lakehurst, N.J. Helicopter Combat Support Squadron 5 (HC-5) at NAS Imperial Beach, Calif., received its LAMPS helicopters on October 13. The first overseas use of LAMPS was aboard USS *Belknap* (DLG-26) in the Med in December and aboard USS *Sterett* (DLG-31) in WestPac the next month.

Helicopter Mine Countermeasures Squadron 12 (HM-12), commanded by Commander David Humphreys, was commissioned on April 1 at NAS Norfolk and became the Navy's **first helicopter squadron devoted exclusively to mine countermeasures**. To eliminate enemy mines from sea

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lanes and amphibious assault areas, squadron helicopters tow specially designed mechanical magnetic and acoustic minesweeping equipment. They are controlled in sweeping operations from their ship or shore base by a team of personnel of the Mobile Mine Countermeasures Command. The squadron employs CH-53A *Sea Stallions* borrowed from the Marine Corps while awaiting delivery of the Sikorsky RH-53D being built specifically for mine countermeasures. Ready to sweep on October 10, after being airlifted by C-5A *Galaxies* from Charleston, S.C., to Souda Bay, Crete, a detachment of four CH-53A's from HM-12 recorded the first overseas deployment of the new unit. From November 2 to 7, the squadron participated in the first integration of airborne minesweeping operations into an amphibious assault exercise, under the operational control of Captain Wes Lindsey, Commander, Mobile Countermeasures Command. The operations were conducted from USS *Coronado* (LPD-11) with a high degree of success: all drill mines were swept prior to troop landing.

Records

The Navy's most advanced antisubmarine warfare aircraft, the land-based P-3C *Orion*, established **eight certified world flight records** in the heavy turboprop class in 1971. The record-setting aircraft, BuNo 156512, a production model with no engine or fuel system modifications, is typical of the *Orions* being used by patrol squadrons.

In the heavy turboprop class, the *Orion*, piloted by Commander Donald H. Lilienthal with a crew of eight, set the record for nonstop, nonrefueled distance on January 22 with a flight of 6,857 statute miles over the official great circle route from NAS Atsugi, Japan, to NATC Patuxent River. The flight lasted 15 hours, 21 minutes and, because of intentional avoidance of Russia's Kamchatka Peninsula, actually covered 7,010 statute miles.

On January 27, at Patuxent River, the P-3C attained a maximum speed of 501 miles per hour. At Edwards AFB, Calif., an altitude of 45,018 feet in horizontal flight was sustained for 90 seconds without deceleration on February 4; then, on the 8th, a maximum altitude of 46,214 feet was reached. The same day, the *Orion* set four records for time-to-climb to altitude, in-

cluding the initial climb from brake release on the ground to 9,843 feet (3,000 meters) in 2 minutes, 59 seconds. Certificates of record for all eight achievements were issued by the Federation Aeronautique Internationale.

In a notable flight for the *Hawkeye* in August, Commander W. O. Edberg and crew, VAW-124, flew the carrier-based early warning **E-2B non-stop across the Atlantic** on a flight from NAS Norfolk to USS *America* in the Med.

Awards

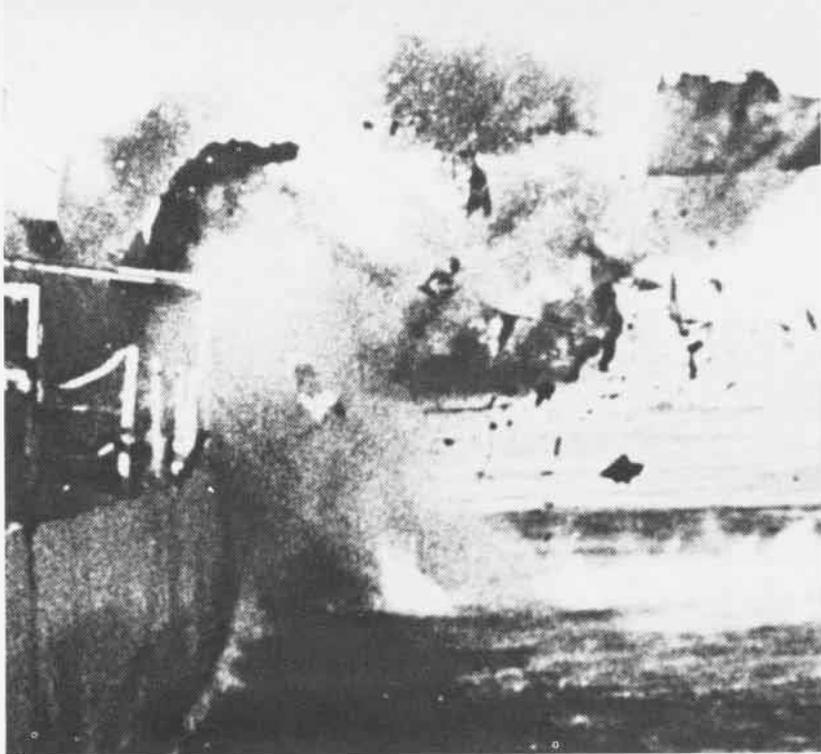
Several individual accomplishments received special recognition. PFC Raymond M. Clausen, Jr., USMC, was awarded the **Medal of Honor** by President Nixon at the White House. While serving as a helicopter aircrewman in HMM-263 in Vietnam, on January 31, 1970, PFC Clausen made six trips from his rescue helicopter under enemy fire and across an enemy minefield to extricate a platoon of Marines pinned down by enemy fire inside the minefield.

Selected as **Marine Aviator of 1971**, Major David G. Vest, USMC, became the tenth recipient of the Alfred A. Cunningham Award which is named for the Marine Corps' first aviator and was initially presented to Colonel John Glenn in 1962. While assigned to Marine Air Weapons Training Unit, Pacific, Maj. Vest was responsible for implementing a two-year program to update Marine fighter capability in the Pacific. He wrote a complicated fighter syllabus and graduated 49 air combat maneuvering flight leaders without any aircraft accidents.

In the first presentation of the **Robert G. Robinson Trophy**, Capt. John D. Cummings, USMCR, was chosen Marine Flight Officer of 1971. The new award is named for the Marine flight gunner who won the Medal of Honor in WW I for combat actions in France in October 1918. Capt. Cummings developed coordination techniques between radar intercept officer and pilot for acquiring a target and tactics for approaching an enemy aircraft undetected.

By transfer of the **Gray Eagle Trophy** on July 31, Rear Admiral Alfred R. Matter, Commandant, 12th Naval District, succeeded Rear Admiral George P. Koch as the Naval Aviator on active duty with the earliest date of designation as a Navy pilot.

Above, a Condor missile, fired by an Intruder, blasts its target, the obsolete destroyer escort, Vammen, during a live warhead test of the new, extended range, air-to-surface missile. Below, Navy frogmen from UDT-11 plunge into the Pacific to attach the flotation collar to Apollo 15, preventing the possible sinking of the crew or capsule.



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The trophy, first presented at the Naval Aviation Anniversary Ball on January 25, 1961, and retroactive to June 2, 1911, has now honored 19 Naval Aviators. In this latest transfer, the earliest date of designation advanced from January 2 to October 30, 1935.

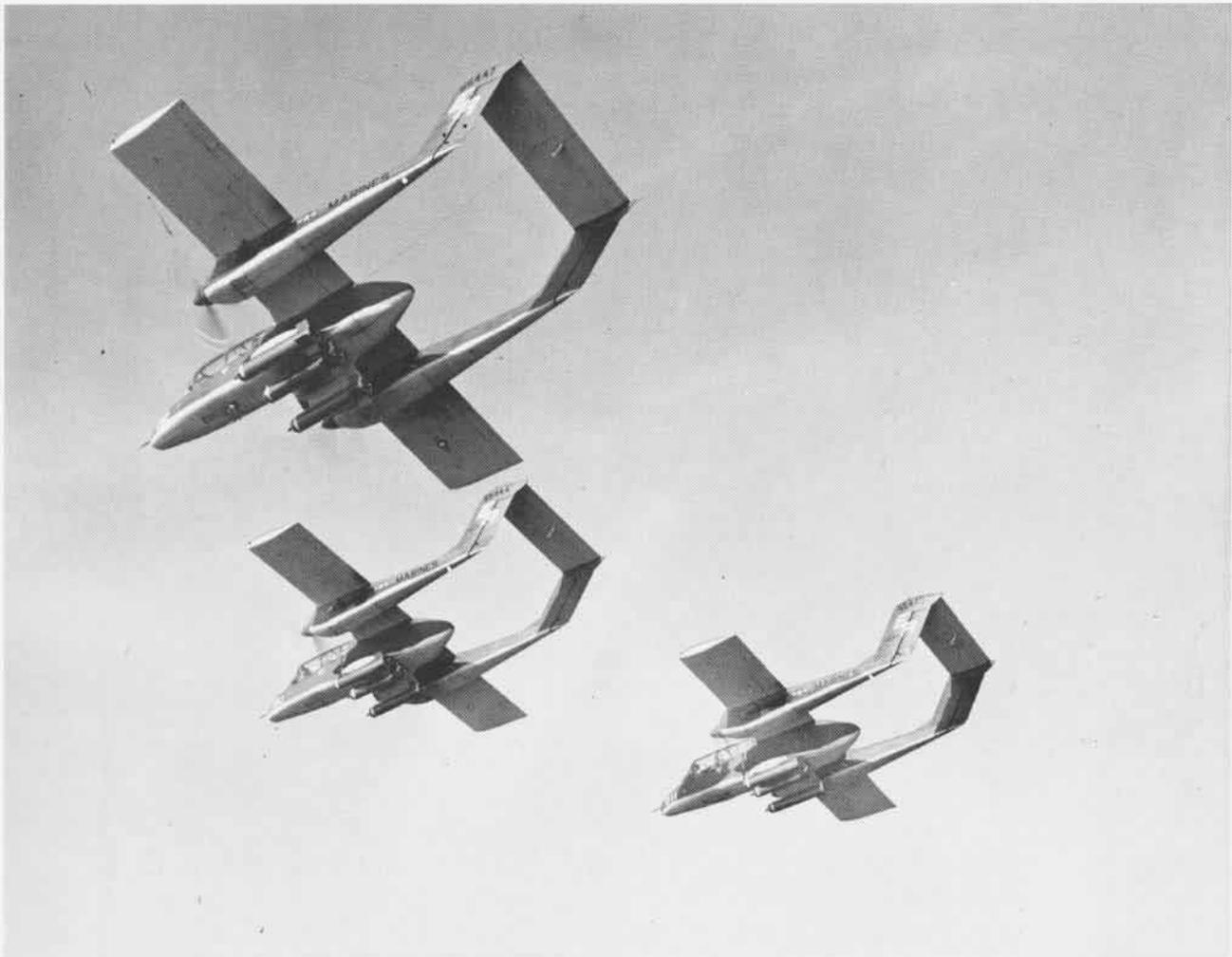
Several squadrons won significant awards for outstanding performance. HC-7 was presented the **Presidential Unit Citation** for rescue of aviators downed in Southeast Asia from September 1967 through April 1969. Operating day and night under adverse flying conditions, the helicopters of HC-7 fought off hostile ground forces attempting to capture downed aviators and saved many from death or imprisonment.

The *Stingers* of VA-113, NAS Lemoore, received the first **Admiral C. Wade Mc-**

Clusky Award as the best attack squadron of FY 71. The new award honors Clarence W. McClusky, Jr., whose command of two squadrons of *Dauntless* dive bombers on *Enterprise* (CV-6) contributed significantly to the defeat of the Japanese carriers in the Battle of Midway. During the evaluation period, VA-113 completed a successful SEAsia combat tour aboard *Ranger*, delivering nearly 7,000 tons of ordnance on enemy positions.

Rated the best fighter squadron in the Navy during FY 71, the *Fighting Falcons* of VF-96, NAS Miramar, were presented the **Admiral Joseph Clifton Trophy**. VF-96 excelled in operational readiness and flew 2,624 hours in the SEAsia war zone from USS *America*.

Hawaii-based Marine Fighter Attack



Squadron 212 was rated the outstanding Marine fighter squadron of 1970, winner of the **Robert M. Hanson Trophy**. It was cited for furthering fighter tactics and providing crews trained in air-to-air combat.

Squadrons recognized for antisubmarine warfare excellence during the competitive period January 1970 through June 1971 and winners of the **Captain Arnold Jay Isbell Trophy** were VP-49, VS-28 and HS-5 in the Atlantic Fleet and VP-48, VS-29 and HS-2 in the Pacific Fleet. HS-2 also won the **Admiral Jimmy Thach Trophy**.

In the important area of safety, which conserves the fighting strength of men and aircraft, Naval Air Force, Atlantic won the CNO Readiness through **Safety Award for FY 1971** in the major command category. The **Admiral Flatley Memorial Awards** for carrier safety went to *Kitty Hawk*, *Hancock*, *Wasp* and *Guam*.

Combining safety with efficiency, *Hancock* also won the **Burke Trophy** for improved battle readiness.

Reorganization

The **reorganization of naval air training** and the consolidation of all training under the first Chief of Naval Training, Vice Admiral Malcolm W. Cagle, a Naval Aviator, became effective on August 1. Responding to the recommendations of a 20-member Naval Training Command Board convened by Chief of Naval Operations Admiral Elmo R. Zumwalt, Jr., and headed by VAdm. Cagle, Secretary of the Navy John Chafee directed the establishment of a single comprehensive Naval Training Command with headquarters at Pensacola, Fla. This action culminated a series of hearings held by numerous boards examining the subject since it was first proposed by the Bureau of Naval Personnel in 1945.

The new Chief of Naval Training assumed supervisory command of the Chief of Naval Air Training at NAS Pensacola, the Chief of Naval Air Reserve Training at NAS Glenview, the new Chief of Naval Technical Training (previously Chief of Naval Air Technical Training) at NAS Memphis, and the newly created Training Support Com-

mand to be permanently located in 1972.

In the reorganization of naval aviation training, the Chief of Naval Air Training will no longer report directly to the Chief of Naval Operations. He received command authority over newly authorized Training Wings 1 through 8 to be established at Meridian, Kingsville, Chase Field, Corpus Christi, Whiting Field, Pensacola, Saufley Field, Ellyson Field and Glynco. In the near future, a prospective pilot reporting to the Chief of Naval Air Training will be sent, following preflight, to NAS Saufley Field for primary flight training and then to a single base for both basic and advanced flight training. The Naval Air Basic Training Command was disestablished and the Naval Air Advanced Training Command is scheduled for disestablishment.

The establishment of the Naval Training Command and the reorganization of naval air training are aimed at improved training, better cost-effectiveness and unified administration.

The new **Naval Recruiting Command** in Washington assumed nearly all aviation recruiting responsibilities from CNAResTra, NAS Glenview, on July 1. The consolidation unifies Navy's recruiting efforts and increases effectiveness under the "one-stop" recruiting concept.

Space

The *Apollo 14* flight of Alan B. Shepard, Jr., USN, Edgar D. Mitchell, USN, and Stuart A. Roosa, USAF, from January 31 to February 9, the third manned lunar landing, recorded 33 hours, 31 minutes on the moon, February 5 and 6. On the lunar surface, Shepard and Mitchell made a tiring, uphill march in a nearly successful attempt to reach the rim of Cone Crater. After splashdown in the Pacific, the crew was picked up by members of Underwater Demolition Team 11 and a recovery helicopter from HS-6 operating from *New Orleans* (LPH-11).

On December 1, Captain Alan B. Shepard became the **first Navy astronaut to attain flag rank**. He is now assigned to NASA's Manned Spacecraft Center.

The *Apollo 15* flight of David R. Scott, USAF, James B. Irwin, USAF and a Naval Academy graduate, class of 1951, and Alfred M. Worden, USAF, from July 26 to August 7, accumulated 66 hours, 55 minutes on the moon from July 30 to August 2. They

The OV-10A remained in RVN for combat use by VAL-4; the YOY-10D version was tested as a night observation gunship.

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operated from the landing site near Salyut Crater and photographed the lunar canyon, Hadley Rille. After splashing down with two recovery parachutes instead of three, the crew was picked up by members of UDT-11 and a helicopter from HC-1, operating from Okinawa (LPH-3).

Reserves

In the summer of 1971, the Naval Air Reserve which reorganized in 1970 achieved a milestone in rapid deployment of its carrier-based aircraft squadrons and wings. Attack carrier air wings (CVWR's) and car-

rier antisubmarine warfare air groups (CVSGR's) of the **Naval Air Reserve deployed aboard aircraft carriers** for training, with all their component aircraft squadrons, as the Naval Air Reserve demonstrated its capability for immediate employment of fleet size wings and groups.

Summarizing the Reservists' summer fleet exercise, Rear Admiral Howard E. Greer, Commander, Naval Air Reserve Force/Chief of Naval Air Reserve Training, stated: "They have met a realistic test and have proven their effectiveness." The Reserve deployment was of broad significance since Reserve readiness has received added impetus

FIRST CARRIER DEPLOYMENT OF THE SELECTED AIR RESERVE

Command	Units	Carrier	Dates	Location
CVSGR-80	VS's 81, 82, 83, HS's 84, 85, VSF-86, VAW-88	<i>Ticonderoga</i> (CVS-14)	July 24 to August 8	Pacific
CVWR-30	VF's 301, 302, VA's 303, 304, 305, VFP-306, VAW-307, VAQ-308	<i>Coral Sea</i> (CVA-43)	August 2 to 11	Pacific
CVWR-20	VF's 201, 202, VA's 203, 204, 205, VFP-206, VAW-207, VAQ-208	<i>John F. Kennedy</i> (CVA-67)	August 10 to 19	Atlantic
CVSGR-70	VS's 71, 72, 73, HS's 74, 75, VSF-76, VAW-78	<i>Wasp</i> (CVS-18)	August 17 to 26	Atlantic

COMMISSIONINGS

Commissioned	Date	Location
Helicopter Mine Countermeasures Squadron 12	April 1	NAS Norfolk
Helicopter Antisubmarine Squadron 15	October 29	NAS Lakehurst
Training Squadron Nineteen	August 2	NAS Meridian
Fighter Squadron 302	May 21	NAS Miramar
Fighter Wing One	July 16	NAS Oceana
Medium Attack Wing One	October 1	NAS Oceana
Training Air Wing One	August 1	NAS Meridian
Training Air Wing Two	August 1	NAS Kingsville
Training Air Wing Three	October 1	NAS Chase Field
Naval Training Command	August 1	NAS Pensacola
Naval Technical Training Command	August 1	NAS Memphis
Naval Training Support Command	August 1	Washington, D.C.
Naval Recruiting Command	April 6	Washington, D.C.

from the Department of Defense policy, initiated in 1970, of placing more reliance on the response capability of Reserve forces. Naval Air Reserve activity during the year also included VP and VR squadron service in the Med and VP operations in WestPac.

VMA-142 aircraft flew aboard *Independence* as Marine Air Reserve Aviators from several units carqualed.

Modernization of the Naval Air Reserve, begun with the assignment of a P-3 *Orion* to VP-91 on June 28, 1970, continued when the first A-7 *Corsair II*'s were assigned to VA-303's *Golden Hawks* on April 5.

Sayonara

On July 7, Commander Carl D. Neidhold flew the **last Skyraider** in the Navy's inventory from NATC Patuxent River, Md., to the flying museum of the Confederate Air Force Association at Harlingen, Texas. The last aircraft, an NA-1E, BuNo 132443, had flown over 5,700 hours since February 19, 1954, when it was delivered by Douglas Aircraft Corporation. The last *Spad* was transferred from NAS Quonset Point to NATC in November 1961, where it was flown by test pilots working on ordnance, avionic and carrier suitability projects.

DECOMMISSIONINGS

Decommissioned	Date	Nickname
USS <i>Bon Homme Richard</i> (CVA-31)	June 15	
USS <i>Shangri La</i> (CVS-38)	July 30	
Carrier Division Nine	July 1	
CVW-16	June 30	
NS Sangley Point	August 31	
NAS Atsugi (to NAF)	July 1	
Fleet Air Alaska	July 1	
Naval Air Basic Training Command	August 1	
VAP-61	July 1	<i>World Recorders</i>
VAH-123	February 1	<i>Professionals</i>
VA-144	January 29	<i>Roadrunners</i>
VA-152	January 29	<i>Wild Aces</i>
VA-163	July 1	<i>Saints</i>
VA-172	January 15	<i>Blue Bolts</i>
VF-53	January 29	<i>Iron Angels</i>
VF-162	January 29	<i>Hunters</i>
VW-1	July 1	<i>Typhoon Trackers</i>
VC-4	April 30	

CARRIER DUTY IN VIETNAM

Carrier	Units on board							
	CVW	VA	VF	VAW	VAG	HC	RVAH	VFP
<i>Hancock</i>	21	55	24	111*	129*	1*		63*
		164	211					
		212						
<i>Kitty Hawk</i>	11	52	114	114	133	1*	6	
		192	213			7*		
		195						
<i>Ranger</i>	2	25	21	111*	134	1*	1	
		113	154		129*			
		145						
<i>Midway</i>	5	56	151	115	130	1*	63*	
		93	161			7*		
		115						
<i>Oriskany</i>	19	153	191	111*	130*	1*	63*	
		155	194					
		215						
<i>Enterprise</i>	14	27	142	113*	130*	1*	5	
		97	143					
		196						
<i>Ticonderoga</i>	ASWGru-3, CVSG-59, VS's 33, 37, and 38, HS's 4 and 8, VAW-111*							

Constellation and *Coral Sea* are presently on station.

*detachment

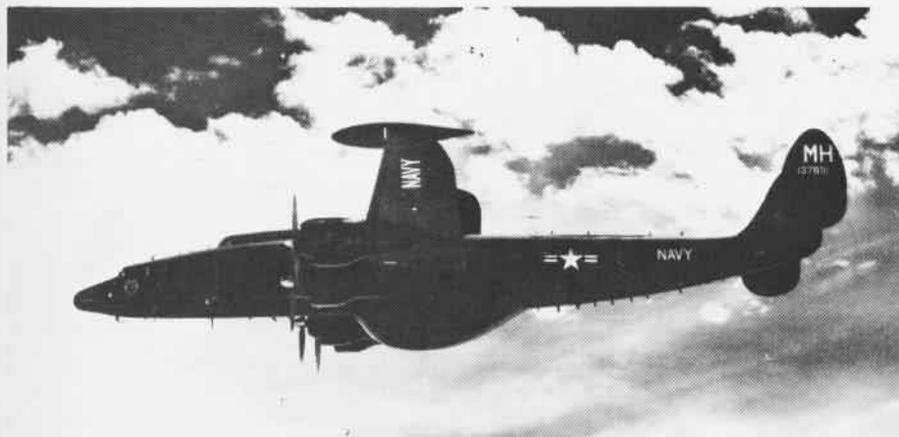
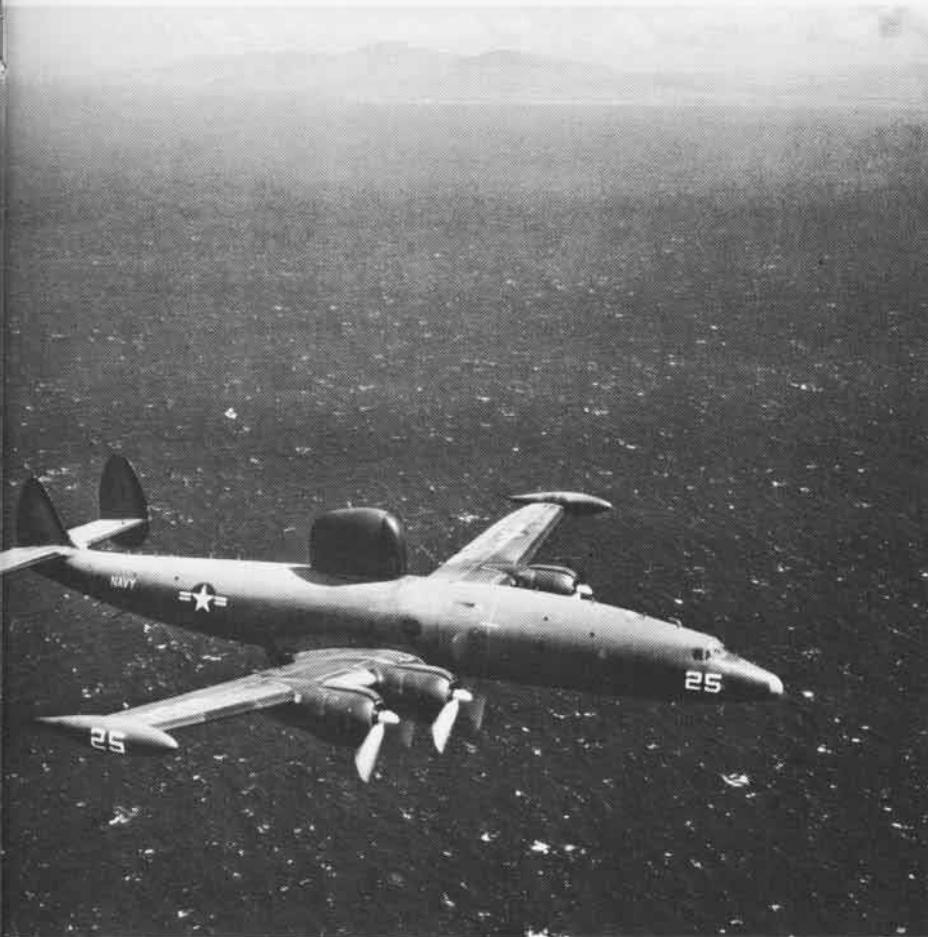
Lockheed's four-engine transport, developed during World War II, entered naval service after the war as the PO-1W.

This radar-equipped type was first investigated in 1949 when two PO-1W's, later designated WV-1's, were procured. PB-1W's (converted B-17G's) had been flown previously to test the feasibility of using aircraft for airborne early warning duties. The successful performance of these planes led to placing large orders for the follow-on WV-2 *Super Constellation* which was first delivered in 1954. This lengthened plane accommodated a larger crew and carried improved electronics equipment. A total of 142 of this model was purchased. At one time, nine early warning squadrons equipped with these planes, renamed *Warning Stars*, provided airborne electronic barrier patrols in the Atlantic and Pacific, guarding the American continent and U.S. fleet units against unexpected air attack. The WV-2 was redesignated EC-121K in 1962.

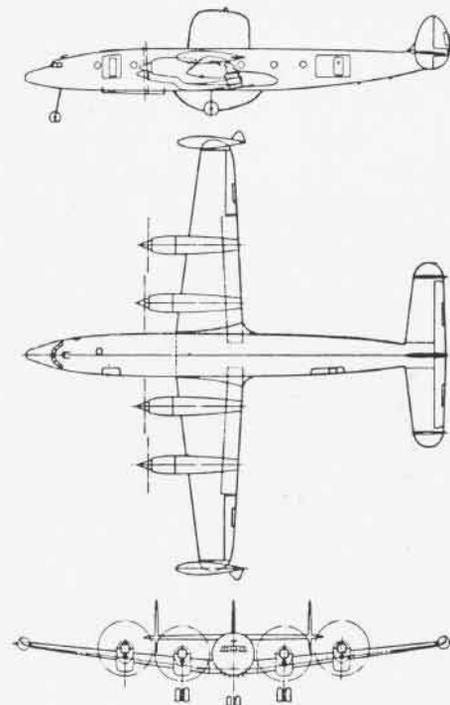
An ECM variant, the WV-2Q was produced at about the same time to conduct electronic reconnaissance missions. Some, now redesignated EC-121M's, are still in service. Weather reconnaissance models procured as WV-3's are now assigned to squadrons in the Caribbean and Pacific as WC-121-N's. They locate and track tropical weather disturbances in their areas of responsibility — actually flying into the eye of a hurricane when necessary. Individualized models, designated NC-121K's, are used by the Air Systems Command in weapons evaluation tests.



ellation



EC-121		WC-121
PO-1W		WV
Length		
EC-121		116'2"
PO-1W		97'10"
Height		
EC-121		27'0"
PO-1W		26'6"
Wing span		
EC-121		123'5"
PO-1W		123'0"
Engines		
EC-121	R-3350-42	3,250 hp
PO-1W	R-3350-75	2,500 hp
Maximum speed		
EC-121	285 kts. at 19,300 ft.	
PO-1W	269 kts. at 18,000 ft.	
Cruise speed		
EC-121	210 kts. at 10,000 ft.	
PO-1W	165 kts. at 10,000 ft.	
Maximum takeoff weight		
EC-121		156,000 lbs.
PO-1W		110,000 lbs.
Ceiling		
EC-121		21,900 ft.
PO-1W		22,000 ft.
Range		
EC-121		3,850 nm.
PO-1W		2,930 nm.
Accommodations		
PO-1W/EC-121		28 crew



at Sea with the Carriers



PH2 Burns Palmer

PACIFIC FLEET

Hancock (CVA-19)

While CVA-19 was tied up at Alameda, 30 Lowell High School students from San Francisco toured engineering spaces aboard. Ship's personnel outlined *Hancock's* inner workings to the group, members of the school's Architects and Engineers Club. Following the introductory lecture, students were shown the actual propulsion and power systems of the 27-year-old carrier.

The club is sponsored by the San Francisco District Corps of Engineers and the San Francisco Post of the Society of American Military Engineers.

Ltjg. Gene Goodrow, piloting a VA-125 *Corsair II*, recorded the 155,000th landing aboard, and ten days later, Ltjg. Chris Girard, VA-122,

counted number 156,000.

Hancock headed into the final stages of training for its upcoming WestPac cruise when it put to sea in early December for an ORI off San Diego. Prior to that, the carrier marked its 157,000th arrested landing as Commander George Fenzl, Jr., XO of VA-55, made the landing in an A-4 *Skyhawk*.

Despite the rigorous training schedule, the annual dependents' day cruise was held for *Hancock's* men and their families.

Enterprise (CVAN-65)

November 25, 1971, was a big day aboard *Enterprise*. But Thanksgiving was only the beginning. It was also the *Big E's* tenth birthday, and eight plank owners were presented tenth anniversary certificates.

The 118,000th arrested landing aboard *Enterprise* was recorded when

Lt. W. N. Thomas caught the wire in a VA-97 *Corsair II*. Lt. Thomas also made the 116,000th landing the month before.

Captain Ernest E. Tissot is commanding officer of CVAN-65.

ATLANTIC FLEET

Lexington (CVT-16)

Lady Lex, home-ported at NAS Pensacola, Fla., has gone "cold iron." She now receives all her services from four steam generators and one diesel generator installed on the pier—water, phone, electricity and steam.

The Navy's only training carrier has a new recreational facility. Officially opened by Captain Jack E. Davis, the special services photo lab is the result of ten months of hard work and planning, mostly volunteer. Besides being available to crewmen for photo proc-

essing, the lab will offer classes to beginners.

Intrepid (CVS-11)

Over the years *Intrepid* has fought many battles, the most recent being with drug abuse.

During a two-day transit between the Naval Ammunition Depot at Earle, N.J., and the Boston Navy Yard, a five-man team of civilians associated with TODAY (Treatment of Drugs Among Youth) — a narcotics agent, an attorney, an M.D., a psychiatrist and a 19-year-old former drug addict — held personal meetings aboard the carrier and conducted closed circuit TV and question/answer sessions. They spoke with uncensored frankness. Interest ran so high larger spaces had to be provided. C.O. Captain Charles S. Williams, Jr., believes that as a result "... some young sailors will forego drug experimentation as well as re-evaluate their personal worth to the organization. This will certainly enhance this ship's, and the Navy's, effectiveness."

Saratoga (CVA-60)

Weather is of major concern to all hands whether it grounds a plane or spoils a liberty. *Saratoga's* crewmen not only receive nightly weather forecasts over closed circuit TV but also easy lessons in weather terminology, courtesy of AG2 Ryan Hafer of the carrier weather service department. Since you can't get away from the weather, he feels that it is important to keep it interesting.

F. D. Roosevelt (CVA-42)

Roosevelt marked its 200,000th arrested landing when a VF-41 *Phantom* piloted by Commander Jim M. Snyder, CAW-6, with Captain Charles J. Youngblade, *FDR's* C.O., in the rear seat, touched down. This total represents 15 to 20 hours a day of hard work, for the past 26 years, by the men of V-2 division who are responsible for recovering all the planes.

A flock of TF-9J Cougars, left, belonging to VT-24, roosts in the safety of the hangar bay on board *Lexington*. Right, liberty boats are stacked on *Saratoga's* flight deck as she sails home to NS Mayport after Med deployment.

Forrestal (CVA-59)

It's a rare enough occasion when a Navy wife gets the chance to visit her husband's ship but it's rarer still when she goes *under* his ship. While *Forrestal* was dry-docked at the Norfolk Naval Shipyard, Portsmouth, Va., two groups from CVA-59's enlisted and officers wives clubs had dinner aboard and then enjoyed a "keel crawl" under the ship, qualifying them for membership in *Forrestal's* Keel-Krawler's Club.

As part of *Forrestal's* community relations program, LCdr. Sam Poidmore, senior dental officer, and other CVA-59 dentists were active in the Portsmouth City Dental Clinic's free dental care program, during the three-months the carrier was in the Navy Yard for overhaul.

Independence (CVA-62)

When Lt. Robert Scott and Ltjg. Charles Klemstine brought in a VF-102 *Phantom* for CVA-62's 150,000th recovery, they didn't know they were setting a record. The A-6 *Intruder* ahead of them had been waved off and then had to come around again for the less auspicious 150,001st landing.

A scuba diver from *Independence* performed an unusual maneuver 40 feet below the surface in order to clear an obstructed sea valve. Some obstacle was hindering the closing of a valve leading to a main condenser. Com-

manding officer Captain William N. Small explained to the explosive ordnance disposal team, TMC Hubert C. Switzler, Ltjg. J. Garvin Warden and TM2 Charles J. Middaugh, that the valve must be closed or serious flooding would result. At night, using their underwater lights in the black water, the men set to work to remove the bars protecting the mouth of the main condenser intake. Because of the heavily corroded bolts, only the first bar could be removed which left an opening of just 16 inches, too small for a diver carrying twin 90-cu. ft. tanks.

When a return to the surface seemed the only answer, Chief Switzler removed the scuba gear from his back (still breathing through the mouth-piece), pushed it through the opening and squeezed his own body through. Swimming 15 feet up into the intake, he found and removed a three-inch bolt from the gate, enabling the valve to close tightly. Chief Switzler was then pulled out by the other two divers, feet first, and the team returned to the surface after 70 minutes below.

Wasp (CVS-18)

The cake-cutting ceremony marking *Wasp's* 28th anniversary had two guests of honor — two crewmen whose fathers were part of *Wasp's* original crew when she was commissioned in November 1943, RD3 Edward P. Dutton, Jr., and SN William G. Poulin. Commanding officer Captain K. H. Lyons hosted the occasion.

PHC D. W. Shepherd





ANTARCTIC SUPPORT

Dep Freeze '72 marks the end of an era in Naval Aviation with the retirement of the last reciprocating engine aircraft in support of science in Antarctica. Beginning this season, all Navy air transportation within Antarctica will be provided by turbo-prop, ski-equipped LC-130 *Hercules* and twin-turbine UH-1N *Iroquois* from Antarctic Development Squadron Six, led by Commander C. H. Nordhill. Airlift from New Zealand to Antarctica will be provided, for the most part, by Air Force turbo-jet C-141 *Starlifters*.

Operations on the frozen continent are dedicated to peaceful, scientific research which requires a great amount of support. To meet the demands for logistic support, units of the Navy, Air Force, Army, Coast Guard, Military Sealift Command and the Royal New Zealand Air Force keep the sup-

By Capt. Peter J. Anderson, USAF

port pipeline flowing from warmer climes.

There are four phases of air operations in a *Deep Freeze* season: deployment from the United States to New Zealand, movement of cargo and passengers to Antarctica, air support within Antarctica and, finally, redeployment. All of these activities occur simultaneously throughout the season, although deployment and redeployment are emphasized at the beginning and end of the season, respectively.

Most of this support is provided by the Navy and is the responsibility of Task Force 43, Commander, U.S. Naval Support Force, Antarctica. Under the operational control of TF 43 and providing the bulk of air transportation for Operation *Deep Freeze*

within the Antarctic is VXE-6, home-based at NAS Quonset Point, R. I.

The squadron has three *Hercules* transports and six *Iroquois* helicopters, a change from last season when it counted five LC-130's, two C-121 *Super Constellations*, three UH-1D *Iroquois* and five LH-3D *Seahorses*. After accidents destroyed a C-121 (and one LC-130), the second *Super Connie* was retired. The UH-1D's and LH-34D's were replaced by the new twin turbine UH-1N's which provide a greater safety margin.

The change from a mix of turbine-powered and reciprocating engines to

Life and survival in the Antarctic are not easy as crewmen of this LC-130, who spent 80 hours on the ice, can testify (see p. 27). Above, Adelie penguins at Hallett Station.





At left, crewmen from VXE-6 attach JATO bottles to the fuselage of an LC-130 Hercules. JATO provides the extra lift needed to get the fully loaded aircraft off the ice and into the sky. After an hour and a half on the ice at Amundsen-Scott South Pole Station (with temperatures at minus 48 degrees), passengers embark aboard LC-130.

turbine-powered aircraft will simplify support and maintenance. Aviation gasoline will no longer be needed as both aircraft use JP-4; spare parts for only two different types of aircraft, instead of four, will be maintained; and maintenance personnel will need to be qualified only in turbine engines.

Air operations between the U.S. and New Zealand during the early season deployment were completed via MAC *Starlifters* and chartered commercial airlines.

VXE-6's *Hercules* made their first flights of the season on October 8, followed two days later by the first of more than 40 *Starlifter* turn-around flights between Christchurch and the ice runway of Williams Field, McMurdo. On October 14, air operations were suspended due to a massive storm that closed Williams Field for four days, covering the area with more than 20 inches of snow and producing a wind-chill factor of minus 109 degrees.

As the effects of the storm were cleared, the flights resumed. Passengers and priority cargo arrived at Christchurch ten times during October. The cargo was sent south and two days later, after being outfitted with Antarctic clothing, the passengers followed. Within the continent all flights, with the exception of local transport and field support in the McMurdo

area, are conducted by LC-130's. Approximately 2,540 hours and 2,900 short-tons of cargo/passengers are scheduled for airlift by the squadron's *Hercules* in support of inland stations.

Direct support of scientific projects will account for almost 1,700 flight hours: over 600 hours provided by LC-130's; 430 hours by UH-1N's; the remainder flown by Coast Guard HH-52's operating from icebreakers.

Air operations in Antarctica are, to understate the conditions, unique: airfields are made of ice, hangars are non-existent. While both Byrd and South Pole Stations are equipped with precision approach radar (PAR), landings are made on 14,000-foot prevailing-wind skiways. At Siple and Brockton Stations, open field landings are made with the only available aids, radar corner reflectors. Hallett Station has a 6,000-foot skiway with minimum markers and a low frequency homer. Williams Field consists of the main skiway, an ice runway which seals bore through in late December and early January—and an emergency runway on the ice shelf at Outer Williams Field. Both the main skiway and Outer Williams Field are serviced by PAR; the ice runway has airport surveillance radar. Tacan and ADF radio homers are available at Williams Field runways and skiways.

When intense storms hit the McMurdo-Williams Field area and normal landings are impossible, a ski-equipped *Hercules* can make an instrument landing on pre-surveyed clear areas of snow, 20 miles long. After landing, the aircraft, using internal radar and Tacan, taxis to the Williams Field complex.

Other factors test the abilities of VXE-6 aviators, including a lack of weather reporting facilities. There are only 30 reporting stations on this continent, the size of the United States and Mexico combined. Pilots fly by pressure patterns and sun lines with the polar grid—an artificial system that designates the Greenwich Meridian as north regardless of where you are on the continent. In addition to this unique navigation, frequent communications blackouts caused by solar storms add to the aviation hazards.

When the *Hercules* is used to insert and support a remote field party, certain procedures are followed. Arriving at the site for a proposed field party camp, the LC-130 will make a low level pass to inspect the landing surface for possible crevasse danger. This is followed by a powered pass to drag the snow surface with the main skis. If no hazards are evident, the aircraft will land and, all engines running, discharge its passengers and cargo.

While a shelter is constructed to house the field party and radio contact is established with McMurdo Station, the *Hercules* taxis back and forth to create its own skiway for takeoff. Then JATO helps get the aircraft airborne and headed for home.

Maintenance is also a problem in Antarctica. All work is performed outdoors and the cold takes its toll. Engine changes take many more hours. When the undercarriage of an aircraft needs work, standard jacks are rejected; the weight of the airplane would force the jack into the snow, preventing lift. The solution: inflating air bags under the wings to lift the fuselage off the surface.

Procedures had to be developed to compensate for the continent's climate: engines are pre-heated prior to starting; aircraft ground power units are fitted with nicad batteries to defeat the energy-sapping cold.

SOP calls for cessation of all aircraft operations when the temperature reaches minus 65 degrees. This is when seals in the aircraft systems begin to lose reliability.

Helicopters face an additional and unique hazard when operating in dry snow areas. During landings, rotor-downwash can whip up the snow, enveloping the aircraft and causing severe visual landing limitations. To counter this problem, instrument flight rules are applied.

In addition to supporting U.S. research at six widely separate locations on the five and one-half million square miles of continent, VXE-6 supports international projects.

The International Antarctic Glaciological Project (IAGP) is a ten-year study of the ice sheet of East Antarctica by scientists from Australia, France, the U.S. and the Soviet Union.

During the Antarctic summer, 16 French scientists were scheduled to complete a traverse from Carrefour—a small French station 25 miles southwest of the main base camp of Dumont d'Urville to a point halfway to the Soviet Union's Vostok Station.

This project involved two types of support from the squadron: first, transporting 16 scientists and technicians, 5,300 pounds of cargo and ten drums of gasoline to Carrefour by way of McMurdo; second, establishing five 25-barrel gasoline depots along the planned route of the traverse.

In connection with the IAGP, the



The damage to the LC-130 Hercules was extensive. Note inboard engine and landing gear.

80 HOURS ON THE ICE

MCMURDO STATION, Antarctica—An LC-130 *Hercules* belonging to VXE-6 was declared a "complete loss" after two JATO bottles separated from their mountings and caused extensive damage to the port engines. The incident occurred when the pilot started to take off after depositing fuel and supplies for a French expedition attempting a 500-mile traverse from Carrefour Station to a point midway to Russia's Vostok Station.

There were no injuries to the crew, but because of blowing snow and high winds, it was nearly 80 hours before rescue could be accomplished.

At the time that the two 165-pound JATO bottles traveled for-

ward and struck the inboard port engine, the aircraft had just lifted off the snow in an open terrain takeoff. The loss of power caused the aircraft to swerve in that direction. Upon striking several rough, hardened snow dunes, the nose wheel collapsed and the aircraft came to a halt.

While waiting for rescue, the ten crewmen, who lived in survival tents near the French traverse party, experienced temperatures of minus 25 degrees and winds of 40 mph, creating a wind-chill factor of minus 100 degrees.

All usable parts will be stripped from the plane and it will be abandoned, 750 miles from McMurdo Station.

Scott Polar Research Institute of Cambridge, England, will conduct an airborne ice thickness survey using one of VXE-6's *Hercules*. This ice-sensing program, tested briefly in Greenland in September, consists of recording equipment mounted inside the aircraft and two large antennas mounted beneath the wings—a 300-megahertz antenna beneath the left wing, and a 60-MHz antenna beneath the right wing. Radio signals are transmitted through the ice, bounced back by the earth's surface and received as sig-

nals by the antennas. Thus, the configuration of the earth's surface beneath the ice can be determined by the pattern of the returned signals.

These are but a few of the projects supported by the men and aircraft of VXE-6, operating during a 5½-month "summer" at the bottom of the world.

Capt. Anderson is an Air Force information officer assigned to the Naval Support Force, Antarctica as technical editor of the *Antarctic Journal of the United States*.



Operation 'Deep Furrow'

Late last year, Marines from the 2nd MAW joined forces with other U.S. units and units from Great Britain, Greece, Turkey and Italy for the week-long NATO exercise, Operation *Deep Furrow-71*. The exercise was conducted in the barren Turkish countryside near the border of Greece and Bulgaria.

As part of the 8th Marine Amphibious Brigade, elements of the 2nd were called on to support amphibious landings and aid in the seizure and defense of the beachhead and linkup with Turkish forces.

The scenario for the operation went like this: Turkey and Greece had been attacked by the country of Orange. The homeland armies were holding along defensive lines but were unable to repel the numerically superior Orange forces.

Operating from USS *Guadalcanal*

(LPH-7) and USS *Inchon* (LPH-12), helicopters from HMM's 261 and 264 transported assault troops ashore to seize prominent terrain features in order to ensure the rapid establishment of the landing forces ashore.

Preparatory naval gunfire and air strikes along the beaches by Turkish and Marine aircraft opened the way for an amphibious assault by 4,800 U.S. and United Kingdom troops. Operating from USS *America* (CVA-66), VMFA-33 provided part of the air support in the objective area. Coordination of aircraft strikes, helicopter flights and gunfire support was conducted through the tactical air command and supporting arm's coordination centers aboard USS *Mount Whitney* (LCC-20), an amphibious control center.

The day following the assault, command of all air control in the exercise

area was passed ashore to Provisional Marine Air Group 40 which was composed of MACS-5, detachments from MWCS-28, MASS-1, and C Battery, 3d LAAM Battalion.

Ashore, ProvMAG-40 was putting new theories to the test. For the first time in Marine Corps Aviation history, the direct support and the tactical air operations centers were joined in one unit. The successful combination of these air control elements aided in the continuing effort to improve the versatility of Marine Corps units by enabling the units to do the same job with less equipment and fewer people. Additionally, a detachment from MACTU-63, with two Tacan radar sets, was included within the framework of the aviation group. As a result, 44 men, 90,000 pounds and 8,500 cubic feet of equipment were not needed for the journey to Turkey.



HMM-264 UH-1N comes in to ProvMAG-40's landing zone at Erikili, Turkey, during Operation Deep Furrow, opposite page. At left, a mechanic repairs a CH-46 tail rotor aboard Inchon. Communicators from ProvMAG-40 field test a new high frequency radio, below, and bottom, Marines come from the beach.



Providing the bulk of men and equipment that made up ProvMAG-40 was MACS-5 which, in addition to its normal air control functions, was also responsible for the establishment of the 8th MAB base camp and served as the administrative unit for ProvMAG-40.

Because of bad weather delays en route to Turkey, ProvMAG-40 arrived at Saros Bay, Turkey, three days late with very little time to move ashore to establish a camp and set up air control agencies. But, according to MACS-5's commanding officer, Maj. Bruce W. Driscoll, "Because of the men's superlative, back-breaking work, we were actually operational ahead of time."

The 2d MAW's commanding general, Major General George C. Axtell, said of the overall exercise and the performance given by elements of his command, "Based on the comments of senior commanders of the joint forces, the operation was extremely successful. All of our equipment—radar, radios, etc.—operated as advertised. I think the enthusiasm and the talent of the people there made for a very successful operation."



Experience Still a Good Teacher

The A-4 *Skyhawk* resembled a huge insect whose body had been dissected and the parts moved to opposite ends of the hangar. Young men with the college look about them were swarming over the various parts, inspecting every bolt and making technical repairs and adjustments. One group replaced defective wiring in the fuselage. Another checked the landing gear hydraulic system. A third inspected the aircraft's armament system.

LCdr. George D. Meyers, maintenance officer of VA-305, nodded toward the aircraft, "It used to be unusual to see Naval Air Reservists entrusted with a complete maintenance check. Last year it would have been active duty instructors doing the actual work while the Reservists observed. . . ."

The end of his sentence was drowned out by the roar of another *Skyhawk* taking off for a simulated air strike in the Arizona desert. The plane was carrying a payload of 500-pound water-filled bombs which had been loaded on the aircraft by Reservists — another job previously left to active duty instructors.

But crucial responsibilities are not saved for the instructors in the new Naval Air Reserve, at least not in VA-305, one of 19 activities composing Naval Air Reserve Forces, Point Mugu, Calif.

Since forming 18 months ago, the squadron, manned on weekdays by a minimal active duty crew and on weekends by both active duty and Selected Air Reserve personnel, has been devoting half of each drill weekend to on-the-job training in addition to the usual classroom instruction.

"This gives our men a sense of achievement along with practice experience. It builds self-confidence and that is an important part of readiness," explains LCdr. Meyers.

The training program has worked so well that all aircraft maintenance duties were entrusted to enlisted Reservists during the squadron's December drill weekend. They supervised the maintenance shops and performed all work on the single-engine *Skyhawks*. They also serviced the aircraft and loaded them with ordnance for the practice air strikes. Active duty per-



THE SELECTED AIR RESERVE

sonnel were involved only as inspectors.

"Teaching weekenders to handle operational responsibilities is the only way that optimum readiness can be achieved under the squadron concept," LCdr. Meyers points out.

The squadron concept sets rigid standards of readiness not easily attained by squadrons whose ground crews are trained only in theory.

In announcing the concept, Rear Admiral Howard E. Greer, Commander Naval Air Reserve Force/Chief of Naval Air Reserve Training, challenged every Reserve aviation squadron to be in such a high state of readiness that, if recalled to active duty, it could outperform any fleet squadron operating the same types of equipment, within 60 days.

VA-305 has been providing an increasing amount of aerial support for the Regular Navy at Point Mugu.

The squadron has the only *Skyhawk* at Point Mugu that is compatible with the TPQ-10 ground control bombing

device. LCdr. Ronald V. Boch flies it over the bombing range and brings it to the correct air speed. Then a unit of the Marine aviation detachment picks him up on radar, takes command of the aircraft by radio control and releases the bomb load when the aircraft is exactly in the right position for a hit. The Marines relinquish control only after the bombs are released.

LCdr. John H. Carnefix, active duty OinC for the squadron, has little trouble generating enthusiasm in his personnel — only in harnessing it.

Admiral McCain Trophy

Fighting 201, NAS Dallas, has claimed the Admiral John S. McCain Trophy for excellence. The award was presented during the American Fighter Pilots Association's convention in Denver.

Making the presentation was Rear Admiral Lawrence Heyworth, Jr., Deputy Chief of Staff for Military Assistance Logistics and Administration, Pacific. Accepting for the squadron was Commander John P. Lamers, skipper.

This was the first time the award has been given, but the American Fighter Pilots Association plans to make it an annual award to the outstanding Naval Air Reserve fighter squadron. Selection will be based on a review of the past year's record, overall squadron operations and contributions to civic functions.

Training Cruise

Reserve Training Unit 51, Unit 2, led by Commander Robert I. McPherson, flew its C-118's to Barbers Point, Hawaii, Pensacola, Fla., and Offutt AFB, Neb., during its two-week training cruise.

Attached to NARTU Whidbey Island, the unit has the primary responsibility of training replacement pilots, crewmen and maintenance men for Transport Squadron 51.

The cruise accomplished its goals: efficient maintenance of aircraft, 200 hours of flight time (109 air hours had been programmed), and qualification of six pilots, three navigators and one aircrewman. Training time on the ground consisted of 300 hours of maintenance, safety and specialty.



AW2 Larry Wodenka, in the bow of an SP-2H Neptune, spotted the Russian Juliet-class missile submarine, above, which he said "appeared to have a new paint job and looked as if it had just come out of overhaul." Of his job Wodenka says, "It's just like having your very own cinerama movie theatre."

Deployment to Rota

Rear Admiral Howard E. Greer, Commander, Naval Air Reserve Force, said, "The new Naval Air Reserve program is going to go where the action is because the name of the game is 'increased readiness' and that is just where the Reserves have been going."

While the Reserve VA/VF community has been making a name for itself with carquals with the fleet, the Reserve VP community has been augmenting the Sixth Fleet and realizing firsthand the extensive "presence" of the Soviet Fleet in the Mediterranean. Reserves spend their two-week active duty constructively, serving with the active Navy. The aircraft crews observe Russian warships, merchant ships and submarines while the rest of their squadron works hard to keep them flying at NAS Rota, Spain. This duty has not only been very rewarding, but it has definitely increased Naval Air Reserve readiness and experience.

Some Reserve crews have been together for ten years and their coordination reflects this. Those flying the SP-2H affectionately malign it with such phrases as "it's older than our ECM operator," but the majority love it. Many of the crewmen have flown the Neptune in Vietnam and respect its durability.

Commander Dale R. Fernandez, plane commander of a VP-66 crew, when he heard the officer in charge of the intelligence detachment at Rota praise the quality of his crew's reconnaissance photos, pointed out that the P-2 is an excellent platform.

AOC Don Gault, who took the submarine pictures, was worrying about the right filters because the haze was like fog that day. Chief Gault has been flying ASW patrols since WW II and taking pictures from the Neptune for 15 years. He was recalled with VP-933 during the Cuban crisis and his pictures of IL-28 aircraft and missiles on Soviet merchant ships were seen all over the country.

Cdr. Fernandez formerly served in VP-23 at NAS Brunswick and VP-16 at NAS Jacksonville. His copilot is Lt. Ron Merrill who served in a fleet P-3 squadron. The crew thoroughly enjoyed tracking a Russian Juliet submarine in the Mediterranean.

In this particular crew, LCdr. Dick Demott is the navigator. He was credited with four and a half Zeros in WW II and wears the Navy Cross. Several years ago his eyes forced him to the Nav table. TACCO was LCdr. Lane Litka who had flown many hours in fleet P-3's before coming to the

Reserve program. He commented, "Patrolling the Mediterranean with fleet squadrons is ideal training and very exhilarating when you are working with Russian submarines. The foreign liberty doesn't hurt either."

The submarine was first sighted by AW2 Larry Wodenka, but sightings are old hat to him. He was once commended for sighting a downed civilian aircraft in the Southern California mountains while on a routine Reserve training flight. "I have thoroughly enjoyed my years in the Reserve program and I am extremely proud to be a part of it," he says. "I'm proud of the Reserves. I'll never forget when we landed after a rough ASW patrol during a combined Reserve/Fleet ASW exercise off the East Coast and a group of enlisted men were waiting on the ramp to talk to our first class radio man — even though it was after working hours. They wanted to meet him because he had been sending messages on CW all day with his speed key so fast that they couldn't believe it."

Another crewman is AX2 Nick Imperato, the ECM operator. He has just finished college and is now in training as an air intelligence officer. He commented, "This deployment is what I've been training for."



T-39 Goes to VA-122 For Replacement Training

LEMOORE, Calif. — To enhance its ability to train *Corsair II* replacement pilots, VA-122 has added the twin-jet T-39 to its inventory of A-7C/E's and T-28B/C's.

The *Sabreliner*, originally built as a medium range passenger plane, was modified at NATC Patuxent River, Md., to incorporate *Corsair II*-type, ground-mapping APQ-126 radarscopes in the cockpit and passenger areas.

During a training flight, the *Sabreliner* carries a pilot, a radar training officer and three replacement pilots over a specially designed training route; each pilot operates the radar exactly as he will in later A-7E flights.

Each T-39 mission results in the same amount of radar training previously gained by three A-7E sorties.

TAOC Training at MAC-6

MCAS CHERRY POINT, N.C. — The Marine Corps has purchased a new aviation training device designed to simulate an air warfare situation. Designated the 15A/9, it will be used to train air defense and air control operators, eliminating the need for actual tactical aircraft now used. The first trainer, housed in a trailer van, was recently delivered to Marine Air Control Squadron Six.

Utilizing a digital radar simulator, it is connected to the Tactical Air Operations Center which is composed of a series of radars. Students are presented with up to 60 targets in various combinations and have the opportunity to learn interception without the expense of using real aircraft.

Repair Plan Rewarded

QUONSET POINT, R.I. — Commander Louis H. Fisler of the Naval Air Repair Facility has been awarded the Navy Commendation Medal for the development of a new procedure to

determine the appropriate level of repair for aeronautical material.

Through the commander's multi-phased plan, aeronautical material repair is performed systematically at whatever level or state is most practical, taking into consideration the full range of Navy repair and rework points, the life-cycle cost of the material and its operational necessity.

The accompanying citation reads, in part: "In his position as operations research analyst, he developed and perfected the analytical model; wrote the aeronautical requirement document; and effectively convinced government and industry users of the logic in using the procedure. The aeronautical requirement has been specified in four new aircraft procurements and the procedure has been applied to many existing equipments, resulting in documented savings of over seven million dollars."

Memorabilia for Museum

PENSACOLA, Fla. — A Naval Aviation legacy has been donated to the Naval Air Museum at NAS Pensacola by Rear Admiral Thomas J. Hamilton, USN (Ret.).

RAdm. Hamilton's memorabilia of Naval Aviation during WW II include plans, orders, directives, personal correspondence (signed by such notables as Admirals Nimitz and Halsey) and pictures connected with preflight training and carrier activities in the Pacific. In addition, there is a scrapbook on five preflight school classes from NAS Pensacola.

Persons desiring to donate items to the Naval Air Museum should contact Rear Admiral John M. Thomas, Chief of Naval Air Training, at NAS Pensacola, who also serves as executive manager of the museum.

New Navigation Syllabus Being Taught at VT-29

CORPUS CHRISTI, Texas — VT-29, a unit of the Naval Air Advanced Training Command, recently instituted a completely modernized navigation syllabus tailored to fleet needs.

The modernization process has substantially changed the curriculum, shifting the emphasis to electronic systems as the primary means of naviga-

tion. Students will continue to learn celestial navigation and, in addition, will receive 45 hours of academic instruction in Doppler, inertial and air mass computer systems. De-emphasized or deleted are outmoded techniques such as pressure-pattern and grid.

In conjunction with the introduction of the new syllabus, inflight navigation training for newly designated multi-engine aviators was resumed. The inflight portion of the pilot syllabus was originally suspended a year ago when the squadron was providing flight support for VT-10 at Pensacola. Although this commitment still remains, the recent streamlining of the NFO program has sufficiently reduced the training load to allow practical inflight training for aviators in keeping with the needs of the VP, VR, VQ and VX communities.

There are plans to replace the squadron's T-29's and C-117's. This will complete the modernization and make the present syllabus responsive to fleet needs into the mid-80's.

Naval Aviation News Survey

During the past few years, several changes in style and emphasis have been introduced in *Naval Aviation News*. We have not noticed any particular reaction to these innovations and, while hoping that they have been favorably received, we would like to ensure that we produce a publication which best serves the needs of the Naval Aviation community.

Therefore, you are asked to complete and return the questionnaire on the opposite page. If the questions do not adequately cover all areas of interest to you, please add any comments you feel are appropriate.

Since each copy of *NAVNews* is read by a number of people, and many of them may also wish to express their opinions and desires, submission of reproduction copies of the questionnaire is authorized and encouraged. Please ensure that other readers have access to the questionnaire so that they may make copies for presenting their own views.

Naval Aviation News Survey

Rate or Grade _____
 Type of Unit _____
 Job in Unit _____
 Age _____

8. Naval Aviation News' strongest points are:
 Information Cover design
 Pictures Layout Format
 Writing style

Others: _____

1. Do you read Naval Aviation News? Yes No
 How often? Every month Most always Occasionally

2. How many people see and read this copy of NANews? _____

3. How much of Naval Aviation News do you read?
 100% 75% 50% 25%

4. Which regular features do you enjoy most?

- | | |
|---|---|
| <input type="checkbox"/> On Patrol | <input type="checkbox"/> Operations |
| <input type="checkbox"/> Naval Aircraft | <input type="checkbox"/> Squadron Insignia |
| <input type="checkbox"/> Editor's Corner | <input type="checkbox"/> Letters |
| <input type="checkbox"/> News and Views | <input type="checkbox"/> At Sea with the Carriers |
| <input type="checkbox"/> Grampaw Pettibone | <input type="checkbox"/> Individual organizations |
| <input type="checkbox"/> Selected Air Reserve | <input type="checkbox"/> Aircraft/Weapons development |

5. Which types of features do you enjoy most?

6. Naval Aviation News increases my knowledge of the Naval Aviation program Greatly Some Not at all

7. The style of writing in Naval Aviation News is:

- Easily understood Semi-technical
 Too difficult to understand

Comment: _____

9. Naval Aviation News' weakest points are:

- Information Cover design
 Pictures Layout/Format
 Writing style

Others: _____

10. I would like to see more stories on

- Ship activities Aviation support facilities activities
 Air station activities Research, test and development
 Squadron activities Humorous incidents
 Other _____

11. When was the last time you or your unit submitted an article or story idea to Naval Aviation News?

- Less than 3 months One year
 Six months Never

12. What was your latest story submission? _____

13. Please list other aviation publications that you read:

14. Use this space for any criticism or constructive ideas that you may have:



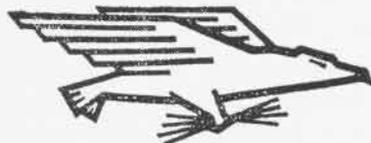


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Navy Takes A Look

Story and Photos by JOC Dick Benjamin

Will a new aircraft destined for the Navy's air arsenal do what is expected of it? Long before BIS trials begin, a Navy team of test pilots, engineers and technicians put the first planes off an assembly line through the paces in order to provide the initial answer.

Known as a Navy Preliminary Evaluation (NPE), such a check of the F-14 was recently made at Grumman's Calverton test facility on the eastern tip of Long Island by a 23-man team from Naval Air Test Center, Patuxent River, Md.

"NPE team objectives are to determine any gross deficiencies in an aircraft that might limit its performance," says the F-14 NPE team leader, Commander George W. White, Jr., "and to

give some insight into its combat potential." To complete this almost monumental task in a relatively short period of about two weeks, each team member spends long hours checking an aircraft's flying qualities, performance, and carrier and mission suitability. Any deficiencies found are listed by priority, with recommendations to the manufacturer as to how they should be fixed.

The number of phases in a preliminary evaluation (held several months apart) is set in the contract. The *Tomcat* NPE consists of three phases; other aircraft could have more or less.

All tests on an aircraft are done within a limited envelope recommended by the manufacturer and ap-





On the previous page, LCdrs. E. W. Brown, left, and R. E. Tucker preflight the F-14; Brown is in the cockpit, top. On this page, pilots perform touch-and-go's in the Tomcat.

proved by the Naval Air Systems Command. Before the team goes on to test an expanded envelope, checks are made during the previous phase have been corrected. Anything found wrong during the final phase must be corrected before BIS trials can begin.

Whenever possible, the same people are assigned to every phase of an NPE. The transfer of a team member to a new duty station is the primary reason for any replacement. This policy eliminates any redundancy in tests done during the various phases and has proven quite cost effective. New members will be added to look at additional aspects of the aircraft.

Work on an NPE begins well in advance of the team members' arrival at a manufacturer's test site. The manufacturer's progress in putting the aircraft together must be evaluated to determine if the plane is ready for the NPE, and a list of tests to be completed must be compiled. (After every test, a report must be made on the results.)

A minimum of 30 flights was called for during phase one of the *Tomcat's* NPE. The two aircraft involved were loaded with instrumentation for telemetry checks. Grumman's automated telemetry station, monitoring the F-14

tests, immediately provided information to pilots and engineers on 450 parameters. These included such things as air speed, attitude, engine temperature, exhaust gas temperature, hydraulic pressure and rate of fuel consumption.

Doing the flying qualities and performance tests during the first phase of the F-14's evaluation were Cdr. White and Maj. William D. Bauer, USMC.

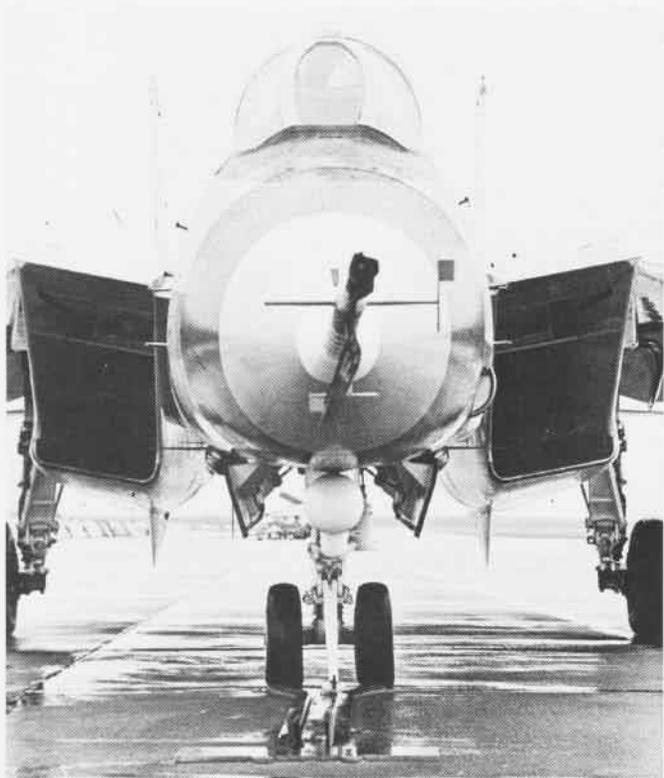
"Stability and control analyses are of primary importance during these tests," says White. "We also do a general functional analysis of all installed systems." During the many flights required to get the job done, the test pilots check the *Tomcat's* performance during acceleration, ascent, descent, near stall, takeoff and landing. An initial physical and operational compatibility analysis between the engine and airframe is also made.

LCdrs. R. Eugene Tucker and Emory W. Brown were tasked with checking the aircraft's carrier suitability.

"The number of flights required to complete the carrier suitability tests is determined by the complexity of the aircraft," explains Tucker. "The more complex the plane, the more flights needed to get the job done."



In catapult spotting tests made by the Tomcat evaluation team, the launch bar must slide easily into the nose tow track. Guiding LCdr. Tucker in the F-14 is Lt. Mark Welford.





Some of the things he and Brown were on the lookout for include any difficulty in launching the plane and its flyability in heavy weight condition off a catapult. During long hours of touch-and-go flying, they also noted how the plane handles during landing, keeping a close eye on approach air speed and attitude. From these tests they can determine how easy or difficult it is to control the aircraft on the glide slope and make any necessary corrections. Landing tests are done on both automatic approach and with the pilot on the stick and throttle.

Other areas of interest to them included any difficulty in spotting the aircraft on a catapult or taxiing away from arresting gear, and its maneuverability around a flight deck.

Commander Bruce H. Ashley and Capt. Gary L. Post, USMC, flew the mission suitability tests. Their tasks were no easier than any of the others.

"We take a close look at the human

factors," says Ashley, who was in on the Navy evaluation of the F-111, "as well as component reliability and maintainability and the like." Some of the human factors Ashley speaks of include finding out if there is sufficient headroom in the cockpit, checking the pilot's visibility and the accessibility of the controls.

The various systems within the aircraft — propulsion, hydraulics, fuel, etc., — must also be checked, for reliability and maintainability. AQCS David G. Orwig and AMCS John R. Rixon, the only two enlisted personnel attached to the *Tomcat* NPE team, were tasked with looking at the F-14 from the maintenance chief's viewpoint.

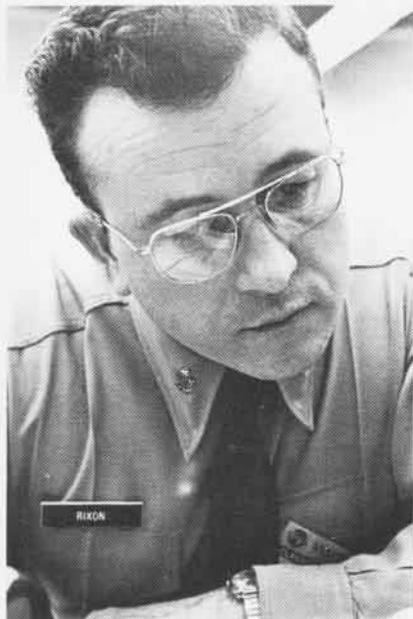
"We first must determine how reliable the systems are," explains Orwig, "and then determine if a sailor on a ship or air station can handle the maintenance."

Determining system reliability was



NPE team member monitors test information in telemetry station, top. Rixon, Orwig, Post and Ashley discuss ground lock provisions on nose gear, above. White discusses *Tomcat* with Captain Alex G.B. Grosvenor, F-14 Navy advisor in DOD Research and Engineering, top right. Rixon and LCdr. Harv G. Gregoire, seated, check crew body clearances in the *Tomcat* cockpit, right. Opposite, Rixon ponders a report, and an unusual view of the F-14.





easily done by checking the maintenance logs after each flight to see what problems the pilots had. Minor adjustments are expected on a new plane, but the chiefs watched closely to see how often similar adjustments were needed. They then watched Grumman personnel do the required maintenance to see if there was anything a sailor couldn't do.

Orwig and Rixon also reviewed the maintenance publications to see if they contained enough of the right information, and they had to determine if the ground support equipment for the F-14 was common to that used for other aircraft that might be on the same carrier.

In every area of the Grumman facility that involved the F-14, NPE personnel could be found in the telemetry station monitoring instrumentation checks; in the hangar measuring, talking with supervisors and maintenance people or just plain watching; on the flight line and parking ramp; in conference with Grumman officials; in team briefings; or in the NPE office doing reports. By the end of phase one, the aircraft had been gone over from nose to tail.

A post-NPE briefing between team members, Grumman, NATC and Nav-AirSysCom officials shed the first light on the big question—will the aircraft do what is expected of it?

But there is much more to come before the Navy is finally satisfied that it has the complete answer.



Letters

Challenge

Fighter Squadron 33 issues a challenge to readers of *NA News* with its modest array of Excellence and Safety Awards. The world renowned *Tarsiers* won the Atlantic Fleet Battle Efficiency Award in three consecutive periods (1968-1971) while at the same time accumulating the Naval Aviation Safety Award seven out of the last ten years (1962, 63, 64, 65, 68, 69 and 71).

Triple E Thirty-Three is justly proud of its record and believes it to be unmatched in fighter, Naval Air, or aviation history. Any takers?

H. J. Parry, Lt.
PAO, VF-33
FPO New York 09501

"With friends like this. . ."

The November 71 cover of the S-3A is a sight to behold, roaring off into the blue spouting smoke and pollutants galore. We have enough problems now without advertising future ones. With friends like this . . .

Mark Starr, Capt.
Staff, COMFAIRSDiego

Artistic license is one thing, but we must admit Artist Watts clouded the issue with his depiction of the S-3 which, in reality, features smokeless engines.

First UH-1N Rescue

NAS ALAMEDA, Calif. — What is believed to be the first rescue of a downed pilot by a UH-1N occurred here recently.

A VA-22 pilot landing an A-7 experienced difficulty in stopping the aircraft. The *Corsair* left the end of the runway and went into an estuary, while the pilot ejected and landed uninjured in the water approximately 150 feet from shore.

Practicing landings and takeoffs at a nearby helicopter pad, a UH-1N went to the rescue. Its crew, consisting of the pilot, Lt. W. C. Gamble, his co-pilot, Lt. Terry N. Crawford, and ADR2 L. P. Lamborn, made the rescue. The entire operation was completed in less than five minutes.

Naval Aviation Films

The following motion picture films are among the latest released by the Film Distribution Division, U.S. Naval Photographic Center. They deal with specifics in Naval Aviation.

MN-10682A (unclassified) *P-3 Instrument Flight—Flight Planning*. The importance of and how to plan a cross-country instrument flight using high and low altitude procedures (25 minutes).

MN-10897 (unclassified) *Flight*. Naval aircraft soar to the beat of an all musical modern jazz sound track (8 minutes).

MN-10927 (unclassified) *Basic Aircraft Hydraulic Systems*. Basic operating principles for any hydraulic system (15 minutes).

MH-10278L (unclassified) *Eagle Eye Bravo*. The role and mission of the aerial observer in locating the enemy in RVN (14 minutes).

MH-10588A (unclassified) *Marine Air Command Control System—Introduction*. An overall view of the system (15 min.).

MH-10588E (unclassified) *Marine Air Command Control System—TAOC Weapons Controller*. Operator training for weapons controllers (23 min.).

MH-10588H (unclassified) *Marine Tactical Data System—Troubleshooting the TAOC* (21 min.).

MN-10858 (unclassified) *ASW Helicopter Attack Procedures*. Procedures for attacking a submarine utilizing nuclear and conventional weapons dropped from helicopters (24 min.).

MN-10928 (unclassified) *No Ice Please*. Types of ice formations, conditions under which they occur and icing effects on airframe structures, aircraft engines and intakes (15 min.).

MN-10985 (unclassified) *Bullpup Weapons System in ASW Aircraft*. Function of the *Bullpup* weapons system (15 min.).

MN-11013A (unclassified) *Walleye Weapons System—Ordnanceman Handling*. Handling, checkout and loading *Walleye* aboard aircraft (23 min.).

MN-11013B (unclassified) *Walleye Weapons System—Pilot Training*. Mission planning, preflight inspection, system testing and arming, and airborne operation (22 min.).

MN-11018 (unclassified) *Enemy Territory, USA*. 2D2 electronic warfare training device (20 min.).

MN-10783A (unclassified) *Marine Air Traffic Control*. Operations of a MATCU during a flight to MCAS New River, N.C. (20 minutes).

MN-10971 (unclassified) *Testport*. Mission of and services provided by the Naval Air Test Center, Patuxent River, Md. (29 minutes).

Instructions for obtaining prints of newly released films are contained in OpNav Instruction 1551.1E.

Reunions

The 19th reunion of former crew members, squadron personnel and Marines who served in *Lexington* (CV-2) from 1927 to May 8, 1942, when she was sunk in the Battle of the Coral Sea, will be held in San Diego, Calif., at the Town & Country Hotel, June 21-24. Keynote speaker will be Rear Admiral Marvin P. Evenson, USN (Ret.), gunnery officer in *Lex* 1934-1937. Write to: Walter D. Reed, 5410 Broadway, Oakland, Calif. 94618.

A ten-year reunion of the Berlin call-up is being planned by the former members of VX-861. All former members who are interested in holding, and in attending, such a reunion are requested to contact LCDr. John L. Humber at 101 Oleander Road, Chapel Hill, N. C. 27514. Any information regarding the current addresses of former members is also desired.

The U. S. Naval Test Pilot School will hold its 24th annual symposium and reunion on May 13, 1972, at the Naval Air Test Center.

The school, one of only four in the Free World, trains experienced aviators, naval flight officers and engineers as engineering test pilots and test project engineers.

USS Bunker Hill (CV-17)
June 20-July 2, 1972
Chicago, Ill.

For information write: Dan LoRusso, 317 Main Street, Medford, Mass. 02155.

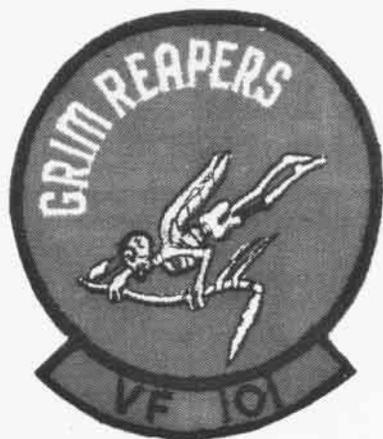
A reunion of former Navy men who flew in the Aleutians from Dutch Harbor to Paramushiro as part of Patrol Wing Four is being planned for August 17-20 at Oak Harbor, Wash.

We need help in making this a real success. There were approximately 2,000 Navy men who flew in PBV and PV crews from such bases as Dutch Harbor, Cold Bay, Umnak, Adak, Amchitka, Shemya and Attu. Help us locate them. Check squadron rosters, your Christmas card files and local telephone books for old Aleutian friends. Right now we have about 180 names on our mailing list and we don't want to miss anyone. Send us names, current or last known addresses and WW II squadron affiliations.

Jack "Ole" Haugen
Flight Plane Captain, VP-43
196 Lake Drive
San Bruno, Calif. 94066



The Grim Reapers of VF-101, NAS Oceana, Va., train replacement pilots, RIO's and enlisted personnel in the maintenance and operation of Atlantic Fleet F-4's. Commissioned May 1, 1952, VF-101 assumed the old VF-10 Grim Reaper name. In 1958 it transitioned to a training unit. Commander James McArdle is the present C.O.





NAVAL AVIATION

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(story on page 5)