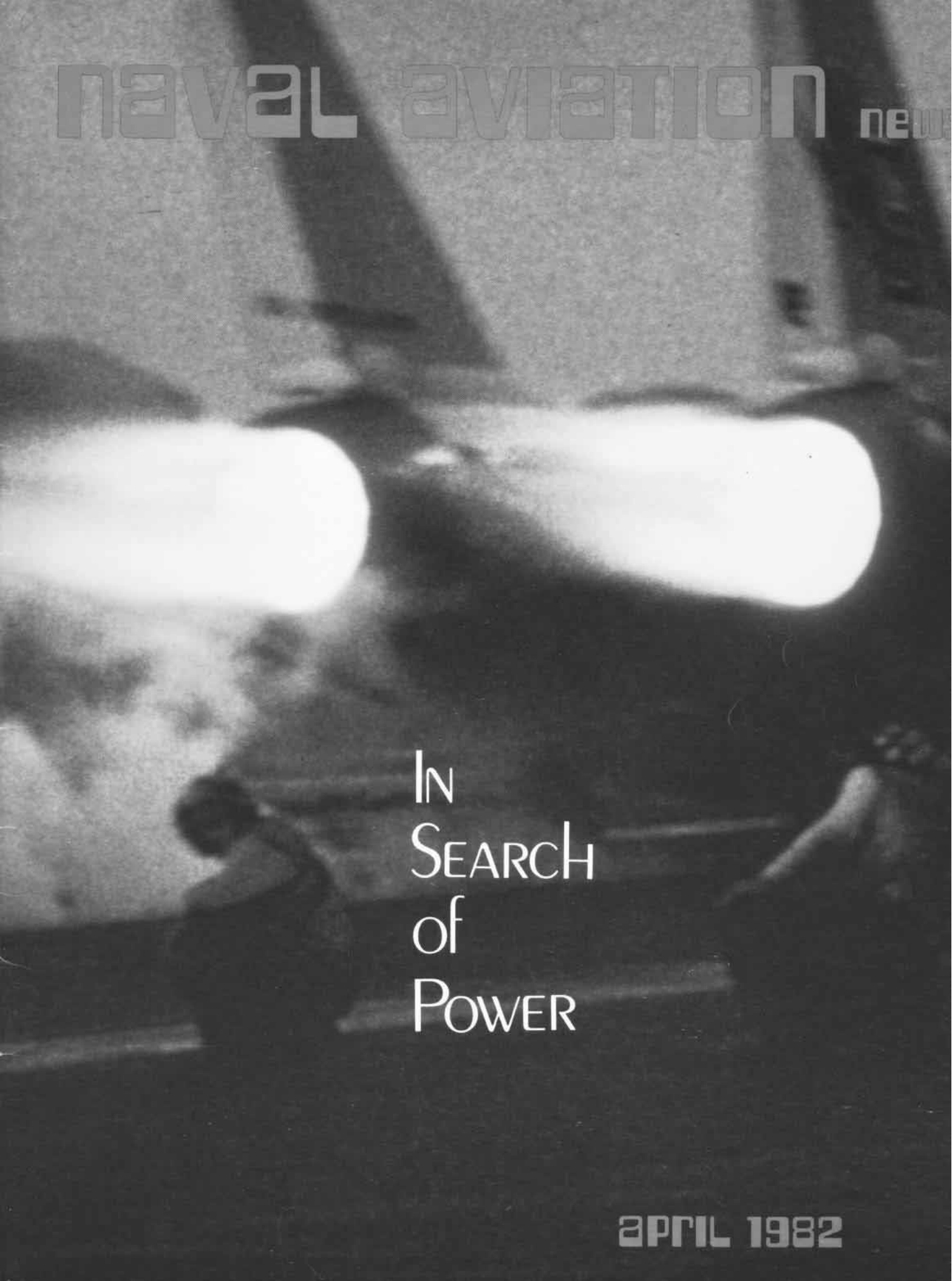
naval aviation news



In Search of Power

april 1982

A C-2A COD aircraft readies for takeoff from Kitty Hawk. Soon the C-2A Greyhound will return to production, as a result of a recently approved contract with Grumman Aerospace Corporation.

naval aviation news

Sixty-Fourth Year of Publication

Vice Admiral W. L. McDonald Deputy Chief of Naval Operations (Air Warfare)
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In a fiery display of power, an F-14 flexes its muscles on the cat.

Grumman Aerospace

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STATE OF THE ART

C-2A Contract Awarded

Assistant Secretary of the Navy (Shipbuilding and Logistics) George A. Sawyer, acting for the Secretary of the Navy, awarded the Navy's first multi-year aircraft procurement contract to Grumman Aerospace Corp., Long Island, N.Y., on February 5, 1982. The FY 82 contract obligates $30,100,000 for advanced acquisition for FY 82 procurement of the C-2A. It is anticipated that the total multi-year contract will cost $680 million. Initial production of the aircraft will begin in 1983, with deliveries of eight aircraft per year from 1985 to 1988, and seven in 1989. The contract is expected to save the Navy at least $58 million, comparing the cost with that of five annual contracts.

The C-2A *Greyhound* is the Navy's largest carrier on-board delivery aircraft. It delivers essential supplies, repair parts, personnel and other high priority cargo to deployed carrier battle groups. It has a range of up to 1,375 nautical miles and can carry 10,000 pounds of cargo.

Work will be performed in Grumman's Bethpage, Long Island plant. The Naval Air Systems Command, Washington, D.C., is the contracting activity.

Hornet Engine Tests

The General Electric F404 turbofan engines installed in F/A-18 *Hornets* are undergoing an accelerated service test (AST) program at the Naval Air Test Center, Patuxent River, Md. Here, the equipment is exposed to typical service-use conditions at an accelerated rate in a controlled test environment. Periodic inspections are performed to assess the impact of the test or the durability and suitability of the equipment.

The *Hornet* F404 AST is a 1,000-hour program, the first 500 hours to be flown by McDonnell Aircraft Company and the remaining 500 by the Navy. The current AST aircraft, BuNo 161248, is a full-system *Hornet* capable of air-to-air and air-to-ground weapons delivery. While exercising the F404s during the flight profile, the AST pilots also gain valuable hands-on-throttle-and-stick and weapon system experience which can be applied to further testing and evaluation of the airplane.

F/A-18 night high-power run test. Scott Cool

The XH-59A ABC demonstrator was designed and built by United Technologies' Sikorsky Aircraft to evaluate the feasibility of the ABC rotor system through flight testing as a pure helicopter, and at high speed in the auxiliary propulsion mode using side-mounted jet engines.

Advancing Blade Concept

Sikorsky's advancing blade concept (ABC) research demonstrator, XH-59A, recently completed a five-year, 155-hour demonstration flight test program under contracts jointly funded by the Army and Navy. Advantages sought in the ABC system are improved maneuverability, low noise level, high hover efficiency and the ability to maintain high helicopter speeds at high altitudes.

The ABC, one of Sikorsky's major research and development aircraft programs, uses two counter-rotating rigid main rotors mounted one above the other on a common shaft. This system permits the advancing side of both rotor discs to generate lift, offering the potential for 300-knot speeds in a rotary wing aircraft, without the need of a wing to offload the rotor. The need for the conventional helicopter torque-countering tail rotor with its associated drive train and gear box is eliminated.

In addition to the recent Army and Navy contracts, the research program has also received partial funding from the National Aeronautics and Space Administration. The Air Force contributed the XH-59A's two Pratt & Whitney J60 engines used in the test program. It is hoped that the ABC will prove to be a solution to a variety of future military and commercial V/STOL applications.

Navy Space Subspecialty

The Navy Space Symposium, sponsored by the Chief of Naval Operations and National Academy of Sciences, recently addressed the implications of space for future naval operations and the developing space programs in the Navy. The symposium provided a forum for increasing public awareness of the Navy space program.

In his address, CNO Admiral Thomas B. Hayward announced the creation of a new Navy space subspecialty. A board will convene in the fall of 1982 to select the first space subspecialists. Details will be published in an OpNav notice in the spring of 1982. A curriculum leading to a master's degree in space science is also being developed by the Naval Postgraduate School. Further information and admission requirements will be provided in a forthcoming revision of the Postgraduate School catalog.

During the three-day conference held at the Naval Postgraduate School, Monterey, Calif., there were more than 700 attendees from Navy, aerospace industries, the academic world, Department of Defense and other government agencies. The list of distinguished speakers included the Honorable Richard Delauer, Under Secretary of Defense for Research and Engineering; NASA astronaut Captain Robert Crippen, USN; Admiral Isaac Kidd, Jr., USN(Ret.); and Vice Admiral Kinnaird McKee, Director, Office of Naval Warfare.

Grampaw Pettibone

F-8 Superdrone

The pilot was scheduled for his second familiarization flight (Fam 2) in the F-8H *Crusader*. A lieutenant commander was assigned as chase pilot for the afternoon hop and the brief was conducted accordingly.

Some thunderstorms were observed in the local area. The decision was made that the Fam 2 could be conducted within the necessary parameters (VFR conditions). The weather forecast for return was 4,000 broken, 25,000 unbroken, seven miles' visibility, winds at 140 degrees, 10 knots, and thunderstorms in the vicinity.

The pilot launched but, because of possibly deteriorating weather conditions, the squadron duty officer (SDO) was directed by higher authority to issue a weather recall to the Fam 2. Chase assured the SDO that the flight would have no difficulty returning VFR and requested permission to remain in the touch-and-go pattern, weather permitting. This request was granted providing winds were favorable for the Fam 2 touch and go's.

Chase decided the pilot could make some practice approaches to burn down to landing weight. He instructed the tower to inform him if the crosswind increased. Tower rogered and advised that the thunderstorm appeared stationary.

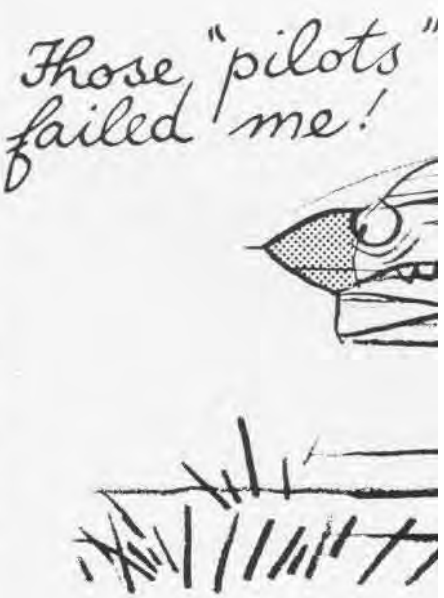
After about 10 minutes, touch and go's began. Runway 17 was in use and the wind varied from 220 degrees at four knots to 270 at 12. After several landings the wind was reported 270 at 16. Because of the crosswind limitation on the F-8H, chase informed the pilot of a possible field arrestment.

He then directed the pilot to make a low approach on his next pass to allow more time to evaluate the gusty wind conditions. The wind was again reported 270 degrees at 16 knots. The low approach was completed and the tower now reported winds 270 at 10. Realizing that winds were again within aircraft limits, chase directed the pilot to make a full stop on his next pass. The pilot commenced the approach with winds 270 at 16 and chase directed a touch and go vice a full stop. Following the completion of this touch and go, the chase pilot directed the next pass to be an arrested landing.

The duty runway had two approach end arresting gears and two long field arresting cables located at 6,000 and 7,000 feet from the approach end of the runway. The pilot commenced his approach and touched down approximately 500 feet short of the number one arresting gear and rolled into the gear. The *Crusader* hook skipped both short field wires and the pilot executed a go-around.

During the next approach, chase was flying on the starboard side at the four o'clock position approximately 100 feet aft. Because a short field arrestment was not briefed, chase found it necessary to refresh the pilot's memory on this procedure while airborne. With wind 270 at 14, the aircraft touched down approximately 500 feet from the first arresting gear. According to chase, the aircraft attitude appeared normal and approach procedures were satisfactory. The pilot stated that he left approach power on the aircraft during his ground roll. Once again, the F-8 boltered both wires.

Chase quickly directed the pilot to take it around. The F-8 became airborne well past midfield. The *Crusader* left the runway in a nose-high condition, fishtailing. Some witnesses said the aircraft was over-rotated. Others described the aircraft as on the edge of uncontrolled flight. The pilot said that he felt the aircraft start to settle



ILLUSTRATED BY Osborn

and, 17 seconds after the bolter call, he transmitted: "I've got something. This thing's not flying." in the same moment, the pilot selected afterburner and an estimated one second later, he ejected.

The aircraft rose 20 feet. The pilot ejected at about 15 feet. After ejection, the aircraft continued 600 feet, touched down and engaged the number four arresting gear, 1,000 feet from the end of the runway. The aircraft touched down approximately 30 feet from the number four arresting gear cable and came to rest near the left side of the runway. The pilot's seat functioned normally. The pilot landed in a lake along the port side of the runway and was rescued uninjured. The aircraft sustained limited damage.

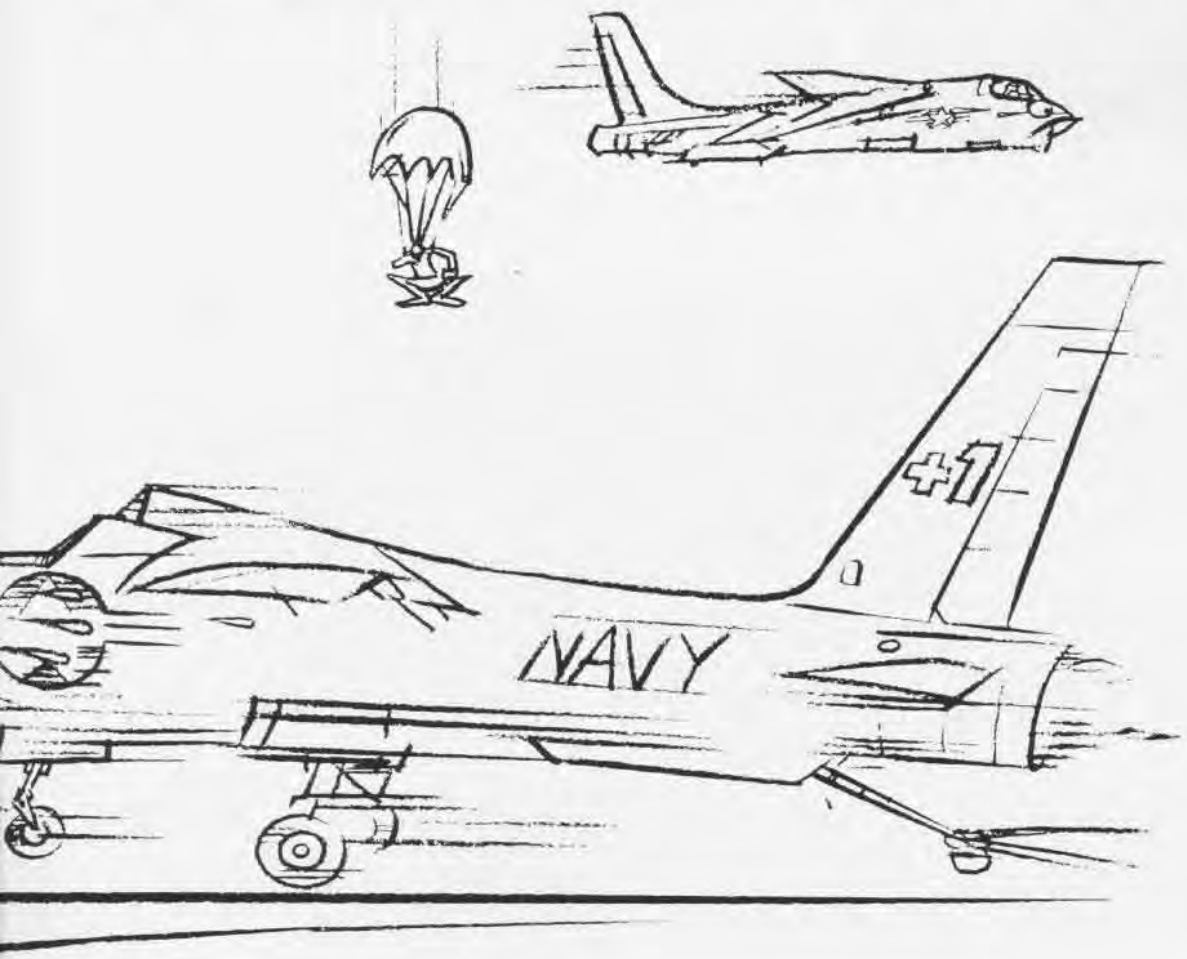
Grampaw Pettibone says:

Sufferin' catfish! This one takes the cake! I frankly must admit that this aircraft did a heck of a lot better without the pilot.

It was pretty interesting to note that field arrested landings were not briefed because "they weren't in the book." In other words, "Do only the minimum required." Baloney!

What was "in the book" was that an "LSO should be on station during attempted arrestment." However, this was very quickly rationalized away. I don't recall seeing or hearing about a Natops change submission or a waiver request on the subject of LSO during field arrested landings. Seems to me that there is something called complacency in this squadron.

(Reprint from *NANews* January 1976.)

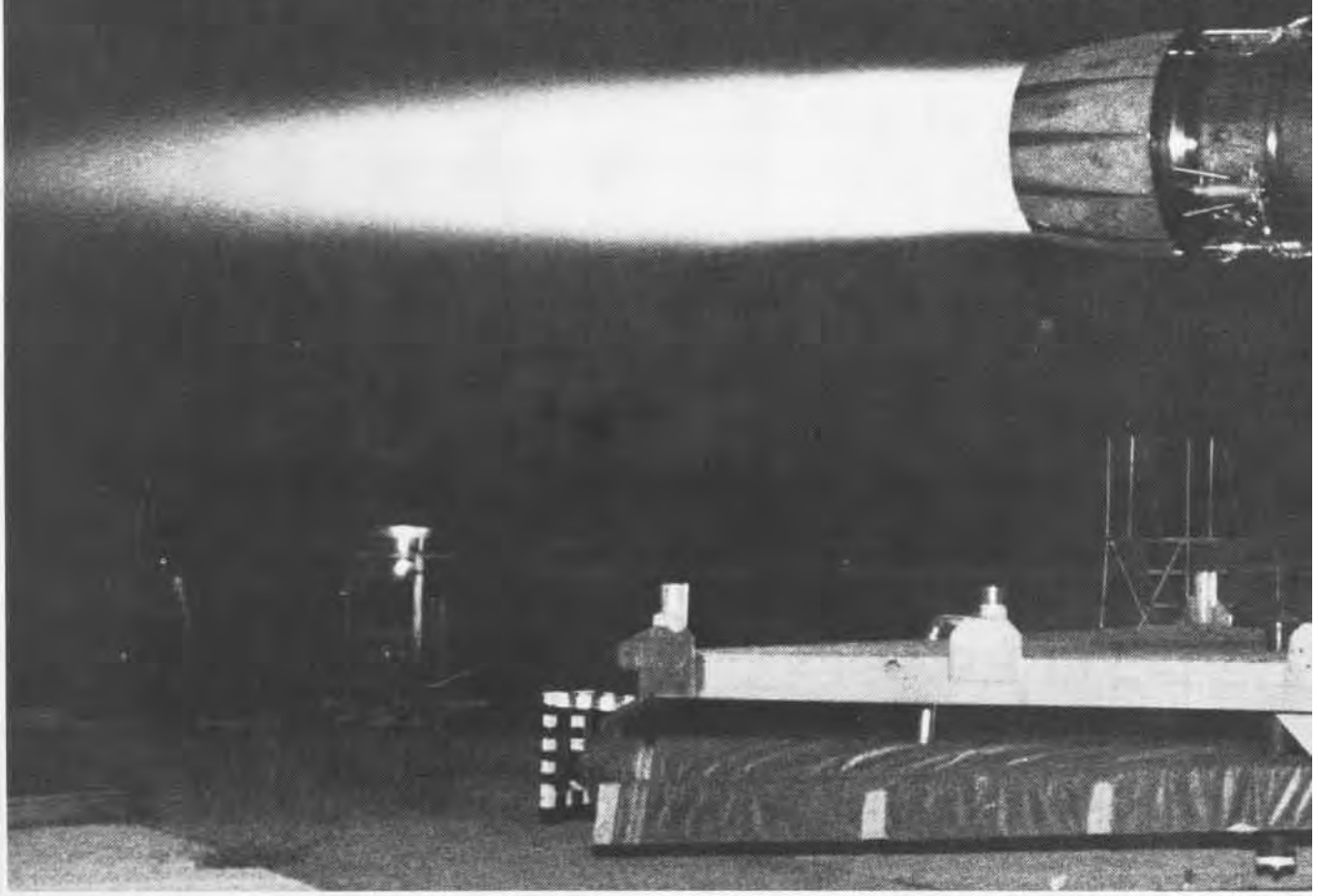


IN SEARCH

World War II was still in progress when, in 1944, the Navy Bureau of Aeronautics completed initial studies which established that new test facilities were required to keep pace with developments in gas turbine engines as the power plants for future Navy aircraft. Existing facilities at the Aeronautical Engine Lab (AEL) in Philadelphia were deemed inadequate to test projected turbojet engines. Consequently, an aeronautical turbine lab was proposed and a site at Trenton, N.J., was selected in 1948. The 80th Congress agreed and authorized $22,750,000 for the facility. A contract for its design and construction was signed the same year.

Secretary of the Navy Francis P. Matthews commissioned the Naval Air Turbine Test Station (NATTS) on July 1, 1951, and Captain W. T. Hines was assigned as the first commanding officer. From that beginning, the Naval Air Propulsion Center was developed to meet present and future needs of the Navy.

Construction of NATTS was completed in 1954. At this time, the facility was staffed and equipped for



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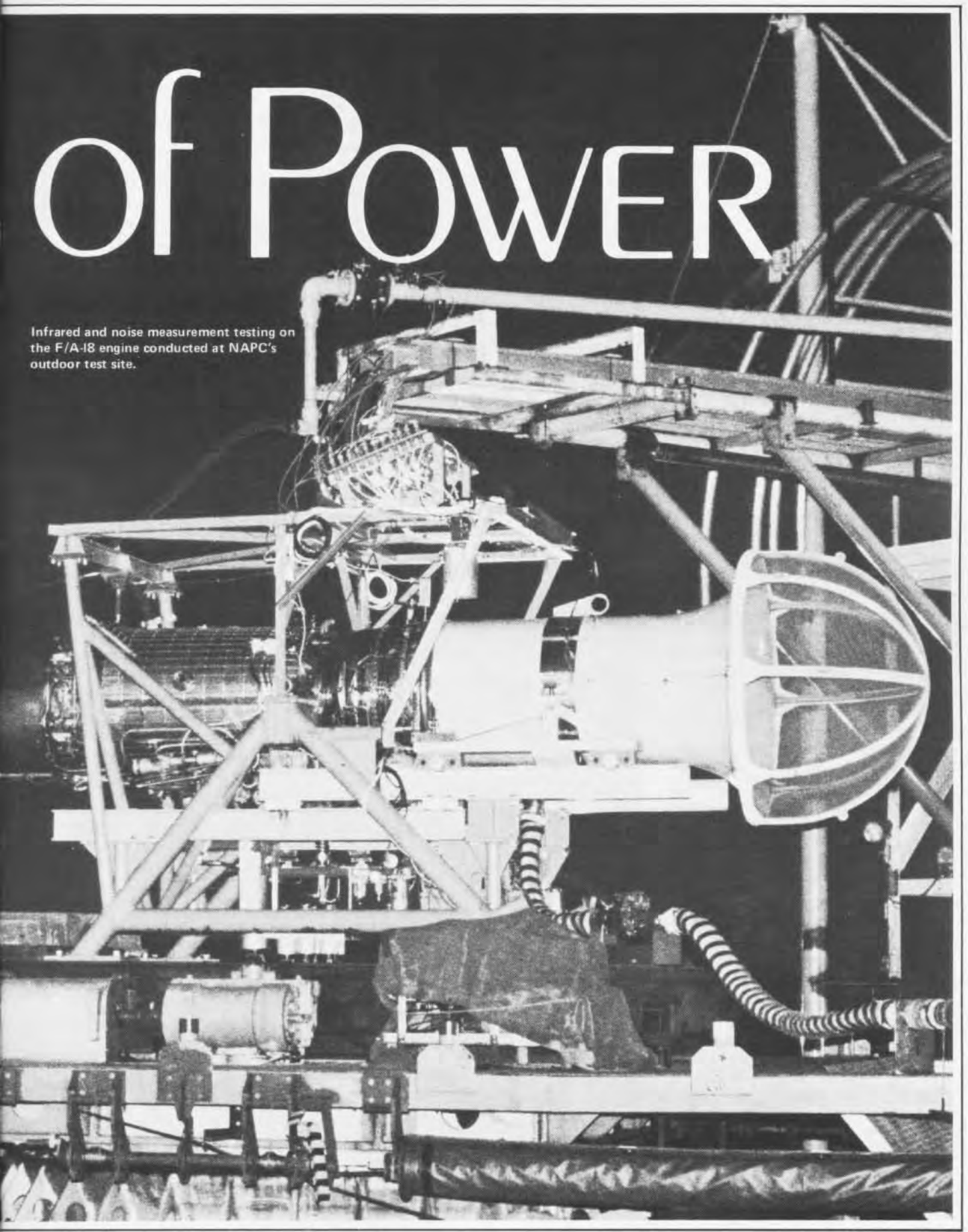
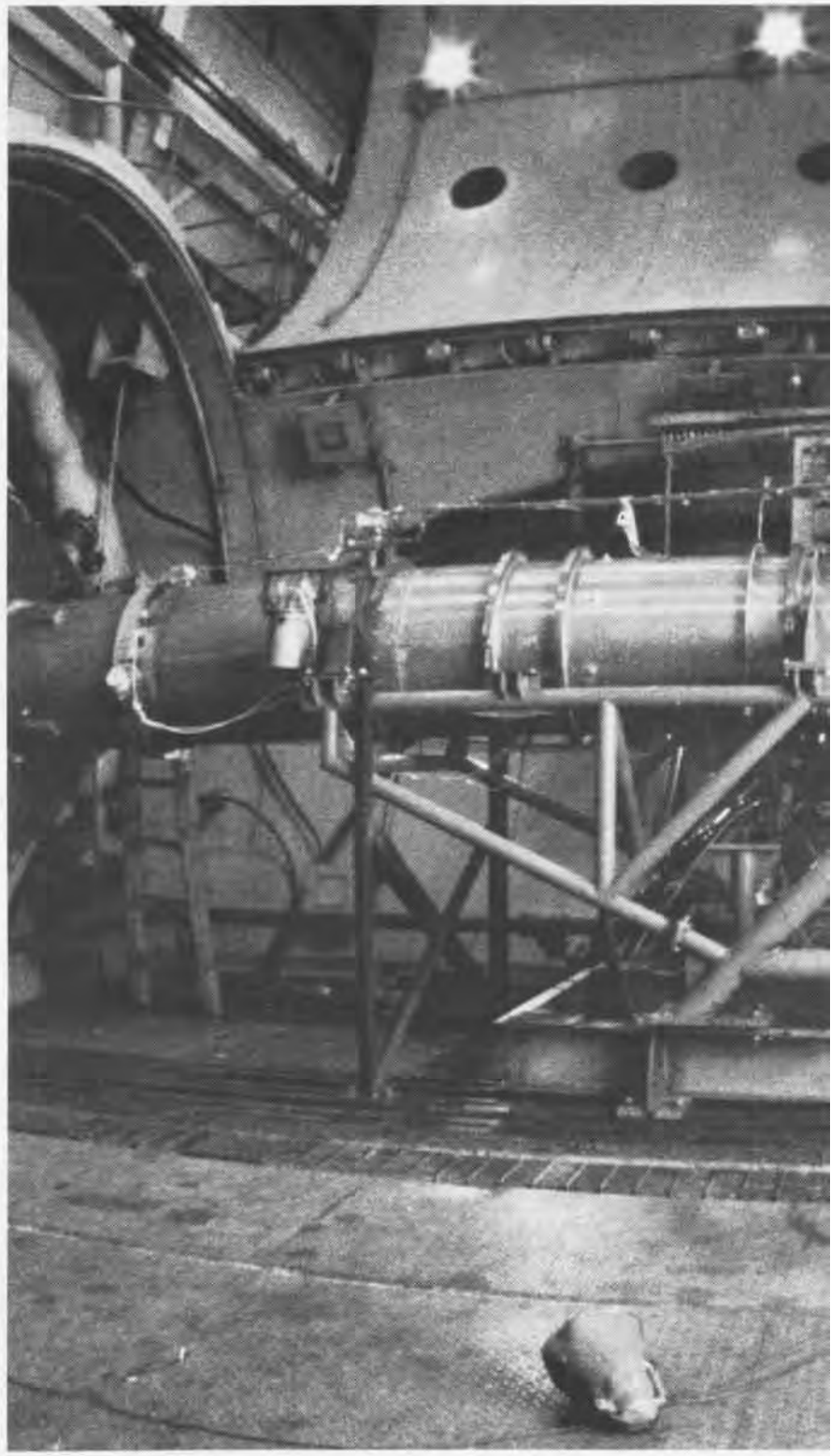


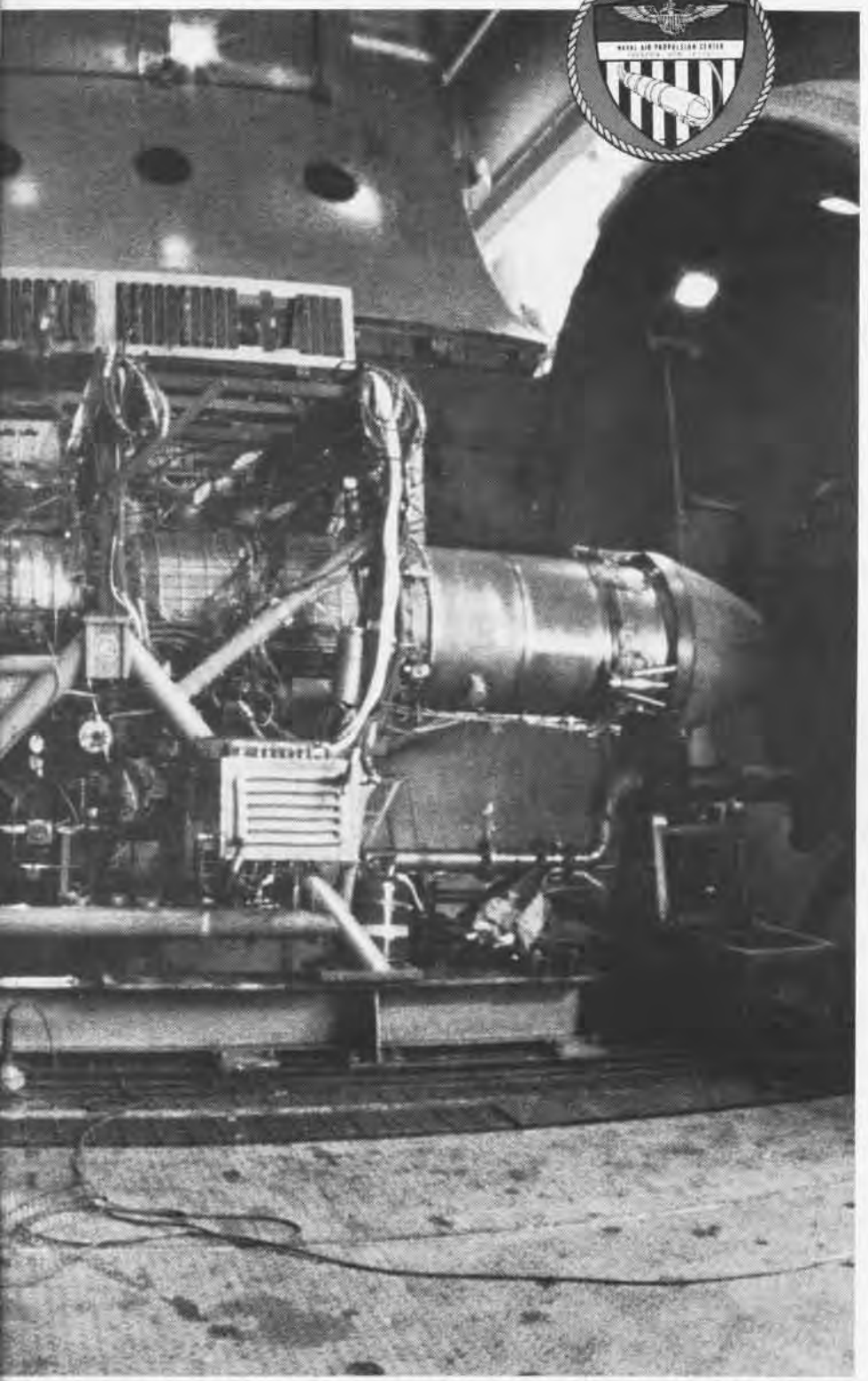
Infrared and noise measurement testing on the F/A-18 engine conducted at NAPC's outdoor test site.

operational use. A large turboprop test cell, two altitude test cells and two large sea level cells, capable of simulating high subsonic flight speeds, were provided. Ram blowers and refrigeration and heating units were installed for engine inlet flight condition simulation, as well as exhaust systems to control altitude conditions. With rapidly changing requirements anticipated for new aircraft, a third large altitude chamber and a fourth ram blower were installed to accommodate the increased air mass flow and flight speed capability. With all this new equipment, NATTS embarked on its primary task, testing and evaluating airbreathing engines for Navy aircraft while simulating environmental and operational conditions throughout the aircraft flight envelopes.

The Naval Air Turbine Test Station was activated in 1955 and official operational testing began. The crucial task of acquiring a fully trained and competent civilian staff went on concurrently with the checkout of the new facilities and establishment of major test programs. Fortunately, the Navy already had some in-house capability for airbreathing engine testing at AEL in Philadelphia and was able to draw personnel from that facility. In addition, senior aerospace engineers were recruited from the National Aeronautics and Space Administration and the aerospace industry. By 1960, the facility had a strong, capable organization in place with significant experience in engine testing.

Full-scale engine testing began at NATTS in 1956 with the Westinghouse J40 turbojet engine. Altitude studies on the Wright J65 and Allison J71 followed. Meanwhile, several major aircraft programs were under way which involved NATTS personnel in new engine projects, specifically, the General Electric J79 series for the F-4 *Phantom II*, the Pratt & Whitney J57 engine for use in several models





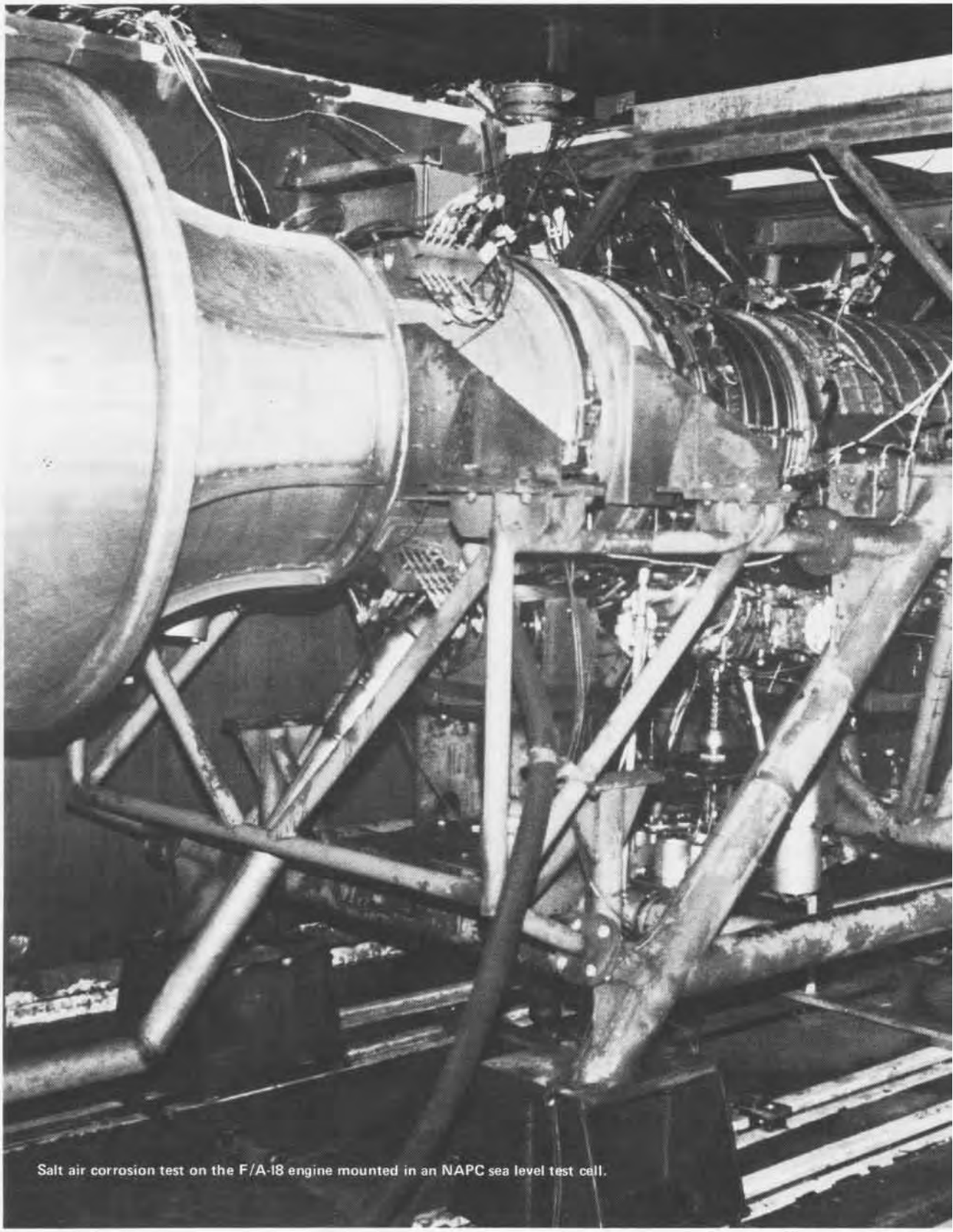
Hornet engine mounted in an NAPC altitude test cell.

of the A-3 *Skywarrior* and F-8 *Crusader*, as well as engine testing programs to investigate service problems, to verify fixes and to demonstrate technology concepts. A number of programs followed after 1958 for the A-4 *Skyhawk*, A-6 *Intruder*, A-7 *Corsair II* and F-14 *Tomcat*.

While new models arrived for testing every few years, older engine models continued through NATTS test cells to evaluate product improvements developed under the engine project support programs. During the period 1956 to 1970, some 27 different engine models were tested at NATTS.

In the sixties, several organizational changes were made, with NATTS remaining a field activity under the newly-established Naval Air Systems Command. July 1967 marked the beginning of a merger of the Aeronautical Engine Lab with NATTS. Relocation of the AEL facilities to the Trenton site was an extensive effort since the Lab was to retain its full capability, including test responsibilities for small gas turbine engines, auxiliary power units, engine starters, propellers, gearboxes and transmissions, and a major effort in fuels and lubricants. The physical consolidation of the two activities was completed in 1975. The facility was renamed the Naval Air Propulsion Test Center, which subsequently became the Naval Air Propulsion Center (NAPC).

As a result of the merger with AEL, a test capability for turboprop and turboshaft engines was established at the Center in 1972. The engines were tested to determine acceptability of engineering changes which altered or upgraded performance, provided air-starting capabilities and satisfied other specification requirements. About one-half of the testing was in support of Army applications. In 1975, testing began on the T700 engine for the Army *Blackhawk* helicopter. Navy participation



Salt air corrosion test on the F/A-18 engine mounted in an NAPC sea level test cell.

followed with a variant T700-GE-401 selected for the SH-60B *Seahawk*, to be used as a sea-based antisubmarine warfare weapon system.

The AV-8A *Harrier* was being evaluated for use in the Marine Corps light attack mission in the early 1970s. This unique aircraft uses the Rolls Royce F402 Pegasus engine vectored thrust to achieve vertical takeoff and landing. NAPC developed a capability to test this engine in a sea level cell with a vectored thrust, and in the large altitude cell in the horizontal flight position. Testing is now programmed for the AV-8B engine.

Two additional major engine programs presently are under way in the NAPC test cells. One is the F404 low bypass ratio afterburning turbofan engine used in the F/A-18 *Hornet*. NAPC testing began on this engine in April 1977, with qualification tests successfully completed in 1979. Significant post-qualification testing has been in progress since that time. The second program is cruise missile engine testing, which has been around since 1976 at NAPC for the Navy *Tomahawk* missile and the Air Force air-launched and ground-launched cruise missiles (ALCMs and GLCMs). The Center recently achieved a significant milestone, having tested the 200th cruise missile engine since the program began.

Current tests involve F-14 engine improvements, accessories for the F/A-18 and S-3A engines, alternate fuel sources, and *Harpoon* missile engine reliability improvements. Additional work is being conducted at the NAPC outdoor test site located at the Naval Air Engineering Center, Lakehurst, N.J.

Despite all this activity, NAPC's mission involves more than engine tests for Navy aircraft. Indeed, it encompasses all facets of aviation propulsion. A cradle-to-grave concept involves research and development in new propulsion technologies, qualification testing of preproduction engines and accessories, evaluation of engine problems in the fleet, and examining future aviation fuels, lubricants, bearings and seals. In addition to providing complete technical and engineering support to the Naval Air Systems Command and the fleet for all propulsion-related equipment, the Center also tests engines for the other armed services. A case in point is General Electric's F101 derivative fighter engine which was tested in 1981 as a potential alternative power plant on the Air Force F-16, as well as for the Navy's F-14.

NAPC has a work force consisting of eight naval officers which includes five aeronautical engineering duty types, one Naval Aviator, one Supply Corps officer and a Civil Engineer. It also employs about 580 civilians. The Center is a relatively small facility with a big capability — to test engines under all conditions which might be encountered by naval aircraft. These include sea level to 100,000 feet, sitting still to Mach 3.0, simulated desert or arctic environments, salt water spray, steam or rocket gas ingestion, and forces created during rapid turns.

It was primarily as a result of the current series of tests on both Navy and Air Force cruise missile engines, and those on the F/A-18 and LAMPS MK III engines, that the Secretary of the Navy awarded NAPC the Meritorious Unit Commendation for the period October 1, 1979, to April 1, 1981. SecNav praised the Center's work which, he noted, has "advanced the capability of naval and other armed services aviation, and greatly enhanced the posture of national defense."

The long-range plan at the Center anticipates a full workload far into the future. The trends of the recent past and goals for the future indicate an increased involvement of NAPC in early phases of new propulsion system development and acquisition. The mission is to provide Naval Aviation with the superior propulsion systems it needs to maintain the edge in the ever-changing arena of air warfare. Commanding officer Captain Edward J. Sturm is confident that the Naval Air Propulsion Center will meet the challenges of the future as it has done so well in the past.

At the Naval Air Rework Facility (NARF) in Jacksonville, Fla., they believe the proper approach to a job is to hit the ground running and don't look back. Most recently they ran away with the 1981 Productivity Award as the best of the Navy's six NARFs.

"Hard work and innovative ideas," says the facility's commanding officer, Captain Wendell Powell, describing how the award was won. In other words the people at NARF Jacksonville saved the Navy more than $85 million and still met or exceeded every goal in supporting fleet units.

The facility had a unique start in 1939 when the citizens of Jacksonville voted a million-dollar bond issue to purchase the Black Point site on the St. Johns River to give intact to the U.S. Navy. The next year the Assembly and Repair Department of NAS Jacksonville was formed with one officer and one clerk making up the initial staff. From a small beginning, the unit grew. In 1967 it became a separate resident command and today is the largest industrial employer in northeast Florida, providing more than 3,000 jobs with an annual $77 million payroll and operating budget of $150 million.

The rework facility is still at Black Point, but is now spread over 96 acres, with a multitude of aeronautical parts and materials constantly flowing in and out of the shops. More than 150

Tom Hansen

Above, A-7 Corsair II receives its engine during rework at NARF Jacksonville. Left, Tom Spruell of the nondestructive inspection shop examines X-rays of aircraft parts.

Better Than New

Fountain of Youth for Naval Aircraft

aviation and aviation-related trade skills are represented at NARF, a large portion of these in the aircraft program. In 1981, the facility reworked 210 A-7 *Corsair II* attack jets and 22 P-3 *Orions*.

As the depot for A-7 aircraft, the NARF performed standard depot level maintenance on 87 *Corsairs* and midterm work on another 123. This included one specific job of turning two of the most severely damaged A-7s ever processed by the NARF into one flight-certified aircraft. The fact that both crashed *Corsairs* had already been cannibalized at various points for parts didn't make the job any easier. In addition to providing the fleet a good-as-new retread, Aircraft Planning Branch Head Jack Pace said the project was a base for improving existing skills, "and we learned to do things we would not have had the capability to do before." He went on, "It gave us the opportunity to train a lot of people."

The aircraft program also saved the Navy money by meeting or beating delivery dates for modifying 50 *Corsairs* for forward-looking infrared receivers.

Fleet demands keep the mobile teams in the aircraft program busy. Teams composed of a planner/estimator, sheet metal mechanic, machinist and an engineer are constantly rotating on four-month deployments to carriers in the Indian Ocean. Worldwide, the teams provided service in 1981 to every

John Fleming

Left, J52 long-shaft turbine is readied for shipment. Below, A-7 arrives at NARF Jacksonville to be made good as new for the fleet. Below left, freshly painted drop fuel tanks gleam in the bright Florida sunshine.

Jim Miller

John Fleming

carrier in the Navy, and worked on aircraft from Argentina to Korea. The traveling teams serviced everything from helicopters to transport aircraft.

In the engine program during 1981, NARF workers met schedules for every type, model and series engine on which they worked, a first for any rework facility. They responded to the Navy's need for more engines by nearly doubling the workload. As the only overhaul depot for the R-1820 reciprocating engine, they answered the shortage of parts during rework by manufacturing them in-house.

The aircraft components program was so successful in 1981 that achievement charts were revised to reflect greater-than-planned efficiency. Capt. Powell had challenged the department by setting 100 percent as the minimal efficiency level in providing top-level priority components for grounded aircraft. He was pleasantly surprised when an all-time-high level of 243 percent was reached.

The ground support equipment people at NARF discarded the old "get-behind-and-catch-up" problem and came out of 1981 either on or ahead of schedule in every area.

Perhaps the most ingenious people at the NARF are the folks in the packaging shop. For them, the general rule is that what comes in is going to go back out. The 24 men and women in packaging see that everything arrives at its destination in the same condition it left the NARF. A gyro-

scope the size of a cigarette pack goes into a container the size of a kitchen oven with coil springs and padded bolts that look strong enough to restrain an elephant. The components shipped are so diverse that the shop fabricates its own custom cardboard and wooden boxes.

When there was a shortage of engine shipping cans, Matt Wright of the packaging engineering office designed a wooden container for jet propulsion units.

"We may be guilty of over-packaging," says Wright, "but we must provide packaging for the very worst of circumstances." He points out that it does no good to repair a component, only to have it arrive at its destination in several more pieces than when it was sent.

NARF personnel are noted for their dedication to improving on good and not accepting "no way" as a solution. For example, when the original manufacturer gave an estimate of 18-24 months to produce A-7 aileron hinge fittings, NARF personnel did it themselves in six months. And when contractors declined to bid on items at less than mass quantity, the rework facility made delicate circuit boards in-house.

They also set a record by manufacturing over $1 million worth of non-stock number parts for the fleet when the schedule only called for a $100,000 per quarter level. The parts are now in the supply system.

Anticipating future needs, the NARF is the first Navy complex to install a punch press with laser-cutting capability. The equipment can cut metal in any contour and reduce a one-and-one-half-hour job to just eight minutes. An eight-axis tool and cutter grinder now provides the NARF with the ability to custom make cutters to fit its needs rather than buy them from a manufacturer and reshape them by hand.

An interactive graphics computer system now allows parts to be designed on the video terminal and placed on tape. The cutting process can be seen on a visual display screen. It is a system NARF officials expect will expand to quadruple its present use within a year.

At the same time the facility is reworking damaged A-7 *Corsairs*, it is gearing up to handle F/A-18 *Hornets*. Last year, the last A-7E rolled off the manufacturer's assembly line, and the people at NARF turned their attention to its replacement, the F/A-18 *Hornet*.

Rebuilt A-7 piloted by LCdr. John Warren of VA-87 returns to the fleet.

Capt. W. W. Powell, C.O., NARF Jacksonville.

The NARF expects to be capable of responding to crash damage of the F/A-18 by January 1984 and to establish component support early that year. Pilot rework capability is expected to begin in January 1986 and full rework capability by January the next year. A unique aspect of preparations for the *Hornet* includes studies in composite repair to deal with the graphite/epoxy material utilized on 42 percent of the F/A-18's surface.

"The real payoff," according to Capt. Powell, "is reflected in the increased readiness of the fleet units we support."

In addition to the Productivity Excellence Award for 1981 and a specially-designed flag to mark the achievement, each of the NARF employees has received a special commendation, and a select number of workers have received productivity fellowships.

Capt. Powell put it well in his annual report addressed to NARF employees, "Let there be no question about it, you were number one in '81."

Flying LDOs

By Commander Howie Wheeler

It may have seemed like a typical "winging" ceremony at the NAS Corpus Christi, Texas, Officers' Club on January 28, 1982, but this one was different. It was the first time that a noncommissioned officer had completed flight training since the Naval Aviation Cadet (NavCad) program ended in 1968.

The applause was for a former first class aviation ASW aircrewman and a chief yeoman who not only received their Naval Aviation Wings of Gold but were commissioned as ensigns in the regular Navy. The pride experienced by Ensign Michael A. Gray and Ensign Douglas L. McGowan, Jr., was understandable because they were the first to complete flight training and receive commissions under the Navy's new aviation Limited Duty Officer (LDO) program established in 1980. The aviation LDO program is one of several initiatives by the Navy to reduce pilot shortages and enhance pilot training. At the same time, it offers a way for top Navy enlisted members to earn a commission and a seat in the cockpit of a naval aircraft.

While most agree that giving enlisted personnel an opportunity to become Naval Aviators is a good idea, it is not a new one. In 1916, the first group of enlisted men began flight training at Pensacola to meet the needs of the service. After flight training, most retained their enlisted status. More than 3,700 Naval Aviation Pilots (NAPs) were trained in this manner. They participated in virtually all aspects of Naval Aviation, frequently distinguishing themselves in combat. Many remained for a full career. The last NAP, Master Chief Petty Officer

PH3 Granados

Ens. Gray (l.) discusses cockpit procedures with Aviation LDO candidate Block.

Robert K. Jones, retired on January 31, 1981. He had completed 38 years of active duty.

In 1935, Congress also passed the Aviation Cadet Act that created the NavCad program. It was designed to enable enlisted members with college degrees to earn their wings and a commission in the Naval Reserve at the same time. During WW II, the educational requirement was reduced to three and then two years of college. Finally, highly-qualified high school graduates were accepted. After the war, two years of college were again required. The last NavCad to complete flight training under this program was Ensign Gene L. Porter, at VT-22, Naval Auxiliary Air Station, Kingsville, Texas, in March 1968.

Ensigns McGowan and Gray are a new and special generation of Naval Aviators. They are known as Flying LDOs and if they are examples of the end product of this program, the Navy and the American taxpayer have made a super investment.

Both McGowan and Gray completed the entire flight training program three months earlier than the average flight student. In all candor, it should be pointed out that they had a head start, since both had prior flying experience. Ens. Gray held a civilian FAA flight instructor's certificate and had logged more than 1,000 hours of flight time. Ens. McGowan was a former civilian flight instructor and instrument-qualified in single-engine aircraft before applying for the aviation LDO program. Ens. Gray says, "With prior flight time you don't have to be taught how to fly, you just have to be taught the Navy way to fly." He is quick to point out, however, that the

PH3 Granados

Recently commissioned Aviation LDO Ens. Mike Gray prepares for a flight.

other Flying LDO candidates with no prior flying experience are ". . . doing quite well" when compared to their counterparts in the officer program.

Very often, the strength of a flight student's motivation makes the difference between success and failure. The first batch of Flying LDO candidates seems to have plenty of that particular quality. Of the 42 who were selected and began training, only six have dropped out after reporting to NAS Pensacola, Fla.

Part of the reason for the success of the concept, according to Lieutenant Commander James F. Parks, LDO/CWO program manager, is the camaraderie and team spirit which the group has displayed. All went through the 14-week indoctrination phase together as a class. In fact, says LCdr. Parks, their spirits were high even before they began their formal training. This became evident when they took it upon themselves to run cross-country as a group to get into shape for the demanding physical training that awaited them.

During the first 14 weeks, Flying LDOs receive the same full spectrum of aviation indoctrination training as their Aviation Officer Candidate (AOC) counterparts, under the close supervision of Marine Corps drill instructors. Here, self-discipline, determination and motivation are immediately put to the test. Ensigns Gray and McGowan agree that this

PH3 Granados

Flying LDOs log many hours in the T-28 synthetic flight simulator. Aviation LDO candidate Block (foreground) and Ens. Gray practice instrument flying procedures.

was the roughest part of the flight training program. "It was difficult being a chief petty officer one day and being down on your face the next morning at 0500," says McGowan.

Unlike their AOC counterparts who are commissioned after 14 weeks, the Flying LDOs do not become officers until they complete the entire program and receive their wings. After it's all over, aviation LDOs are assigned duty as flight instructors in the primary stage of the flight training program. Then they can expect to fill selected aviation officer billets aboard aircraft carriers.

As with all Naval Aviation programs, only the most highly-qualified and motivated may apply and only the best of those are selected. Generally speaking, selection is limited to active duty E-5 through E-7 men and women who are U.S. citizens and have had at least four years of service. They must be under 30 years of age and have passed the AQT/FAR examination with a score of 3/5. They should have at least 60 semester hours of accredited college work. In addition, they must meet certain physical qualifications, have a good record of service and be recommended by their commanding officer.

The second group of aviation LDO candidates will begin their flight training in April 1982. Applications for the program are normally accepted during the fall of each calendar year.

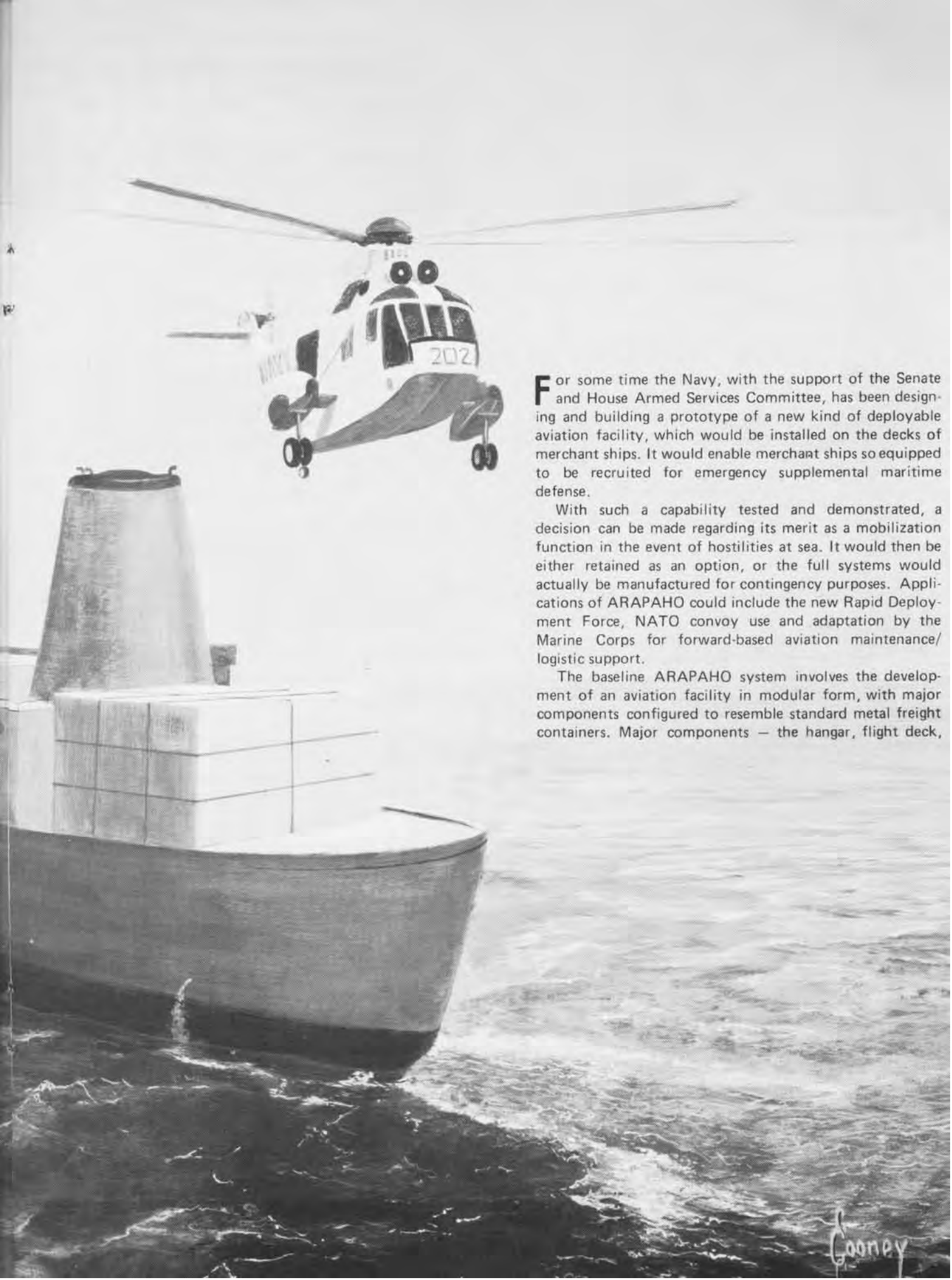
The Flying LDO program is a real challenge and a great opportunity. So, if it's for you—GO FOR IT!

J. D. Solis

The first Aviation LDOs to complete flight training show their pride. Ens. Doug McGowan (r.) presents Ens. Mike Gray with an oversized set of Naval Aviator wings.

ARAPAHO Update

By Jim Mulquin



For some time the Navy, with the support of the Senate and House Armed Services Committee, has been designing and building a prototype of a new kind of deployable aviation facility, which would be installed on the decks of merchant ships. It would enable merchant ships so equipped to be recruited for emergency supplemental maritime defense.

With such a capability tested and demonstrated, a decision can be made regarding its merit as a mobilization function in the event of hostilities at sea. It would then be either retained as an option, or the full systems would actually be manufactured for contingency purposes. Applications of ARAPAHO could include the new Rapid Deployment Force, NATO convoy use and adaptation by the Marine Corps for forward-based aviation maintenance/logistic support.

The baseline ARAPAHO system involves the development of an aviation facility in modular form, with major components configured to resemble standard metal freight containers. Major components — the hangar, flight deck,

accommodations array and fuel farm – are designed to be handled by commercial gantry cranes and standard pier equipment. Aboard ship, actual loading and off-loading would be accomplished by civilian stevedores, using only their normal equipment and facilities. Navy and/or Marine Corps personnel would make quick-connection hookups of fuel, water and utility lines, once major elements were lashed down to the ship's deck.

Estimates are that the entire facility, weighing approximately 1,200 tons, can be loaded in 10 to 14 hours and made ready for aircraft recovery within 20 hours. Units are self-sustaining – heated, powered, lighted and vented – and on arrival at pierside already contain the aviation shops, maintenance gear, spare parts and support needed for an aviation detachment at sea.

Virtually any Navy or Marine Corps helicopter is compatible: the UH-1, SH-2F, CH-46, CH/RH-53 and the SH-60. Army aircraft such as the CH-47 and CH-54 are also considered deployable. It may even be possible to demonstrate the facility with the AV-8B *Harrier* VTOL aircraft or the British *Sea Harrier* fighter variant.

Present emphasis is on using the prototype ARAPAHO, now 90% completed at Naval Air Engineering Center, Lakehurst, N.J., to gain specific feasibility information. Phase I development culminates this fall with actual helicopter operation aboard a commercial ship off the East Coast. Plans are to complete a series of day and night recoveries and takeoffs with Sikorsky SH-3H aircraft and flight crews from the Naval Air Test Center, Patuxent River, Md. Once basic feasibility has been established, U.K. *Sea King* helos will follow the Test Center demonstrations to gain familiarity with the operations. Naval Reserve SH-3 helos may participate in trials if time permits.

Phase II effort, if approved and undertaken, will address the tactical and operational merit of ARAPAHO as a fully-functional weapons systems – first, as a supplemental, augmenting unit for conventional forces, such as LAMPS-equipped frigate/destroyer screens assigned to convoys. In addition, Phase II will investigate possible alternate missions, including direct support for underway replenishment groups, mobile aviation maintenance platforms at advance sites, and use with amphibious assault groups. ARAPAHO may eventually prove to have application in airborne mine countermeasures support, where basing the large RH-53 aboard suitable ships has proven a problem.

ARAPAHO is basically a floating "air station" rather than a designated, committed part of any one warfare mission area. It can embark the peculiar equipment and support apparatus of the aircraft detachment assigned, be its mission air defense, ASW, antiship missile defense, amphibious assault, casualty evacuation or aviation maintenance, to name a few candidates. The purpose is to learn, not to suggest a fully researched, documented production prototype, which it is not.

In October 1980, a Naval Air Test Center SH-3H *Sea King* helo completed 10 landings and takeoffs from the ARAPAHO situated on a simulated merchant ship's main deck. The latter had been constructed from surplus steel beams over an auxiliary runway at NAEC Lakehurst, and was fitted with container pick-up fixtures identical to those found on merchant ships to accept deck container cargo. All aircraft landings were made with brakes locked to

16,200-ton container ship Resolute. High-value vulnerable targets like this would be first beneficiaries of ARAPAHO protection in wartime.

ARAPAHO modules feature aluminum roller-curtain hangar bay doors, maintenance shops, power generators, spare parts stowage, ready rooms, and a magazine sufficient to support a deploying helicopter detachment.

check tire attrition on the grid-type flight deck. There was none. These daytime demonstrations will be repeated this summer at Lakehurst, along with the initial night landing/takeoff tests, prior to going aboard ship, probably in October.

In February 1981, a major portion of the ARAPAHO structure was transferred by truck to a marine terminal at Baltimore, where it was loaded aboard a typical container-type freighter, *Export Leader*. Using standard gantry cranes and commercial handling equipment, the facility was embarked with little difficulty by civilian stevedore crews, much as it would be in an actual mobilization. No special instruction or briefing was conducted in advance and, by every criterion, it appeared that ARAPAHO can be safely and efficiently handled by commercial teams.

ARAPAHO is by no means perfect, nor does it embody all the facilities and protection afforded by conventional, commissioned naval units. It does, however, represent a new, workable initiative, one that uses to best advantage literally hundreds of U.S. and NATO-registry merchant ships with the physical capacity to embark their own aircraft defense detachments. Priority is presently being given to timely completion of Phase I feasibility tests, to establish fundamental safety, structural integrity of the facility and aircraft compatibility. Work is progressing under the direction of the Naval Air Systems Command project manager and under sponsorship of the Chief of Naval Operations. In addition to the British Royal Navy, other participants in ARAPAHO research include Australia, Canada and the Federal Republic of Germany.

PS/RS

By Harold Andrews

RS-3

XPS-1

During the 1930s, Sikorsky was as well known for amphibians and flying boats as the company has been for helicopters over the last thirty plus years, and is today. In fact, the first real production success of the struggling young company was a twin-engine amphibian in the late 1920s. The Navy's use of Sikorsky aircraft started with these first amphibians.

Sikorsky's first effort in the field was the S-34, a twin-engine flying boat which sank and was lost on an early test flight. Based on this experience the first amphibian, the S-36, was built. Again a twin-engine airplane, it was powered by two 220-hp Wright J-5 Whirlwinds. Like all of Sikorsky's early water-based aircraft, it adopted the configuration that had been used on the Navy/Curtiss NC boats: a short hull with tail surfaces mounted on an outrigger structure from the hull and wings. While a few of these were built and sold in 1927-28, including the XPS-1 which the Navy purchased, the airplane was basically underpowered and saw no really successful service, either commercially or with the Navy. The addition of armament, including a nose gunner, to the XPS-1 compounded the problem of insufficient power, and the XPS-1 never joined the fleet.

By the time the Navy was testing the XPS-1, Sikorsky had already moved on to a new twin-engine design, the S-38, powered by 450-hp P&W Wasp engines. First flown in June 1928, it became an almost overnight success, particularly in meeting the needs of the fledgling airlines in the Caribbean, South America and Hawaii. The Navy tested the S-38 later that summer prior to purchasing two

S-38As as XPS-2s. While these were designated VP aircraft, Anacostia's flight tests evaluated the second in an off-the-shelf utility role in early 1929. Both went into utility service initially, with VJ-1B operating from USS *Aroostook*. While the hull was of mixed construction, with largely wooden frames and metal skin, the rest of the structure was all metal, with wing and tail surfaces fabric-covered. An unusual feature of the design was the vertical, flat front windshield. Radio equipment was installed at Anacostia, as were auxiliary fuel tanks in the nose of the test airplane. With correction of the usual type of problems, the XPS-2 was considered quite satisfactory for the utility role, though an improved hull was recommended.

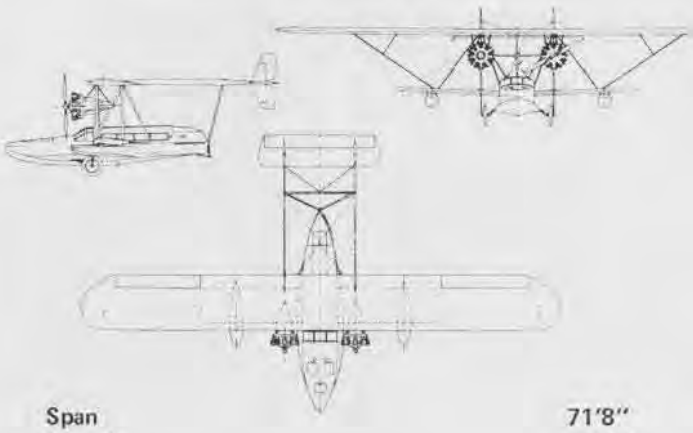
With the XPS-2s in the fleet, four additional PSs were ordered from Sikorsky in April 1929. These were to be based on the improved S-38B design, one feature of which was a more standard, sloped windshield. Additionally, gun positions at the bow and stern were added – though it seems a question as to how much firing the rear gunner could have done without hitting one or another of his surrounding struts and tail surfaces. The gun emplacements were soon removed and the PS-3s, like the XPS-2s, went into utility service, both with Marine Corps and Navy units. During 1930, the PSs served with various units, one even serving with VP-2 during its transition from float planes (T3Ms) to flying boats (PMs).

Late in 1930, a series of events transpired which add some confusion to the Navy designations of these Sikorsky amphibians. Sikorsky was developing a new design, the S-41, intended to provide all the improvements that service operation of the S-38s warranted. Retaining the basic configuration, the lower wing was eliminated, the hull was completely redesigned and was of all metal construction, the upper wing aspect ratio was increased, and higher power P&W Hornet engines were installed. In November, the Navy ordered three of these new amphibians as RS-1s, subsequently redesignating the older XPS-2s and PS-3s as XRS-2s and RS-3s, respectively. The first RS-1 was delivered to Anacostia for tests in May 1931, returned to Sikorsky for modifications in June and, after redelivery, completed its tests and was delivered to the Marines at Quantico in August. The test report indicated that while its performance was not significantly improved over the S-38 types, it was "much improved in maintenance and operating characteristics." The three RS-1s also served with both Marine and Navy units.

Regardless of the comparison of characteristics, and probably reflecting the lower cost of the earlier model in these difficult financial times, three additional RS-3s were purchased in 1931. The RSs continued to operate with various Marine and Navy units until late in 1934 when the last were retired, although their civilian counterparts continued in service for many more years.

A postscript to the RS designation story was added in 1942 when the Navy, as part of the service/airline WW-II transport-operating arrangements, purchased four of Pan American's four-engine Sikorsky *Clippers*, two S-40 and two S-42 flying boats, designating them RS-4 and RS-5, respectively. While they met early WW-II Navy transport buildup needs, the designations were assigned for administrative purposes, and they are not really part of the original PS/RS story.

PS/RS-3



Span	71'8"
Length	40'3"
Height	13'10"
Engines	
Two 450-hp P&W R-1340Cs	
Maximum speed	124 mph
Service ceiling	15,300'
Maximum range	741 mi.
Crew	Four

XR-5

XPS-2

Snow Bird

A Record Flight Remembered

By Roy A. Grossnick, Assistant Historian

A group of lighter-than-air (LTA) enthusiasts gathered at Embry Riddle Aeronautical University, Daytona Beach, Fla., in March 1982, to celebrate the 25th anniversary of a world record-setting flight. This was not just any group of LTA fans, but the crew of the Navy ZPG-2 airship *Snow Bird* which set airship endurance and distance records that stand today.

The flight of *Snow Bird* had its origins in the early fifties when the Navy's LTA advocates were struggling to prove the capabilities and suitability of airship operations in a modern and fast-moving Navy. The success of the airship in WW II had been eclipsed by the new advances in fixed-wing aircraft. Thus, it was thought necessary to demonstrate anew the capabilities of the airship platform to prove it could perform the duties required for antisubmarine warfare (ASW) and airborne early warning (AEW) operations. These requirements were accented by the growing need for a reliable airborne platform which could operate around the clock in all types of weather.

A series of tests were developed to evaluate the Navy's latest airship, the Goodyear ZPG-2. These tests were conducted by personnel from the Naval Air Development Unit, NAS South Weymouth, Mass., and were divided into four phases. Phase one involved ground handling in adverse weather, particularly during high winds. This was followed by tests in which the ZPG-2 airship was evaluated for its ability to deal with heavy buildup of ice during in-flight operations. The third phase required airships to maintain a continuous on-station patrol for 10 days. This was particularly demanding for the ZPG-2 airships and their personnel, since the 10-day patrol was maintained in some of the worst weather the area had experienced in 35 years. The crews dealt with freezing rain, icing, sleet, fog, snow, rain, subfreezing temperatures and high surface winds. The first three phases were completed successfully and preparations for the fourth phase were accelerated. This last


U.S.NAVY

phase was to be a long-distance flight to evaluate the all-weather and long-range capability of the ZPG-2.

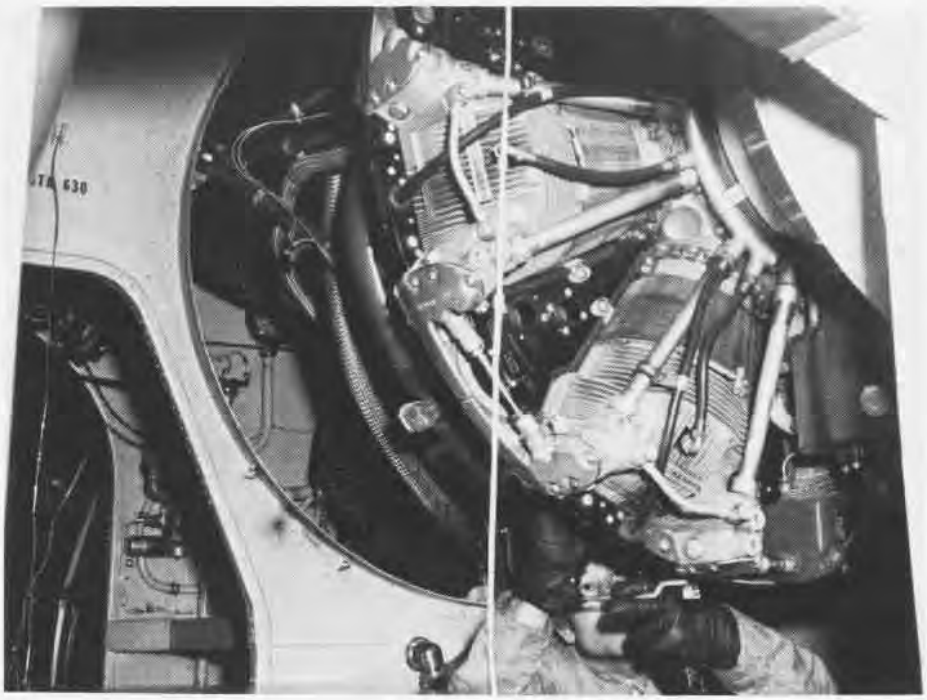
It was at this point that our small anniversary group entered the story. The crew of *Snow Bird* was a specially selected group of volunteers. Each man had a special talent which would contribute to the success of the operation. The pilot in command was Commander Jack R. Hunt, supported by two copilots, Commander Ronald W. Hoel and Lieutenant Commander Robert S. Bowser. Navigators for the flight were Lieutenants Stanley W. Dunton and Charles J. Eadie. Lieutenant John R. Fitzpatrick and Mr. Edgar L. Moore of Goodyear served as flight engineers. Moore was the only civilian to make the flight. The crew chief was CPO Lee N. Steffen who also doubled as radarman and radioman. Aerology and photography work was done by PO1 William S. Dehn, Jr. PO1 Thomas L. Cox and PO2 James R. Burkett were the flight mechanics, while PO1 Carl W. Meyer was the electrician. PO2 Francis J. Maxymillion worked with Chief Steffen as radioman and radarman. PO2 George A. Locklear, served as rigger and doubled with PO1 Dehn as cooks for the flight. Cdr. Hoel was the commanding officer of the Naval Air Development Unit at South Weymouth and senior officer on board the flight, but Cdr. Hunt flew as airship commander. Cdr. Hunt and LCdr. Bowser were the only two LTA pilots on the flight.

Extensive preparations had been made for the flight. Fuel consumption was carefully calculated and graphically plotted. Every item taken aboard was carefully weighed to ensure the ZPG-2 airship would be within the weight limits

Cdr. Jack R. Hunt commanded Snow Bird on her record-breaking flight. Now retired from the Navy, he is President of Embry Riddle Aeronautical University, Daytona Beach, Fla.

PO2 George A. Locklear doubled as airship rigger and cook during the flight.

Crewmen winch salt water ballast aboard Snow Bird during the flight. This was done periodically to compensate for weight loss of consumed fuel.



A Snow Bird mechanic works on one of the airship's engines in flight. Mechanics had easy access from within the control car.

Cdr. Ronald W. Hoel served as copilot on the epic flight.

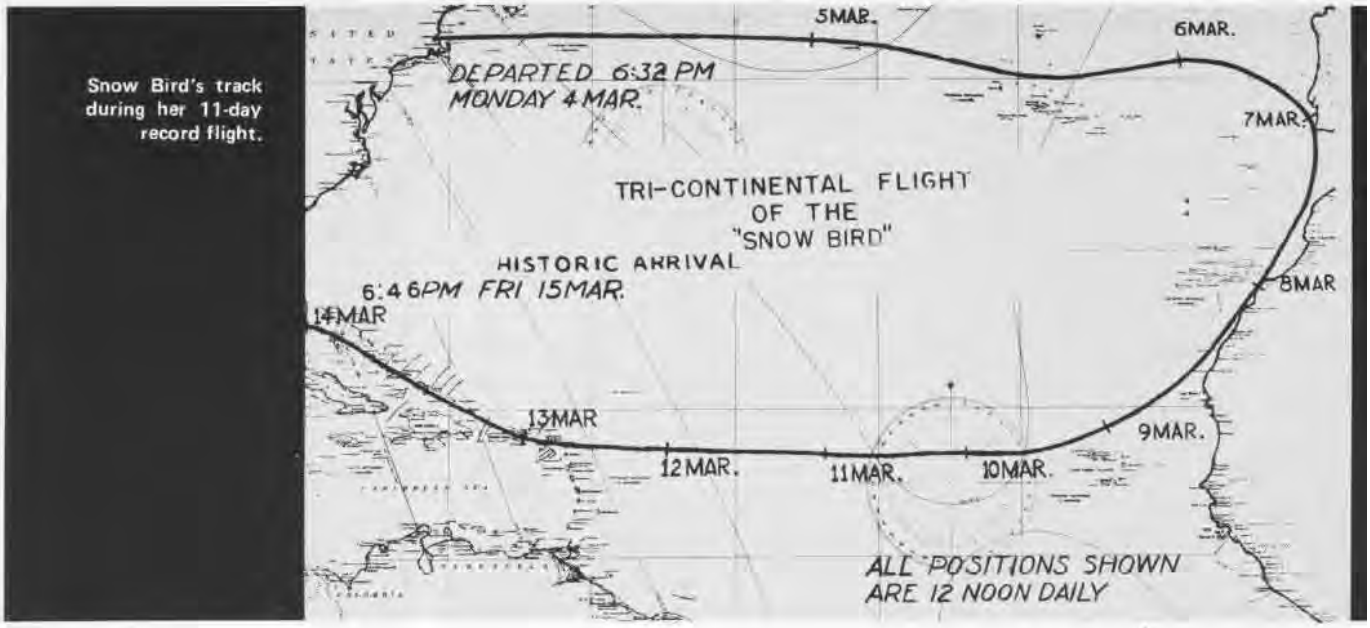
necessary to ensure the correct fuel consumption and lift rate. Other problems, such as weather reports and communication links, were meticulously worked out. Tension and excitement brought the crew to a high pitch of enthusiasm as the hour drew near for takeoff. On Monday, March 4, 1957, at 6:32 p.m. (EST) *Snow Bird* lifted off from Naval Air Station, South Weymouth for her epic-making flight.

Problems with strong crosswinds were experienced on takeoff but they were overcome and *Snow Bird* was airborne. Cdrs. Hunt and Hoel and PO Locklear had to repair Lt. Eadie's bunk, which was smashed on takeoff because of the weight of equipment stored on it. Aside from this mishap, the first few hours of flight were proceeding according to plan.

Snow Bird experienced her second problem not more than 600 miles at sea. The airship entered a storm area where snow was falling with a fair amount of turbulence in the air. The previous three phases of the tests had proven the airship's capability to withstand bad weather and the crew was confident of her ability to survive without mishap. The problem resolved itself as *Snow Bird* moved out of the storm area.

It was early morning, March 6, and the log read, "Lights below... freighter. Radar shows no land... good ... there are peaks in the Azores." *Snow Bird* was making good speed and, as they neared the Azores, the mountainous islands could have presented a problem. Altitude was 1,000 feet, well below the peaks.

The transatlantic flyers were assisted by a wind blowing from the southwest which was acting as a tail wind for the airship. The critical decision now was whether to head



southward toward the easterly trade winds which would help them on their return flight. The problem lay in the leg south where they would be bucking a head wind which would slow their southerly journey and require greater consumption of fuel. The crew grew more anxious as they awaited weather reports from Fleet Weather Central in Washington, D.C. Reports for the evening of March 6 were not favorable. Nevertheless, *Snow Bird* turned south and attempted to economize on fuel with slow engine speeds. Weather reports on the morning of the 7th continued to call for unfavorable wind conditions on this heading. A course change was made and *Snow Bird* headed east, going to single engine operation to conserve fuel.

Minor problems began to crop up. An engine sputtered or the air pressure alarm went off, causing brief periods of anxiety before each situation was rectified. The wind, however, continued to be the major problem. The voyage had been planned to allow for a moderate consumption of fuel which would keep *Snow Bird* in the air for 12 days. If she continued to experience headwind problems, there would not be enough for the return flight. The airship commander briefed the crew on the possibility of landing at Port Lyautey, Morocco, to take on fuel in keeping with contingency plans. A portable mooring mast had been stowed aboard a *Super Constellation* which was to fly ahead of *Snow Bird* and be available at designated landing sites if needed. *Snow Bird* continued eastward and delayed the decision about landing. Nevertheless the *Super Connie* was directed to fly to Port Lyautey and make contingency preparations in case the airship had to land.

On the evening of the 7th, lights were sighted on the southwest tip of Portugal. *Snow Bird* headed south at this point toward the Canary and Cape Verde Islands. One leg of the trip had been completed. This in itself was a significant achievement, for an airship had not crossed the Atlantic since the days of WW II. Further, the crossings made by ZP-14 in 1944 and 1945 were by way of the Azores. *Snow Bird's* nonstop transatlantic crossing was the first for a nonrigid airship.

The winds along the Portuguese coast were out of the south but not as strong as had been encountered further out to sea, and they were able to make better time. By the morning of the 8th, the airship had passed Casablanca, the weather had improved and conditions looked better for the return trip. The decision was made at this time not to land at Port Lyautey. The log read, "Now we're committed." It was the beginning of the long leg home. As they neared the Canary Islands late in the evening of the 8th, the log read, "Good tail wind. Crew happy."

On the evening of March 9, after five days in the air, *Snow Bird* passed the Cape Verde Islands heading for the Caribbean. It was a long 2,500 miles to Puerto Rico.

Habitability aboard *Snow Bird* was proving to be palatable. Morale was high and the close quarters did not appear to bother anyone. Life was very similar to what might be expected aboard a small surface vessel crossing the Atlantic. Even the gentle motion of the control car was similar to the movement of a small ship. The car was 83 feet long and 11½ feet wide, and was divided into two levels. The upper deck had comfortable bunks and a wardroom equipped with a modern galley. The lower spaces housed the operational part of the car. This was where all the controls for flying the airship, as well as the equipment necessary to perform the mission assigned, were located.

Navigator Lt. Charles J. Eadie keeps Snow Bird on course.

Fleet Admiral William F. Halsey, Jr., USN(Ret.) of WW II fame represented the President in presenting the Distinguished Flying Cross to Cdr. Hunt in ceremonies at Key West.

The dietary needs of the men had been an important part of the planning for the journey. Variety, space requirements and preservation were all taken into consideration when food was ordered and brought aboard. It was necessary to set up a ration system to ensure an adequate supply for the entire trip. This was accomplished by placing each day's ration in separate bags. It also prevented any one item being consumed ahead of schedule. A total of 1,017 pounds of food had been loaded aboard *Snow Bird* for the flight.

The trip had thus far provided a variety of diversions. Icebergs had been sighted during the early part of the journey in the northern Atlantic. A large number of birds, sharks and whales were always on hand. It was especially exhilarating to see another aircraft or a surface vessel come into view. It made one think of the excitement which must have been generated in the days of sailing vessels when another ship was seen on the horizon after a long period at sea.

The routine of watches and operational duties during the voyage was accompanied by good-natured banter. An entry in the log for March 10 indicated that Cdr. Hoel and Lt. Fitzpatrick each owed a round of beer for inadvertently ringing the air pressure alarm bell. In fact, a sign was made for Cdr. Hoel and Lt. Fitzpatrick for their watch. It read "Welcome to the Bell-Ringer's Club."

The camaraderie during the journey extended to a surprise party held for PO Dehn in honor of his birthday on March 12. PO Locklear put his inventive culinary skills to work and baked a cake in an electric frying pan. Candles had not been a priority item for the trip but the problem was solved when filter-tip cigarettes were substituted. It was a complete surprise to PO Dehn and the party was enjoyed by all hands.

Tension and excitement began to mount on March 12. This was the eighth day of the voyage and *Snow Bird* was closing in on the record for continuous non-refueled flight, which was 200 hours and 12 minutes aloft. *Snow Bird* officially eclipsed this record at 2:45 a.m. (EST) on March 13, and broke a second record later that day. The distance record established by the German airship *Graf Zeppelin* in August 1929 fell when *Snow Bird* passed the 6,980-mile mark in her tri-continental journey.

Snow Bird continued her flight toward Key West, having established two new world records. Even before the flight ended, congratulatory messages began to come in. On March 15, 1957, at 6:44 p.m., *Snow Bird* landed at NAS Key West. The voyage took 264.2 hours and covered a distance of 9,448 miles. No airship of any type had ever flown that far or remained aloft that long without refueling.

Snow Bird was met by a large crowd. Crew members were personally congratulated by Admiral William F. Halsey, Jr., on behalf of President Eisenhower and the U.S. Navy. Awards were presented and special commendations read. It was a great moment for the 14 members of *Snow Bird's* crew and a proud achievement for the United States. For his contributions as commander and pilot of *Snow Bird's* record flight, Cdr. Hunt was awarded the Harmon International Trophy on November 12, 1958. The award was presented to him by President Eisenhower.

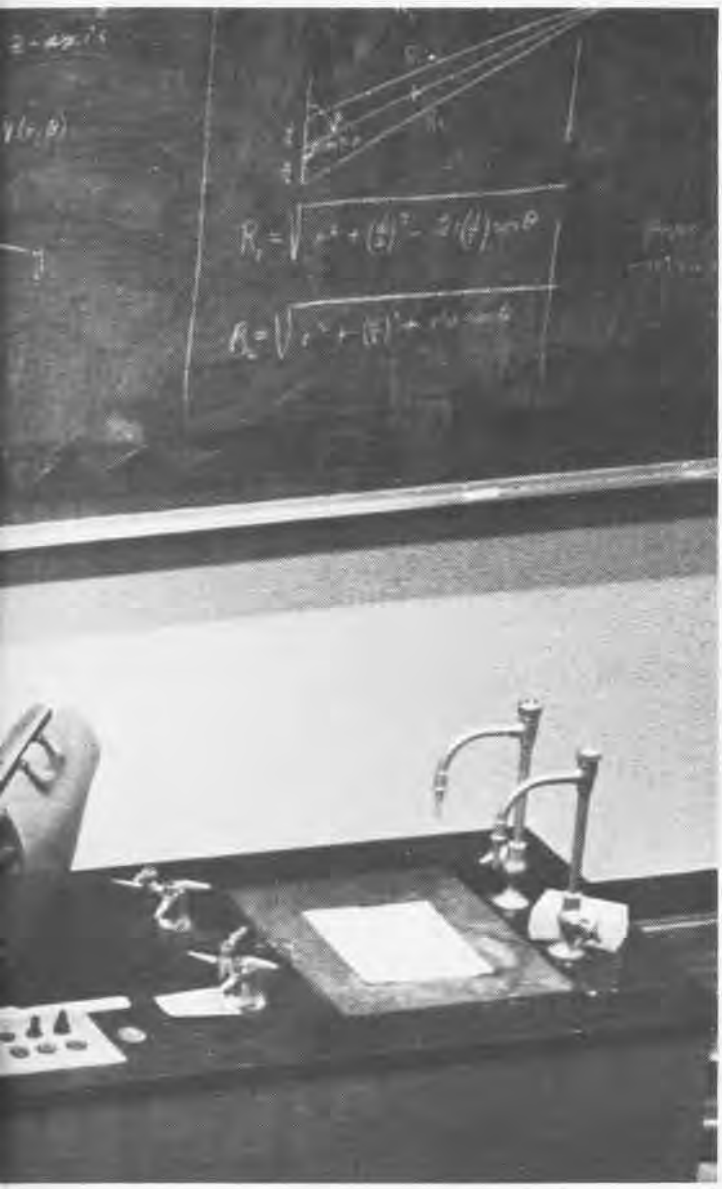
To the members of the crew and their families who gathered for the 25th anniversary of *Snow Bird's* flight, it is still a proud occasion.

RAdm. John J. Ekelund, superintendent of the Naval Postgraduate School, Monterey.

Story and Photos by
JO2 John Haley Scott

Graduate Education

Naval Aviators' Road to Professional Excellence



A classroom desk never gets off the ground, but it can be the Naval Aviator's ticket to fly better, higher and faster, both in and out of the cockpit.

At the Naval Postgraduate School in Monterey, Calif., the approach to graduate education is one of enhancing the aviator's knowledge and skills from both an operational and technical standpoint, according to Commander William Goesling of the Department of Aeronautics.

"The pilot is going to spend time away from the cockpit," admits Cdr. Goesling, "but he is going to acquire an ability to approach things in a much wider range. The engineering disciplines he learns here are going to allow him to deploy his weapons system better and understand more completely the systems he may be going against, seeing the operational and technical edge of both."

Nearly 200 Naval Aviators are presently enrolled at the Naval Postgraduate School. Approximately half of them are studying aeronautical engineering or weapons engineering. Others are in programs from operations analysis and computer technology to national security affairs and intelligence.

Of particular interest to the Naval Aviator is the Cooperative Masters Degree Program involving the Postgraduate School and the Naval Test Pilot School at NAS Patuxent River. One year is spent in residence at Monterey to complete a modified aeronautical engineering curriculum, followed by three months of jet refresher training and the 11-month test pilot program at Patuxent River. Successful completion of the entire program carries with it a Master of Science degree in aeronautical engineering and assignment of dual subspecialty codes XX71P and XX73P. *(Continued)*

Student and professor confer in a setting where cockpits, wardrooms and briefings are replaced by desks, classrooms and homework.

Lieutenant Commander Ed Boyington has already attended the test pilot school at Patuxent River. The former Army helicopter pilot and gunship driver in Vietnam flies P-3s for the Navy and is now studying aeronautical engineering at Monterey.

"Test pilot school at Pax River gives an individual a good working knowledge and understanding of aeronautics," he says. "But the deeper we got into the subject there, the more I realized I was lacking in technical knowledge."

Boyington also expresses the reasons a number of classmates choose graduate school studies at Monterey.

"I have a degree in psychology," he explains. "If I were to go to a civilian university for a graduate degree in engineering, I would have to start all over again at day one in the bachelor (degree) level. One of the good things about the Naval Postgraduate School is that they took into consideration my military experience and my education, and tailored a program that will qualify me for graduate studies. You will never find this type of program anywhere else."

Most Naval Aviators at the Postgraduate School are interested in the opportunity as a touchstone to greater responsibility. One officer who received a master's degree in 1977 and later returned to a flying billet had this to say about his investment, "Graduate education has added a great deal of diversity to my career. It gives an officer new capabilities and latitude he won't really appreciate until later."

It is a feeling confirmed by Lieutenant Grant Begley, an F-4 *Phantom* radar intercept officer and aeronautical engineering student presently enrolled at the Postgraduate School.

"There is an inflation factor in education that has affected both civilian and military. Today, a four-year education in many cases is not enough. And 15 years from now, postgraduate education will be the requirement for situations that now demand only a four-year degree.

"An individual has to realize there is more to life than flying," Begley adds. "The day will come when you have to quit flying. Where will you go then?"

Begley and others also point to the postgraduate school assignment as a shore duty tour, a factor in making their decision. "The fact that you can go back to the cockpit after graduation is important."

School officials point out that in many cases, individuals may be assigned back to their old squadron.

For Naval Aviators who wish to get a head start, the Postgraduate School also offers a continuing education program of self-study credit courses that can be taken at the officer's current duty station. The courses not only enhance selection opportunities for postgraduate education, but can ease the transition in the early phase of graduate study and reduce the course time requirements while the student is at the Naval Postgraduate School.

Rear Admiral John J. Ekelund, school superintendent, emphasizes the importance of postgraduate studies for the Naval Aviator.

"Naval Aviation, by necessity, will be one of the areas where the Navy will be operating on the leading edge of technology, and where we must be able to manage resources so as to maximize combat capability if we are to be an effective deterrent — or to win, if required to fight.

"To meet the challenges, it is essential that our aviation community continue to develop a cadre of operational aviators who meet the Navy's subspecialty requirements, through graduate education, in the technical, operational and managerial areas."

Lt. Grant Begley, aeronautical engineering student at the Naval Postgraduate School.

Information on programs at the Naval Postgraduate School is available by calling autovon 878-2491, commercial (408) 646-2491, or by writing the Naval Postgraduate School (Code 31), Monterey, Calif. 93940. Information on continuing education is available by calling autovon 878-2558 or commercial (408) 646-2558, or by writing the Office of Continuing Education (Code 500).

Stuffed brief cases, coats and ties and writer's cramp are part of academic life at the Postgraduate School.

Located just south of San Francisco, the Naval Postgraduate School at Monterey is part of some of the most beautiful scenery along the California coast.

TOUCH AND GO

Sic 'Em, Dogs

This pack doesn't come from Green Bay or play football, but they played a significant part in a big game recently during NATO exercises in the North Atlantic and Arctic Ocean areas. The *Dogs* of Fighter Squadron 143 participated in Exercises *Ocean Venture*, *Magic Sword* and *Ocean Safari* when deployed aboard the carrier *Dwight D. Eisenhower*.

The squadron flew combat air patrol, surface surveillance, attack, and early warning missions over a four-week period. Defending *Ike* during one phase, the *Dogs* were praised for shooting down the only major air strike launched against their carrier.

While surface ships and attack squadrons were involved primarily in the war at sea, VF-143 was called upon to shift combat roles daily, hourly and even by the minute. On one occasion, while engaged in air combat maneuvers with British *Harriers* from HMS *Invincible*, the *Dogs* were called upon to break off for the more serious role of intercepting and escorting Soviet *Bear* reconnaissance aircraft.

North of the Arctic Circle, with visibility sometimes less than a half mile and sea states moving the carrier deck in excess of 20 feet, some of the older *Dogs* remarked that it was the worst operating weather they had ever experienced. At one point, the squadron's F-14 *Tomcats* were coming aboard *Ike* in fog that had cut visibility to less than one-quarter mile. They were one of the few squadrons in the exercise that were not diverted to a Norwegian airfield.

During exercises in the North Sea, VF-143 was called upon to defend *Ike* against a remarkable mix of attacking aircraft, including F-104s and F-16s from Norway and Denmark, and F-4s from Germany. *Vulcan* and *Jaguar* bombers from England kept the *Dogs* running. Flying was not restricted to open ocean operations. The squadron also was called upon to provide fighter escort for Carrier Air Wing Seven's interdiction strikes into Denmark and Germany.

After four weeks of intensive flying, liberty in Lisbon, Portugal, and Portsmouth, England, was a welcome change.

Dogs from VF-143 escort a Soviet Bear.

Age is a State of Readiness

Naval Air Reserve Logistics Support Squadron 53's venerable C-118 aircraft may be in the twilight of their years but they're still a step ahead of the boneyard and keeping up with the operational power curve.

The NAS Memphis-based unit with a complement of 35 selected reservists flew 4,000 miles across the Atlantic recently to provide support to the Sixth Fleet forces. During the two weeks of active duty for training, the unit was hosted by VR-24 in Rota, Spain.

According to squadron skipper Commander Richard Graner, the active duty period was "an opportunity for VR-53 reservists to shine, and shine they did." The deployment had them hopping from country to country in the Mediterranean and Europe, and in virtually every kind of weather the area had to offer.

JO2 Dan Holmes

A VF-211 TARPS-configured F-14A carries missile muscle.

Smile for the Pod

Reconnaissance camera-clicking was updated this year when Fighter Squadron 211 became the first to deploy with the new tactical air reconnaissance pod system, better known as TARPS. During their Indian Ocean deployment aboard *Constellation*, *Fighting Checkmate* flyers got plenty of practice watching the Soviet bear watching them. *Checkmate* executive officer Cdr. Larry Ernst and RIO Ltjg. Matt Laskowski were the first to use the new photo pod system when Soviet *Bear* reconnaissance aircraft entered the carrier's operating area.

According to Ltjg. Laskowski, the old standard issue 35mm camera carried in the cockpit took pretty good photographs, "but, compared to the imagery provided by TARPS, it and everything else pale by comparison." He said, "The fact that carrying TARPS in no way impairs the fighter mission capability is icing on the operational cake."

With the TARPS-configured F-14A *Tomcat*, the *Checkmates* established another first by launching two aircraft to provide surveillance of Soviet ships in the area.

Cdr. Ernst gives credit to the squadron's behind-the-scene support, noting that their own team of TARPS maintenance and support and intelligence people provide the final results.

During the predeployment operational readiness exercises, VF-211 demonstrated the compatibility of TARPS with the fighter mission. During one phase, with TARPS cameras rolling, the squadron hit with three *Phoenix*, two *Sparrow* and four *Sidewinder* missiles for a perfect nine-for-nine score. In one long-range shot, Cdr. Steve Husak and RIO LCdr. Eddie Powers coped with intensive deception jamming, to bag at long range, a drone simulating an enemy bomber with a live warhead AIM-54 *Phoenix* missile.

The squadron will celebrate its 36th anniversary this May, and recently marked a total of 10,000 accident-free hours of flying.

Ltjg. Matt Laskowski

AirLant Reservists Keep Active

Three Naval Air Reserve outfits recently spent a weekend training with the Naval Air Force, Atlantic staff in Norfolk, sharpening the skills they will need if ordered to mobilize as part of that active duty staff.

Naval Air Force, Atlantic Units 0293 from NAS Willow Grove, 0172 from NAS Glenview, and 1086 out of NAS Norfolk would lose their individual reserve identity during mobilization and be integrated into the ComNavAirLant staff. Mobilization of the three units would augment the staff by more than 150 senior reserve officers and enlisted personnel from the air, surface and staff communities.

The weekend training was designed to aid the active duty staff and reserve augmentation personnel in developing efficient and strong-working relationships. Saturday, the reservists became acquainted with the working environment, and with active duty staff members and other reserve unit personnel. The reservists were able to plan individual annual two-week active duty training periods that best fit in with the needs of respective work centers. Reserve personnel in the communications office were able to plan their training five months in advance to coincide with a scheduled exercise. Through this interchange it was discovered that certain other reservists were qualified to operate specific computers in the event of mobilization.

Members of the active duty staff at Commander, Naval Air Forces, Atlantic, discuss weekend-away training activities with reservists at the staff's NAS Norfolk headquarters.

For the remainder of the weekend, reservists performed designated jobs in their respective work centers. All the assignments involved the resolution of actual problems encountered by ComNavAirLant.

"The weekend-away training greatly contributed to our unit's readiness. With this and future exercises, we will be able to more easily integrate our unit into the ComNavAirLant staff, thus fulfilling our mission," said Captain H. J. Lynch, commanding officer of Unit 0293.

Lt. John J. Chernoski

VFP-306 Active In Arizona

The Marine Corps Air Station near Yuma, Ariz., lies close to the California border. The weather there is clear, sometimes with scattered clouds and temperatures hovering between warm and balmy. Flying conditions were ideal for the 40 men from VFP-306 on a one-week active duty period, and were a dramatic change from rapidly deteriorating December weather at the reserve unit's home base near Washington, D.C.

The squadron took advantage of the pleasant climate to schedule three two-plane launches a day and occasional night navigation and special mission flights. Flying four RF-8G *Crusaders*, the pilots followed training routes planned by the air intelligence department and photographed everything from dams and roads to towers and mountains. The squadron maintenance department kept them flying to the tune of 120 total hours for an average of 20 hours per pilot.

The venerable RF-8G *Crusaders* caused some comment while parked at Yuma. "Hey, what would it take to get me a couple of hours in one of your planes?" was a question frequently heard by the reserve pilots during the squadron's deployment. A very small number of F-8 *Crusaders* are still in active service, all of them the RF-8G photo reconnaissance configuration. The colorful history of the aircraft includes the nickname "MiG Master," recalling the *Crusader's* Vietnam record against the MiG-17 and MiG-21.

According to squadron skipper Commander L.E. Johnson, it was a successful training deployment. "I'm very proud of these men," he said. "We got some good training for the newer pilots and we're on top of the program."

VFP-306 is stationed at NAF Washington, D.C., a Navy enclave at Andrews Air Force Base.

LCdr. Peter B. Mersky

Real Time Prime Time Ranger

More than a thousand *Rangermen* and their dependents made their TV debut during a CBS taping session aboard *Ranger's* flight deck last November in port at NAS North Island, San Diego, Calif. The taping was for a Suzanne Somers' CBS Special which was seen by viewers across the nation last month.

The daily routine aboard a carrier provides little chance for fun and relaxation, and breaks are welcome, although few and far between. The sights and sounds of this break were received with resounding enthusiasm as Suzanne Somers serenaded and entertained the crewmen. Clad in a *Ranger* T-shirt in one routine, she got a standing ovation and exclaimed that she had never worked with any group who were so cooperative and extraordinary. Although some of the acts were done over and over again for tape-editing purposes, *Ranger's* sailors needed no prompting to cheer and applaud.

Marie Osmond, Gladys Knight and the Pips, and "Geraldine Jones," otherwise known as Flip Wilson, also performed. Suzanne and the others made a special effort after the show to tape a holiday message for those navymen and women overseas and on duty in the Indian Ocean. But it was *Ranger* who was lucky enough to get the genuine article.

PH1 Terry Mitchell

The Fokker

Like a good shepherd, Fokker Maritime of the Spanish Search and Rescue Service keeps watch over the sea lanes in its assigned area.

Salt Water Sentinel

by Terry C. Treadwell

"It's a forgiving aircraft that's fun to fly" says Lt. Kevin Flannery of the Fokker UC-27 at the Naval Air Development Center (NADC), Warminster, Pa. It is the only one of these planes that the Navy owns and is often the focus of curiosity when it lands at other naval air stations. Pilots who fly the UC-27 are usually P-3 qualified and have completed a two-week course with USAir at that airline's school in Pittsburgh. Although the Fokker is currently employed as a utility aircraft, plans call for the installation of test equipment so it can be put to work as a project aircraft.

NADC's Fokker is the Fairchild-built U.S. version of the type which is in service with a number of airlines around the world. But a more recent version of this aircraft called the *Maritime* has been configured especially for sea

F-27

UC-27 of the Naval Air Development Center, Warminster, Pa., is the Fairchild-built U.S. version of the Fokker F-27.

surveillance duties and acquired by several countries for use in a variety of patrol missions.

The Spanish Search and Rescue Service, for example, uses three *Maritimes* to cover Spain's two Flight Information Regions. One of these extends from the Franco-Spanish border on the west coast into the Bay of Biscay to the northern boundary of Portugal, while the other runs from the southern boundary of Portugal through the Strait of Gibraltar into the Mediterranean and ends at the eastern terminus of Spain's border with France.

The three Fokker aircraft commanded by Lieutenant Colonel Eugenio Jack operate from Las Palmas in the Canary Islands because of its central location in reference to the operating areas. There is plenty of international air and sea traffic to keep track of and Lt.Col. Jack's planes provide ready assistance to any in distress.

Upon locating a downed aircraft or a stricken vessel, the SAR plane may drop rescue equipment including as many as three dinghies, each capable of holding 30 persons. While this is taking place, helicopters or rescue vessels are called to the scene while the aircraft maintains contact overhead.

The Netherlands government operates two Fokker *Maritimes* in the Caribbean to provide search and rescue service to the Dutch Antilles. They replace two aged Lockheed *Neptune* aircraft. Other coastal countries such as Angola, Peru and the Philippines, use the F-27 to satisfy expanding requirements for overwater surveillance in connection with fisheries claims, marine pollution and other maritime matters.

Fat Albert

By Lieutenant Morgan Smith

Above, the all Marine C-130 crew (l-r): SSgt. Dave Eckley, SSgt. Dale Tinline, Maj. Ken Hines, GySgt. Herb Vogt, SSgt. Dan Speaker, Capt. Charlie Meyer and GySgt. Jesse Wagstaff. Right, Fat Albert Airlines flies near the Blues' delta formation. Packed with 12 1/2 tons of spare parts, tools and 30 personnel, Fat Albert is truly the workshop with wings.

"*Blue Angel* Nine, this is Sherman Tower, you're cleared for takeoff on zero seven left."

"Roger, *Blue Angel* Nine, cleared and switching. Have a good day and see you Sunday."

Blue Angel Nine, the Marine Corps' C-130 *Hercules* which supports the Navy's Flight Demonstration Squadron, is the big white, blue and gold multiengine transport that always sits near the runway where the *Blue Angels* perform. The C-130, known to the squadron as "Fat Albert," has become the most important aircraft in the *Blue Angels'* inventory.

The second aircraft of its type to be assigned to the squadron, the current C-130 is in its eighth year of continuous service with the *Blues*. During the annual eight-month air show season, Fat Albert flies the equivalent of eleven and one-half times around the world. Taking off from NAS Pensacola, Fla., on the Thursday morning prior to the departure of the demonstration jets, the C-130 flies to the weekend show site to prepare for their arrival. "Fat Albert has missed only one air show in 11 years and that was because of a fodded engine. However, the show went on, thanks to assistance provided by another Marine Corps C-130 squadron," said Major Ken Hines, one of the *Blues'* C-130 Marine pilots.

The Marine Corps' Flying Billboard, as Maj. Hines calls Fat Albert, is one of the Marine Corps' contributions to the Navy and Marine Corps recruiting effort.

Packed with twelve and one-half tons of spare parts, support equipment and 30 maintenance crewmen, the C-130 is the first to arrive and the last to leave each show site.

Fat Albert is manned by an all-Marine crew. The pilots, Majors Chip Perrault and Ken Hines and Captain Charlie Meyer, and the crew consisting

Blues' Workshop with Wings

PH2 David Loveall

of GySgts. Jesse Wagstaff and Herb Vogt and SSgts. Dale Tinline, Dan Speaker and Dave Eckley, ensure that the *Blues'* maintenance crew and support equipment arrive safely.

The *Blue Angel* maintenance crew refers to the C-130 transport as Fat Albert Airlines as it keeps a regular schedule between mid-March and mid-November, flying to more than 45 cities around the U.S. and Canada. While at air show sites the big bird stands ready to provide logistical support to the squadron. Fat Albert has helped the *Blues* maintain their proud tradition of never cancelling an air show because of maintenance difficulties.

Twice a year, Fat Albert demonstrates the short takeoff capabilities of the C-130 when it performs a jet assisted takeoff (JATO). It is then that Fat Albert gets a chance to come from behind the scenes and demonstrate one of the roles that has made the C-130 legendary. With eight solid propellant rocket bottles attached to the fuselage, Fat Albert leaps into the air on just under 1,000 feet of runway. The eight JATO bottles collectively produce more than 8,000 pounds of additional thrust and burn for approximately 15 seconds, enabling the aircraft to become airborne in one-quarter the normal takeoff distance.

Sunday evening, following the conclusion of the weekend air show, the brightly painted C-130 once again returns home to NAS Pensacola. When the chocks are finally in place and the engines are shut down, the 30 maintenance support crewmen say goodbye to the C-130 until the following week when they start the process all over again.

Without Fat Albert standing by, it would be difficult for the *Blue Angels* to complete their show schedule with the success and perfection that has made them famous.

PEOPLE·PLANES·PLACES

Awards

For the second consecutive time, the *Chargers* of VR-161 have won top honors in the *Midway* tailhook competition. In individual competition, three of the squadron's pilots – Cdr. Larry Cook, Lt. Andy Caputi and Cdr. Scotch Comer – were listed in the top ten.

The Naval Aviation Schools Command recently awarded PR2 Todd Jargowsky the command's first Aviation Warfare Specialist designation. This designation signifies achievement of specific skills, knowledge and military experience which qualify an individual for unique service in Naval Aviation. It is also reserved for individuals who consistently perform at the highest level.

Five NAS Oceana search and rescue aircrewmen and 48 pilots and aircrewmen from HS-12, aboard *America*, were recently presented the Sikorsky Helicopter Rescue Award which recognizes skill and courage in helicopter rescue operations during life-threatening situations. The Sikorsky Rescue Award program began in 1950 and recognizes Igor I. Sikorsky's often stated belief that "the story of air rescue by helicopter forms one of the most glorious pages of human flight."

For the second time in the last three years, VP-4, Barbers Point, Hawaii, has surpassed all competition for the 1981 ComPatWingsPac Tactics Bowl Award. The annual award is presented to the patrol squadron that contributes the most to enhance the broad capabilities of the P-3 *Orion*. Competition was based on submissions in five categories: tactical study, ASW newsletters, tactical facts, computer programs and the squadron's participation in the Tactics Bowl problem solving. The *Skinny Dragons* who were principally responsible for VP-4's earning the award were LCdr. Bob Williams, Lts. Gary Harrell and Bill Welch, and Ltjg. Steve Ellefson.

The 1981 Golden Anchor Award winners for career motivation have been announced. Representing the Naval Aviation community in the Pacific Fleet are: *Kitty Hawk*, VA-22, HC-11, NAS Barbers Point and NAF El Centro. The award was established in 1970 to provide a visible means of recognition for commands attaining excellence in career motivation programs. The winning commands were considered to have aggressively pursued strong training, off-duty education, professional development and counseling programs.

VA-15 topped all competition during the recent ComLAtWing-1 bombing derby. Led by C.O. Cdr. Mike Nordeen, the *Valions* walked away with the top individual and team honors. In addition to the skipper, the team consisted of LCdr. Bernie Ritzert and Lts. Scott Ruppert and Jim Jenkins. LCdr. Carl Tankersley and Lt. Doug Dickman solved the complex war-at-sea problem. Fifty-six pilots from 14 squadrons took part in the exercise. Lt. Ruppert received the Pat Anderson Award, named after the late LCdr. Pat Anderson and given for individual bombing excellence.

Records

Cdr. Robert S. Smith, skipper of VA-174, reached a milestone in his flying career when he recorded his 2,000th flight hour in the same A-7B *Corsair* in which he flew his first A-7 hour on May 15, 1970, at NAS Cecil Field. A-7B BuNo 154373 was on loan to the squadron from the Naval Air Engineering Center, Lakehurst, N.J.

Some flyers marked personal career milestones. From VF-103, C.O. Cdr. T. W. Triebel achieved 3,000 hours in the F-4. VA-147's skipper, Cdr. "Tank" Bledsoe, logged his 2,000th hour in the A-7E. Lts. John

Hope and Randy Wood, VAQ-136, have each flown 1,000 hours in the EA-6B. LCdr. Bob Hanson of VR-30 is believed to be the first Navy pilot to top the 1,000-hour mark in the UC-12B.

Several squadrons reached accident-free flight-hour milestones: VP-4, 75,000 hours; VA-174, 20,000; and HSL-34, 10,000. Other squadrons recorded safe flying in years: VAW-114 and VP-68, 11 years; VQ-4, 10; VS-38, 8; and VA-25, 5.

NAS Alameda-based *Coral Sea* recorded 300,000 arrested landings on December 24, 1981, when an F-4N caught the number three wire during operations in the South China Sea. The *Phantom II* was piloted by Lt. William C. Throne and RIO Lt. Patrick D. Mahaffey, both of VF-154.

Honing the Edge

HAL-4 Huey gunships operating with Special Boat Unit 22 during Bold Eagle 82.

Last fall, HAL-4 flew five HH-1K gunships to Eglin AFB, Fla., in support of Commander Naval Special Warfare Group Two's participation in Exercise *Bold Eagle 82* and joint coordinated training with units of the Air Force's Special Operations Wing. The *Red Wolves* provided insertion/extraction of SEAL squads, photo reconnaissance and close-air support of Special Warfare units. The squadron also escorted Air Force UH-1Ns on low-level day and night multiship missions in company with Air Force AC-130 gunships.

A nine-plane formation of P-3C *Orions* signalled the return of VP-49 to Jacksonville last December after a five and one-half month deployment to NAF Sigonella, Sicily. While deployed, the *Woodpeckers* participated in exercises with both U.S. and NATO forces, conducting surveillance of Soviet forces, search and rescue missions, medical evacuation flights and antisubmarine warfare operations. As a result of its ASW efforts, VAdm. William Rowden, ComSixthFlt, presented the squadron with the Sixth Fleet's Hook 'Em Award for ASW excellence. The *Woodpeckers* have also attained 140,000 hours of accident-free operations, encompassing nearly 20 years of safe flying.

Et cetera

The Navy has become a tradition in many families. Sons have been following their fathers into the Navy for years. Recently, another chapter was added to the long list of father/son accomplishments when Cdr. John P. Haines and his son, Ltjg. Kevin T. Haines, put on their new ranks at the same time. Cdr. Haines is the Reserve Maintenance Officer for VR-55 at Alameda, while Ltjg. Haines flies the A-7E with VA-122, Lemoore.

AOAN Lance Arbogast of VA-122 is a 275-pounder who hopes to come away from this year's National Judo Championships at Indianapolis, Ind., with the gold medal. "I think he can do it," says Navy Coach JOCS Joe Ciokon. "He's big and strong and has recovered from an injury that hurt him last year." Arbogast is a first-degree black belt in the sport and teaches self defense and judo at NAS Lemoore. Judo experts in the aviation community who may wish to compete for the Navy in the nationals are invited to phone coach Ciokon at autovon 951-6115 or commercial (714) 437-6115. Training camp is scheduled to start April 12 for the April 22-25 national championships.

PH3 Thompson

Capt. R. S. Owens (l.), Midway's skipper, explains some of the bridge equipment to retired RAdm. Heijiro Abe.

Retired RAdm. Heijiro Abe, a veteran of Pearl Harbor and the Battle of Midway, whc was a junior officer in the Imperial Japanese Naval Air Force, visited *Midway* in Yokosuka last fall. He talked with *Midway's* skipper, Capt. Robert S. Owens, and recalled his experiences during WWII. RAdm. Abe was surprised at the carrier's size and complexity but said some things never change — that the sound of chipping paint and the smell of fresh paint aboard *Midway* was the same as when he was aboard the Imperial Japanese Navy's aircraft carriers in the 1940s.

Rescue

The U.S. Coast Guard has commended four members of the Patuxent River search and rescue team for their assistance in the evacuation of three crewmen of the tugboat *Blair*, which sank in the Chesapeake Bay last December. RAdm. John D. Costello, Commander of the Fifth Coast Guard District, paid tribute to the crew: pilot LCdr. Robert Sloan, copilot Lt. Jerry Sochowski, crew chief AMH1 Steve Byers and swimmer AEAN Kevin Anderson. The admiral said that the team's use of a barge as an impromptu helo pad to embark the men and their first-aid efforts to embark the men and their first-aid efforts en route to the naval hospital were in keeping with the highest humanitarian traditions and were indicative of the best spirit of interservice cooperation.

Anniversary

VA-15, NAS Cecil Field, celebrated its 40th birthday on January 10, 1982. The *Valions* came into being barely a month after the attack on Pearl Harbor in 1941 when they were established as VT-4 aboard *Ranger*. During the years, the squadron flew the SBD, TBM, AD and the A-4, until June 1, 1969, when as VA-67, it was redesignated VA-15, flying the A-7B. The squadron transitioned to the A-7E in 1975. The *Valions* have made 19 cruises to the Med and two to the Gulf of Tonkin. They are presently assigned to *Independence*.

Change of Command

HMH-363: Lt.Col. Arthur J. Picone relieved Lt.Col. James B. Barr.

HSL-33: Cdr. Timothy J. Hayes relieved Cdr. Robert K. Doane.

MCAS(H) Tustin: Col. Robert G. Mitchell relieved Col. Bennie Mann.

NAS Point Mugu: Capt. John M. Tallman relieved Capt. James E. Webb.

NAS Whidbey Island: Capt. Stewart D. Langdon relieved Capt. Weston H. Byng.

Pacific Missile Test Center: RAdm. Edwin Barrineau relieved RAdm. Fred H. Baughman.

VA-56: Cdr. Edwin E. Shipe III relieved Cdr. Charles S. Mitchell.

VAW-126: Cdr. Jack W. Bookhultz relieved Cdr. Gary M. Witzenburg.

VC-12: Cdr. Kenneth L. Blood relieved Cdr. Robert C. Johnson.

VF-41: Cdr. Hank Kleemann relieved Cdr. Art Cebrowski.

VF-101: Cdr. Richard Moon Vance relieved Cdr. Dave Frost.

VF-301: Cdr. T. F. Leonard relieved Cdr. D. L. Bourland.

VF-302: Cdr. Thomas E. Lecours relieved Cdr. Kenneth W. Pettigrew.

VS-30: Cdr. Richard Hulse relieved Cdr. Richard Shurts.

VS-33: Cdr. A. T. McGuffey relieved Cdr. Charles B. Hoover.

Professional Reading

By Lieutenant Commander Peter Mersky, USNR

Ethell, Jeffrey and Price, Alfred, *Target Berlin: Mission 250: 6 March 1944*. Jane Publishing, Inc., 730 Fifth Avenue, 8th Floor, N.Y., N.Y. 10019. 1981. 212 pp. Photographs, maps, diagrams, indexed. $19.95.

For a change of scene, this book offers a look at the non-Navy side of air combat in WW II. A heavily-researched and documented account of the first large daylight raid on the German capital, it makes good use of firsthand information from both sides of the conflict. Recollections of American and German flight crews, from well-known aces to aircrewmen, enable the reader to get close to the action. It is a story of determination versus desperation and of skill and courage among participants on both sides. The accompanying maps and diagrams are well drawn, easy to read and complement the text. The photos are, for the most part, new and unpublished. There are several appendices which tell of the fate of individual aircraft and crews shot down during their missions. There are also details of German defenses at this critical stage of the war. *Target Berlin* is a well-written account of this aspect of the air war in Europe.

Kilduff, Peter, *US Carriers at War*. Stackpole Books, Box 1831, Cameron & Kelker Streets, Harrisburg, Pa. 17015. 1981. 128 pp. Illustrated. $16.95.

This is a large format-type book with many good black and white photographs, which deals exclusively with U.S. carrier operations in WW II. This means that most of the book is devoted to the Pacific war although Atlantic operations also are covered. Some of the photographs have been published before but many have not. There is, as one would expect, heavy emphasis on combat action, which makes for exciting reading. One of the final chapters uses a lot of quotes from Commander David McCampbell, top scoring Navy ace, to highlight his fast-moving wartime exploits. The author is an accomplished aviation historian and the material is carefully researched and well presented. *US Carriers at War* is a good reference book for Naval Aviation buffs and historians.

Reynolds, Clark G. and Time-Life Books. *The Carrier War*. Time-Life Books Inc., 777 Duke Street, Alexandria, Va. 22314. 1982. 176 pp. Illustrated, maps, indexed. Can be purchased as part of the Time-Life *Epic of Flight* series or as an individual copy. Regular binding $12.95. Deluxe binding $19.95.

The latest in the *Epic of Flight* series, this book is of special interest to Naval Aviation enthusiasts. It is well laid out, with excellent renderings of some of the more important U.S. and Japanese carrier aircraft of WW II. Most of the book is concerned with operations during that conflict, but some attention is given to earlier development and employment of the aircraft carrier. There are several well-drawn maps of key engagements such as the Battle of the Coral Sea and the Battle of Midway in 1942. It also includes some interesting photos of dioramas constructed by *Life* magazine soon after Midway. These miniature scenes were then photographed to depict selected events since action shots were rare or nonexistent. *The Carrier War* is a fine addition to a great series.

Olds, Robert. *Helldiver Squadron*. Zenger Publishing Company, P.O. Box 9883, Washington, D.C. 20015. 1980. 263 pp. Illustrated. $15.00.

Another of the Zenger series of reprints this book, originally published in 1944, covers the adventures of VB-17 aboard USS *Bunker Hill* in the last two years of WW II. The first squadron to take the Curtiss SB2C-1 *Helldiver* into combat, VB-17 participated in the November 11, 1943, attack on the Japanese bastion on Rabaul. The author not only tells his squadron's story but that of the *Hellcat* and *Avenger* squadrons which also served in *Bunker Hill*, a ship which acquired the nickname "Holiday Inn" because many of its raids took place on holidays. This volume gives a valuable insight into carrier operations of the period and the trials and tribulations of flying the much maligned SB2C dive bomber.

Garrison, Peter. *CV: Carrier Aviation*. Photographs by George Hall, Presidio Press, 31 Pamaron Way, Novato, Calif. 94947. 1980. 101 pp. Illustrated. $8.95.

This paperbound book is an excellent portrayal of the large, complex, colorful and sometimes dangerous world of modern carrier operations. In relatively few pages, the author and photographer have succeeded in putting this unique subject in focus in terms a layman can understand, and a third tour lieutenant commander would find familiar. Illustrated with well-chosen color and black and white photographs which cover ships, aircraft and carrier sailors at work, *CV* is a good book on the subject at an affordable price.

Letters

Blue Angels' 1982 Schedule

April	
3-4	NAS Corpus Christi, Texas
10-11	Greenville, S.C.
17-18	NAS Cecil Field, Fla.
25	NAS Norfolk, Va.
May	
1-2	MCAS El Toro, Calif.
8-9	Sheridan, Wy.
15-16	Randolph AFB, Texas
22	Ellington AFB, Texas
24	U.S. Naval Academy, Md.
29-30	NAEC Lakehurst, N.J.
31	McGuire AFB, N.J.
June	
5-6	NAS New Orleans, La.
12-13	Detroit, Mich.
19-20	NAS Lemoore, Calif.
26	Beale AFB, Calif.
27	NWC China Lake, Calif.
July	
3-5	Orlando, Fla.
10-11	Ft. Collins, Colo.
17-18	Elmendorf AFB, Alaska
24-25	Dayton, Ohio
31	NAS Miramar, Calif.
August	
1	NAS Miramar, Calif.
7	NAS Whidbey Island, Wash.
8	Seattle, Wash.
14-15	Pasco, Wash.
21-22	NAS Brunswick, Maine
28-29	Grand Junction, Colo.
September	
4-6	Cleveland, Ohio
11-12	Nashville, Tenn.
18	NAS Patuxent River, Md.
19	Lynchburg, Va.
25-26	NAS Oceana, Va.
October	
2-3	Salinas, Calif.
9-10	Charleston, S.C.
16-17	NAS Point Mugu, Calif.
23-24	NAS Barbers Point, Hawaii
30-31	MCAS Kaneohe Bay, Hawaii
November	
6-7	Kissimmee, Fla.
13-14	NAS Pensacola, Fla.

Three-place Tomcat?

Being an ex-RIO, I always appreciate reading *Naval Aviation News*. On the inside cover of the February 1982 issue, there is a picture which I find somewhat intriguing. The caption indicates that LCdr. Steve Golle was the RIO and the plane was piloted by LCdr. John Ault. The photo, however, was taken by Don Jones. Since when does the F-14 accommodate three crew members.

Thomas G. Dater
ex-F-4 RIO, VF-11

In your February 82 issue of *Naval Aviation News*, I was quite puzzled with your inside cover shot of the NFO in an F-14 banking over Dallas, Texas. With both the NFO and pilot named, how did Don Jones photograph the picture? We all know there's only room for two in the *Tomcat*.

PHAN Phil Cavali
VF-124 FRAMP
NAS Miramar, CA 92145

Your photo caption on the inside front cover, *NANews*, February 1982, lists the pilot of the F-14 as LCdr. Ault and the NFO as LCdr. Golle. It also says the photo was taken by Don Jones. The question is, how can three different names appear concerning a photo taken inside a two-seat aircraft? Just curious!

Lt. Jay L. Reedy
PAO, VP-10
NAS Brunswick, ME 04011

Ed's note: There were no hitchhikers aboard the F-14 in question and it remains a two-place aircraft. To get this unusual shot, photographer Don Jones secured his camera to the handhold above the RIO's instrument panel using a specially designed adapter. A reflection of this arrangement can be seen in the RIO's visor. The equipment employed was an Olympus OM-2 with a 16-mm fish-eye lens. Jones preset the timing and f-stop for anticipated conditions aloft. RIO Steve Golle remotely activated the shutter during a series of steep turns to stop the action for NANews readers.

USS St. Lo

Author is collecting material for a book about USS *St. Lo* (ex-*Midway*) (CVE-63) and VC-65. Seeking photos, letters, journals, personal accounts, etc. Crewmen or surviving relatives are invited to write to Michael F. McKenna, 11 Humboldt Avenue, Providence, RI 02906.

Battle of the Coral Sea

I am presently researching a book on the Battle of the Coral Sea, covering the action minute by minute from both sides. I would like to hear from anyone who took part in or had anything to do with the battle. Photos taken around the time, recollections, and any other loaned material will be carefully handled and returned.

Jeff Ethell, Aviation Writer
Rt. 1, Box 519
Front Royal, VA 22630

Reunions, Conferences, etc.

VA-175 enlisted crew (1950-54) reunion planned for June 1982 in Washington, D.C. For information, please contact: R. V. Crowley, 12 Miami Avenue, West Roxbury, MA 02132, (617) 323-0180.

VFP-63 invites all F-8 drivers past and present to attend the last Crusader Ball on April 16, 1982, at the Officers' Club, NAS Miramar, San Diego, Calif. VFP-63 is scheduled for disestablishment on June 30, 1982. For more information or to make reservations, call LCdr. S. S. McCullom at (714) 271-3651/2/3 or autovon 959-3651/2/3.

Old Timers Reunion, NAS Squantum/NAS South Weymouth, May 29, 1982. Contact: George Belocus, 1117 Whitman St., Hanson, MA 02311, (617) 447-3667.

Airborne Mine Countermeasures Reunion, HM Officers' Tow Ball, will be held on April 1, 1982, in the Tidewater area of Virginia. Advance reservations are required. Call LCdr. Gary Tornatore of HM-12 at (804) 444-1279/3209 or autovon 690-1279.

USS Essex (1942-1969) reunion, June 23-26, 1982, South Bend, Ind. Contact Bob M. Morgan, 3841 S.W. 29th Place, Ocala, FL 32674.

Naval Air Transport Squadron reunion, August 15-20, 1982, Pensacola, Fla. For information, write Capt. Alvin R. May, USNR(Ret.), 1015 W. South Avenue, Independence, MO 64050.

SQUADRON INSIGNIA

SH-3G picks up the Mk 30 torpedo for reuse in target exercise.

A TA-4J in flight over the runway at Roosevelt Roads, Puerto Rico.

Fleet Composition Squadron Eight (VC-8) has a long and successful history dating back to 1958. Initially commissioned as Guided Missile Service Squadron Two at Chincoteague, Va., the squadron transferred to its present location at Naval Station, Roosevelt Roads, Puerto Rico, in 1959 and was redesignated Utility Squadron Eight in 1960. The present designation was assigned in 1965. VC-8 provides aircraft and target services, logistic support, sea/air rescue and medevac support to the Atlantic Fleet and allied units. With its two decades of experience, the squadron specializes in realistic multiple target drone and simulated threat presentations in the modern electronic warfare environment. The *Redtails* are led by Commander Frederick R. Purrington.