naval aviation news

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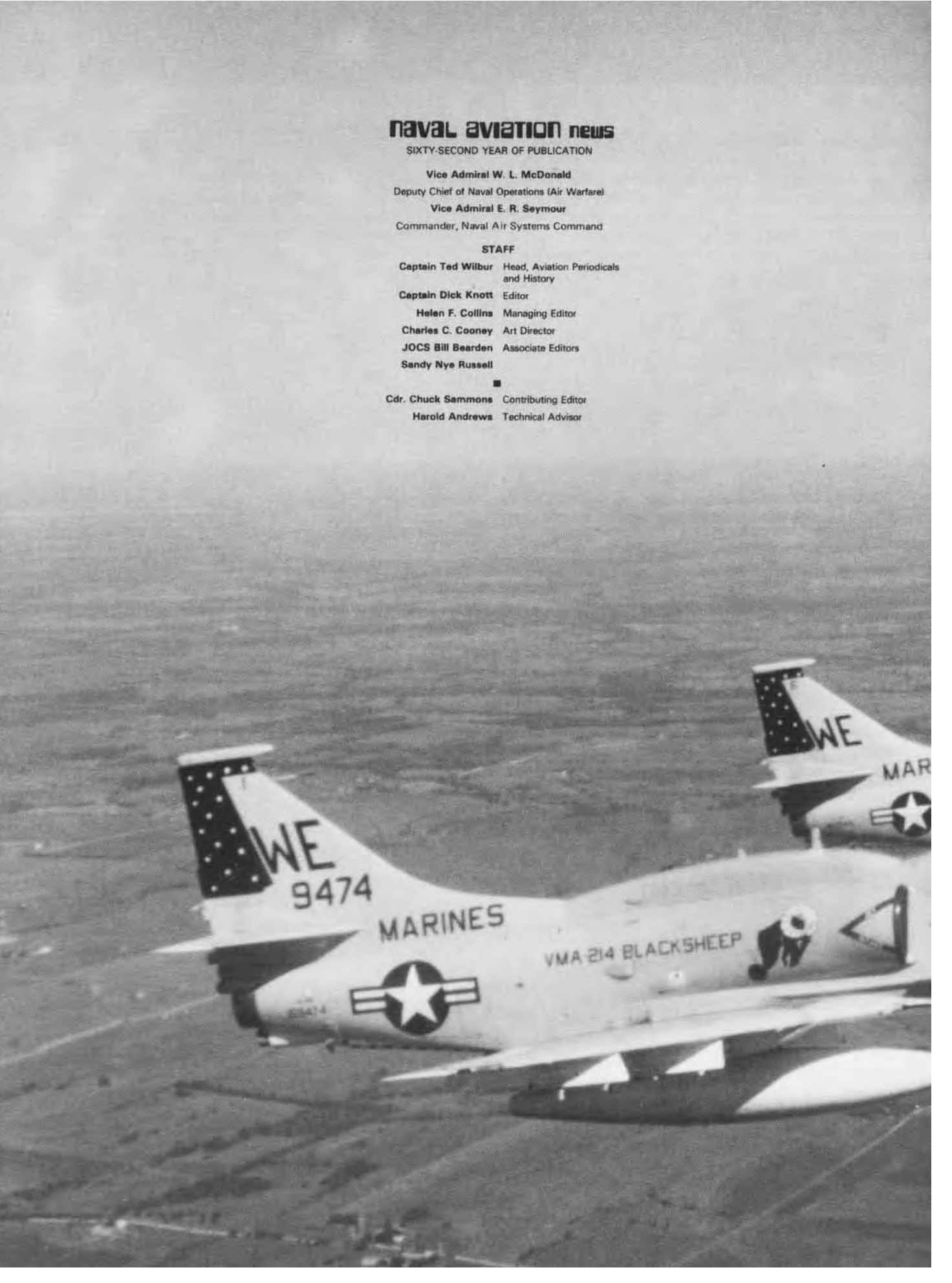


COVERS — Wraparound design depicting 50 years of the Navy-Grumman experience (see feature beginning on page 8) is courtesy of Ron Hill, Art Director, Grumman Aerospace Corporation. Here, Harry Gann of McDonnell Douglas filmed two Marine A-4Ms of Black Sheep Squadron VMA-214, in formation with Goodyear-built FG1D, owned and flown by Wayne Williams.

editor's corner

Crusader Combination. Vought Corporation's F-8 *Crusader* began its eventful service life in 1955. Test pilot John Konrad was at the controls of an XF8U-1 when it went supersonic during its first test hop on May 25 of that year.

Photoreconnaissance versions of the *Crusader* continue to serve in the Navy today and John Konrad is still with Vought, a subsidiary of the LTV Corporation, as director of test operations. He is shown in a 1980 photo, left, and a similar pose after test flying an early *Crusader*.

Epic work. What is 16 feet tall, stretches 52 feet wide, rests comfortably on a 300-pound stretcher, portrays power and movement, and reflects a gripping story of heroic patriotism in naval history?

A painting of the USS *Arizona* by John Charles Roach, combat artist. This epic work of art is being executed at the Navy Museum in the Washington Navy Yard. The painting is scheduled to go on display this fall at the Arizona Memorial in Pearl Harbor.

Roach's love and perception of the sea, as revealed in his marine art, was inspired by his father, a naval architect. He also gained considerable experience as an on-the-scene Seventh Fleet combat artist. Several of his nearly 200 works of art are on permanent display in the executive corridors of the Pentagon. He also did an *Old Ironsides Sketchbook* for the Navy's Bicentennial celebration.

I Am. Ten years ago, I came into this world, a product of American ingenuity, advanced technical knowledge and scientific expertise. I was glad that I would serve under the American flag because I knew I would receive tender loving care, be respected for what I am, with my limits and capabilities – and be free to fly as often as possible. I've been to the four corners of the earth, to isolated overseas bases, and have flown coast to coast in CONUS. I saw action in Southeast Asia. I've landed on the shortest airstrip there is. I've been displayed to the public. Once or twice I was voted the hangar queen. And, although it grounded me for awhile, I was proud to lend some of my assets so that my comrades might fly. During my 10 years, I've had four facelifts, consumed a considerable amount of oil and fuel, have worn out countless tires, and have been configured, modified and preserved – you name it.

Now that I'm old and gray, and slated for the boneyard, I wish to thank the plane captains who gave me daily nourishment, the mechs who nurtured my J52 heart, the electricians for my power, the technicians for my sophisticated impulses, the metalsmiths for keeping my lines smooth and functional, the ordnancemen for my security, the supply types for my health, the maintenance chiefs for my airworthiness, the pilots who took me on my travels and adventures – and most especially the AZs, the record keepers, who computed my flight hours, documented my activities and showed the world that I am not just an ordinary bird. I AM A SKYHAWK!

AZ1 Ernesto M. Paraiso, VC-7
NAS Miramar, Calif.

DID YOU KNOW?

Lightning Tests

Statistics show that every all-weather aircraft will likely be struck once in its flying lifetime by lightning. A sudden flash, a quick jolt and in less than a second the charge can travel the length of the fuselage, arcing away from the tip of the tail.

At McDonnell Aircraft, engineers test a fighter's vulnerability by actually generating lightning and firing the bolts at precision-crafted plane models. Initial lightning tests use high-voltage bolts about 25 to 30 feet long to determine the points where lightning likely would first strike an aircraft. These attachment points vary with different aircraft designs. Then the lightning's path along the aircraft is tracked. This is important because an aircraft actually flies through a

lightning bolt, so that more than seven lightning re-strikes can occur along the fuselage as it moves through the bolt.

From 200 to 300 lightning tests are made on each aircraft design. Once all possible attachment points and vulnerable areas are known, wing thickness can be adjusted if necessary to protect fuel tanks, metal coatings can be sprayed onto non-conductive surfaces, or wires can be rerouted and shielded. These are just some of the protective methods available.

In photo, laboratory-generated lightning strikes wingtip of a scale model of an AV-8B.

Aircraft Environment

Can man survive, in regard to his environment, inside and outside an aircraft? Seven men at NATC Patuxent River, using the facilities of three laboratories and a mobile van packed with sensitive scientific gear, measure and analyze the environment of an aircraft to see if it is compatible with human existence.

Don Harris, head of the bioenvironmental section of the aircrew systems branch, says, "We look at both the interior of the aircraft as well as the area around it outside to make sure every aspect of the environment is healthy and

DID YOU KNOW

safe for both aircrewmen and ground support personnel. We support almost every unit on base that has problems or projects concerning aircrew and ground crew environment."

Aircraft environment control systems. "We test the heating, cooling and pressurization systems of the cockpit and, in the case of large planes such as a P-3, the cabin areas as well."

Life support and oxygen systems. "We are currently working on a project testing an on-board, oxygen-generating system in the AV-8A *Harrier*. It normally takes a significant amount of equipment to produce oxygen for aircraft and this takes up a lot of space. The ships to which the *Harrier* will be assigned are small and will not have the room. Therefore, the Navy is trying to come up with a system built into the aircraft's fuselage."

Analyzing supplies of liquid oxygen (LOX). "We certify that the LOX being delivered by the supply company to NATC Patuxent River and Andrews Air Force Base is free from contaminants, and that the tanks in which the LOX is stored, the transfer carts which move the LOX to the aircraft, and converters in the aircraft are clean."

Routine tests of ambient air in cockpits. "The gas analysis laboratory does the routine testing during test flights of developmental aircraft, and for Navy Preliminary Evaluation trials and Board of Inspection surveys."

Noise. "We analyze noise levels inside and outside the cockpit. We are concerned with communications problems and noise hazards for crewmen inside the plane, and hazards to maintenance personnel working around the aircraft outside when the engines are running."

Radiation hazards. "We define potential radiation hazards, electronic emissions such as those from radar systems, and determine their location to protect maintenance personnel working on the systems."

Photometric measurement. (Photo pertains to light in this case.) "We measure the ambient or natural light in the cockpit, as well as the brightness and color of instrument lights. We insure that the pilot will be able to see his instruments in bright sunlight at high altitudes and that he will notice a warning light should it flash on. Instrument lights must also be bright enough to be seen but not so bright as to impede night vision."

Downwash from vertical takeoff aircraft, primarily helicopters. "We measure the velocity, magnitude and direction of the wind coming off the rotors of the aircraft, looking for hazards to persons or equipment on the ground below the aircraft. It would not do the Navy any good to have a helicopter which could lift 20 tons, if the downwash from it blew equipment and personnel off the flight deck of a carrier.

"While the data collected is analyzed here in the bioenvironmental section, we rely on the technical support directorate to install test equipment in the aircraft. In newer developmental aircraft, the environmental control system test equipment is built into the fuselage. This is the case with the F/A-18 *Hornet*, and we monitor the contractor's tests to insure that the system performs as intended."

Commissioning

USS *Fletcher* (DD-992), a *Spruance*-class destroyer, was commissioned July 12, at the Ingalls Shipbuilding Division of Litton Industries, Pascagoula, Miss.

Fletcher is named for Admiral Frank Jack Fletcher (1885-1973), a WW II carrier force commander and winner of the Navy's two highest awards, the Medal of Honor for heroism at Vera Cruz, Mexico, in 1914, and the Navy Cross for command of the destroyer USS *Benham* (DD-49) during WW I.

In WW II, Admiral Fletcher was senior task force commander in the Battles of the Coral Sea, Midway, and the Eastern Solomons. He also commanded three carrier task groups covering the Tulagi-Guadalcanal invasion in the Solomon Islands, August 1942.

The ship is designed primarily for antisubmarine warfare, and to operate with carrier battle groups and amphibious assault groups. The ship also has a shore bombardment capability. Armament includes two 5-inch, 54-caliber guns, an antisubmarine rocket launching group, torpedoes and antisubmarine helicopters.

Desert Hornet Sand billows behind an F/A-18 *Hornet* strike fighter, in the Mojave Desert. The *Hornet*, normally based at NATC Patuxent River, Md., flew to Edwards Air Force Base in southern California to test its ability to land while being buffeted by heavy crosswinds. One Navy and two McDonnell Douglas pilots made 119 landings in the desert, with crosswinds as high as 30 miles per hour.

C-2A In-flight Refueling Feasibility tests conducted recently by the U.S. Navy and Grumman Aerospace at NAS Oceana, Va., demonstrated in-flight refueling of the C-2A *Greyhound* COD. Although the refueling probe was dry and tests didn't include transfer of fuel, Navy and Grumman pilots performed successful drogue engagements involving KA-6D and C-130 tankers. Refueling altitudes varied from 11,500 to 14,000 feet at speeds of 220 to 235 knots. The C-2A showed good stability and control characteristics throughout the envelope, proving the feasibility of extending the aircraft's range through in-flight refueling.

Grampaw Pettibone

Memo from Gramps

Old Gramps recently came upon some golden words in the May issue of *Aerospace* magazine which I feel obliged to pass along. The following, taken out of context, reflects RAF Squadron Leader Barrett's feelings on pilot factor accidents:

"To err is human, as we have often been told, and I cannot see anything that will radically alter man's fallibility. Aircrew error has become a very emotive issue. It is the aircrew who have the final responsibility and, more often than not, it is the aircrew who also have the unenviable task of trying to sort out the situation when it is all going to worms. But we have become too accustomed to shooting the pianist even when the piano is out of tune or when the score is wrong. Simply because the accident situation occurs at the final man-machine interface (i.e., pilot-aircraft) we should take more care before we rush in and blame the pilot. Conversely, when the pilot is skillful enough to rescue a situation that was not of his own making, we should be much more ready to heap acclaim upon him. However, the human being will continue to show its limitations – limitations in perception, in understanding, and in reaction and implementation. No, let us think twice before shooting the pianist; seldom will he not have been giving of his best even if his best still costs us an aeroplane. On the other hand, any breaches of discipline should be dealt with swiftly so the distinction can be made more easily by those on the sidelines."

Indian Ocean Bingo

"Red Griffin 711 – your signal 'bingo!' Nearest land bears 090 degrees, 1,900 nautical miles . . . ."

" . . . are you kidding me?"

The Lockheed S-3A *Viking* had returned to the landing pattern overhead the carrier, following a somewhat fatiguing five-hour mission. During preparation for landing, the crew was unable to extend the aircraft's tail hook. Executing all the prescribed emergency procedures and several long-shot possibilities, and coordinating with squadron maintenance technicians manning tower frequency, they were still unable to effect tail hook extension.

After carefully assessing their dilemma, they selected the divert option. Taking on 14,000 pounds of fuel from two A-7Es and one KA-6D tanker they headed east, destination mid-Indian Ocean island of Diego Garcia.

Five and one-half hours and 1,935 nautical miles later, the tired and hungry crew of *Red Griffin 711* landed safely, ending a ten-and-one-half-hour flight, for the longest carrier-based divert in history.

Grampaw Pettibone says,

Holy great circle routes! This may be one for several record books: *Guinness World Records, Diverts I've Known and Loved* and *Aviator Gamesmanship.*

To old Gramps the most impressive thing about this evolution was the timely planning, excellent coordination and professionalism of the total carrier/air wing/aircrew team. Their action resulted in a normal and safe landing ashore, with no aircraft damage (and a little reward of a night's liberty for the crew?). Too often, situations similar to this have, through lack of coordination and/or untimely decision, decayed into a "no-options remaining" situation with unfortunate losses of both men and machines.

The alternate solution to this problem – a nylon barricade arrestment – would also have been a record first for the S-3. Some aircraft damage would have been expected with nylon strap burns on canopy and windscreens, damage to refueling probe fairings, nose gear doors, wing leading edge, antenna, and possibly fodded engines. Fortunately, this option was not required.

This team did it right and old Gramps is proud! Additionally, the VS-38 aircrewmen handled their situation like the pros they are supposed to be, and rightfully deserve their commendations as AirPac "Pros of the Week."

For the record, Gramps will recog-

ILLUSTRATED BY Osborn

nize the 1,935-nautical-mile divert as the longest U.S. Navy bingo recorded. However, our USAF "cousins-in-blue" in the early sixties logged a 3,300-plus-mile divert (without in-flight tanking), following a U-2 missed approach at Guam, landing at Hickam Field, Hawaii. (Gramps invites contributions from potential B-52 candidates.)

Also for the record, old Gramps would like it to be known that he is not entirely fooled by all this, for it is well known that any aviator worth his salt will do anything for a little extra flight time – a cold beer at the end of a long flight, and a night's liberty ashore (gamesmanship extraordinaire).

From the Mailbag:

You'll get a bang out of this!

"I was walking chocks on the port side of an F-14 heading forward on the port side of the ship right between the hangar bay divisional doors. The aircraft was moving very slowly when suddenly the safety petty officer, who was near the aft part of the aircraft, blew his whistle. Wheel chocks were put in place.

"The aircraft director had a dispute with the safety petty officer about why he had blown his whistle. The director then told the safety petty officer to get off the hangar deck. He resumed moving the aircraft. I was to stay near the main landing gear to get the chocks in quickly when they were called for. An air conditioning cart was parked about three feet from where the landing gear would pass, so I waited until there was enough room for me to fit in between them and the plane. It was dark in this area due to shadows from the aircraft and red lights in use in the hangar bay. Seeing no hazards, I continued to follow the aircraft – chocks in hand. I moved near the landing gear, facing it for a few brief seconds, awaiting a signal for chocks-in. Suddenly the aircraft main gear tire exploded!

"I felt my legs blown back from the pressure, followed by a terrific pain in the left knee and ankles. I ran to a clear spot aft of the aircraft, stood there for a few seconds, and then sat down on the hangar deck due to the intense pain in my legs."

Grampaw Pettibone says:

Great sufferin' supervision (or lack thereof)! This is enough to blow your socks off – with legs attached. It's stuff like this that leaves old Gramps speechless. So I've enclosed some appropriate comments from the investigation safety CPO: "This is one very lucky blueshirt. He was cut and badly bruised and may require knee surgery. But he could have been hurt a lot worse. He may have lost his eyes or even his life. The safety petty officer had seen a tie-down chain with the hook pointed up vice down, and stopped the move. Why then was the hazard not removed prior to continuing?

Every day we face some hidden hazard aboard a carrier, but it really hurts when we see a problem and do nothing about it. Every job we take has some calculated risk involved, but this task rapidly went from calculated risk to near uncontrolled disaster. Anytime an aircraft is to be moved it takes a team of heads-up, alert people to ensure this type of accident doesn't occur. Here we have an example of a supervisor failing to use the inputs of his men. Think about it. How many times have you done basically the same thing but got away with it? When will your luck run out?"

I couldn't have said it better, Chief. Thank you for your guidance and your concern.

NAVY-GRUMMAN EXPERIENCE

Fifty Years of Naval Aviation

For 50 years, Grumman aircraft and technology have been serving Naval Aviation, spanning an era in aviation history which advanced from the early propeller-driven biplanes to jet-powered supersonic aircraft. It all began with the company's founders, Roy Grumman, Bill Schwendler and Jake Swirbul, aviation pioneers who met the challenge of the air by bringing to the aircraft industry engineering skills and the true engineer's zeal for finding the best possible solution. Innovative concepts and sound engineering produced rugged high-performance carrier-based aircraft which have met the nation's defensive and offensive needs in war and peace.

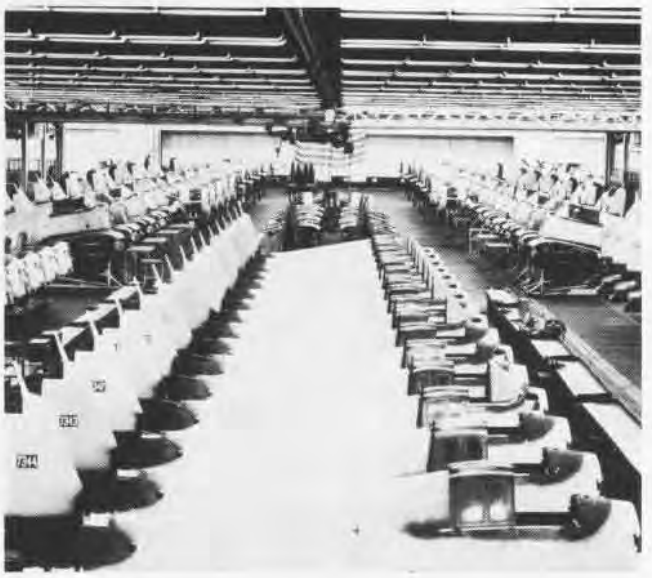
Today, Grumman is developing new generations of aircraft to meet future Naval Aviation needs for lighter, smaller, and better combat planes which can be produced economically in large numbers. Early warning and tactical jamming aircraft systems are constantly upgraded to meet future threats.

Model A floats were Grumman's first Navy contract. These early floats, above left, on the production line at the Baldwin, Long Island garage, met the need for greater flexibility of naval planes at sea. Roy Grumman, Bill Schwendler and Jake Swirbul established the Grumman tradition. Here, the F3F, sometimes called the "Barrel Fighter," was the last of the Navy biplane fighters.

Holding the Line in the Pacific

Grumman planes accounted for two-thirds of enemy aircraft destroyed over the Pacific. The F4F *Wildcat* was the only Navy fighter available to take on the Japanese *Zero* in the grim months following Pearl Harbor. The F4F had greater firepower, self-sealing tanks, armor protection and "bring-em-back-alive" ruggedness. The *Wildcat*, the company's first monoplane fighter, featured Roy Grumman's "sto-wing" pivot mechanism which allowed the wings to fold back vertically against the fuselage, nearly doubling the number of fighters that could be stowed and handled aboard a carrier.

The Navy took the offensive to the enemy with the F6F *Hellcat*, an air superiority fighter that far outclassed the *Zero*. The *Hellcat* was the most valuable carrier-based fighter in the Pacific with a kill-loss ratio of about 20 to 1. Carrier-based Grumman TBF *Avenger* torpedo bombers played a major role in helping U.S. forces seize and maintain the initiative in the Pacific, and in turning back the Nazi U-boat offensive that endangered vital sea lanes in the European theater.



Clockwise from above, TBF Avenger was a torpedo bomber with a large bomb-bay capacity and aft-firing guns for self-defense. Hellcat production at Grumman set production records, 605 in one month. F4F Wildcat was an all-metal, single-winged fighter. The prototype XF4F-2 first flew in 1937. F8F Bearcat was Grumman's last prop-driven fighter. It was often called "the fighter pilot's dream." Opposite page, F6F Hellcats were known for reliabity and durability in combat. The 5,155 enemy aircraft downed in the Pacific added to the plane's reputation.

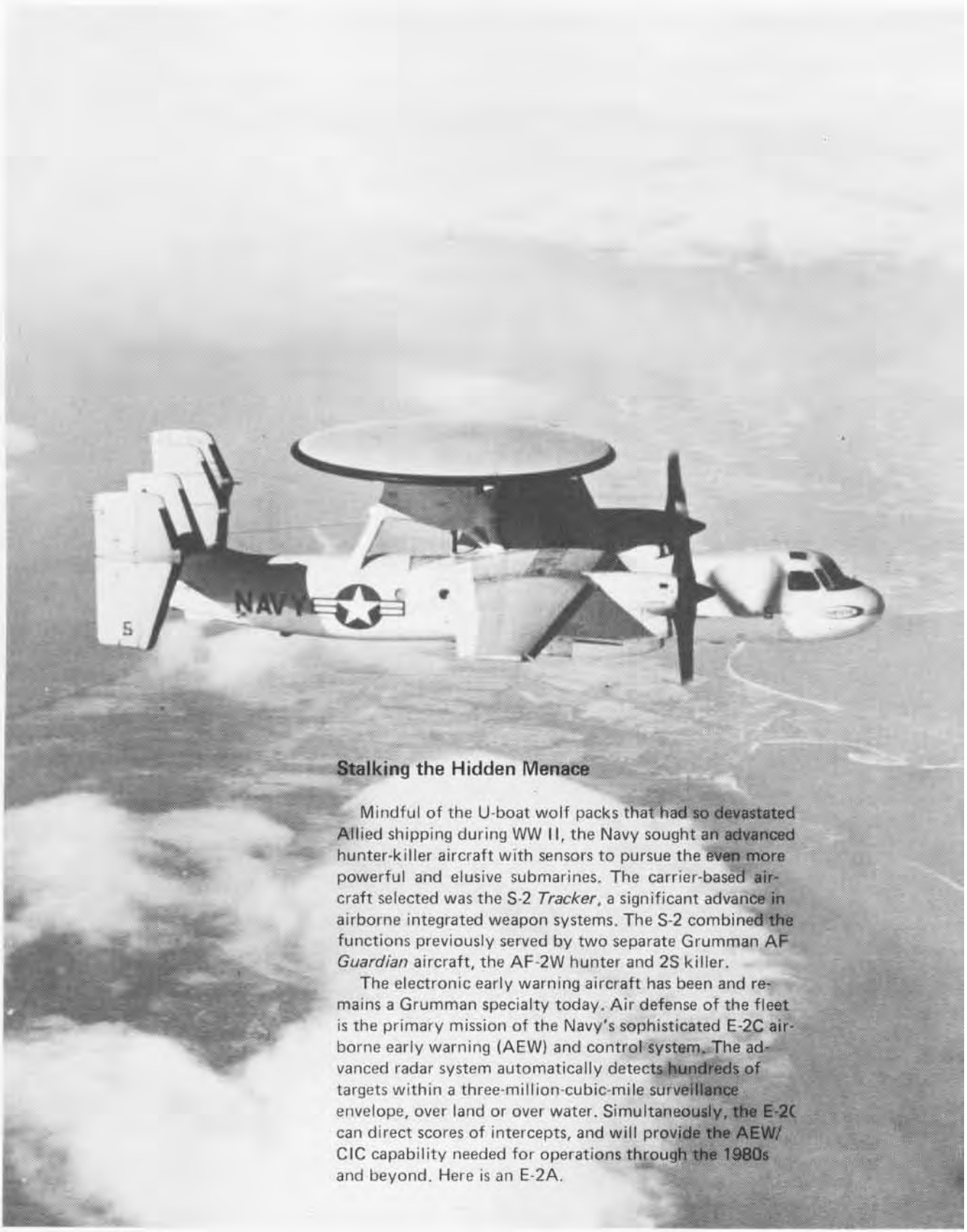
Ready for the Challenge in Korea

Air superiority of United Nations forces kept the North Koreans and their Red Chinese allies from overrunning the entire Korean peninsula. The Grumman F9F *Panther* carried a major share of the Navy's air operations, and on November 9, 1950, a *Panther* became the first carrier-based jet to down a Soviet-built jet – a MiG-15.

Also used as fighter-bombers, *Panthers* attacked railway bridges, trains, supply columns and similar targets to disrupt the enemy's lines of communication and slow the advancing forces.

The Navy's first operational carrier fighter to utilize the new high-speed, swept-back wing configuration was the F9F-6 *Cougar*. The *Cougar* was a derivation of the *Panther* series and became the first Grumman aircraft to attain transonic speeds.

Clockwise from above, AF-2 Guardian antisubmarine hunter-killer team, with electronic and magnetic search and detection systems. The hunter member of the team carried its radar in a large belly radome and was nicknamed "Fertile Myrtle." F9F Panther was the first carrier-based jet to enter combat in Korea. E-1B Tracer, introduced in 1958, became the "eyes of the fleet." Carrying a huge overhead radome, it was the forerunner of today's advanced E-2C Hawkeye.

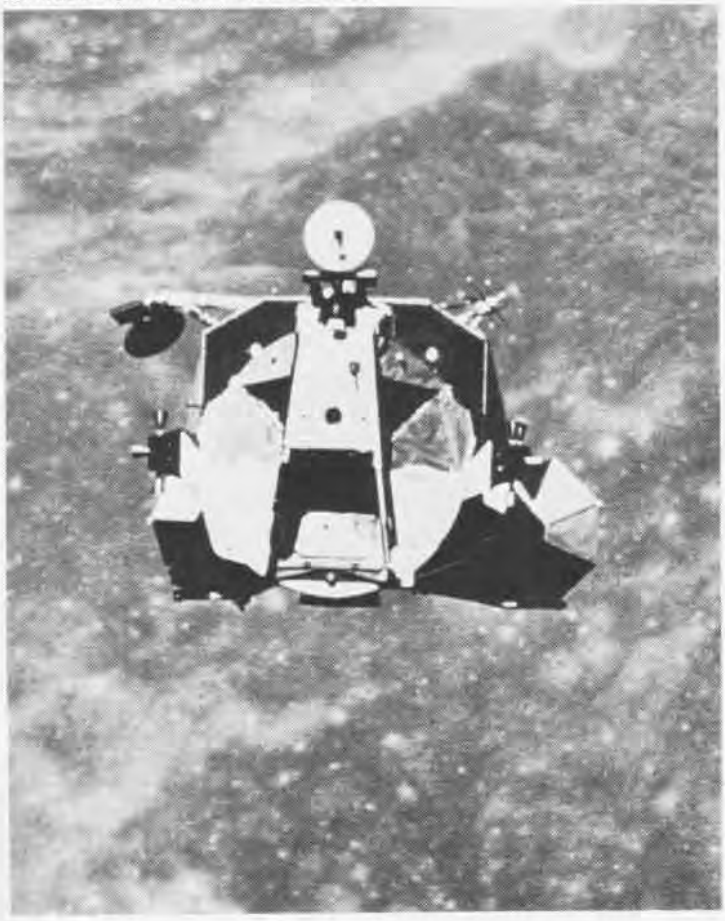


Stalking the Hidden Menace

Mindful of the U-boat wolf packs that had so devastated Allied shipping during WW II, the Navy sought an advanced hunter-killer aircraft with sensors to pursue the even more powerful and elusive submarines. The carrier-based aircraft selected was the S-2 *Tracker*, a significant advance in airborne integrated weapon systems. The S-2 combined the functions previously served by two separate Grumman AF *Guardian* aircraft, the AF-2W hunter and 2S killer.

The electronic early warning aircraft has been and remains a Grumman specialty today. Air defense of the fleet is the primary mission of the Navy's sophisticated E-2C airborne early warning (AEW) and control system. The advanced radar system automatically detects hundreds of targets within a three-million-cubic-mile surveillance envelope, over land or over water. Simultaneously, the E-2C can direct scores of intercepts, and will provide the AEW/CIC capability needed for operations through the 1980s and beyond. Here is an E-2A.

The F11F-1 Tiger's performance was suited to the Blue Angels' requirements and served them for 10 years. The Blues fly in tight formation as they salute the Statue of Liberty in New York Harbor. Lunar module incorporates technological skills and engineering advancements to provide safe transportation between the command module and the lunar surface.



Angels Fly the "Coke Bottle"

In 1954 the F11F-1 *Tiger* introduced a new shape to high-performance aircraft design, the "coke bottle" fuselage. A special version of the *Tiger* (F11F-1F) set altitude speed records, flying to over 76,000 feet and at more than 1,300 miles per hour.

Air show visitors across the country have been thrilled by the *Tiger's* performance in the hands of the Navy's precision flight team, the *Blue Angels*. The team commenced operations in 1946 with the F6F, and flew Grumman aircraft for the next 22 years.

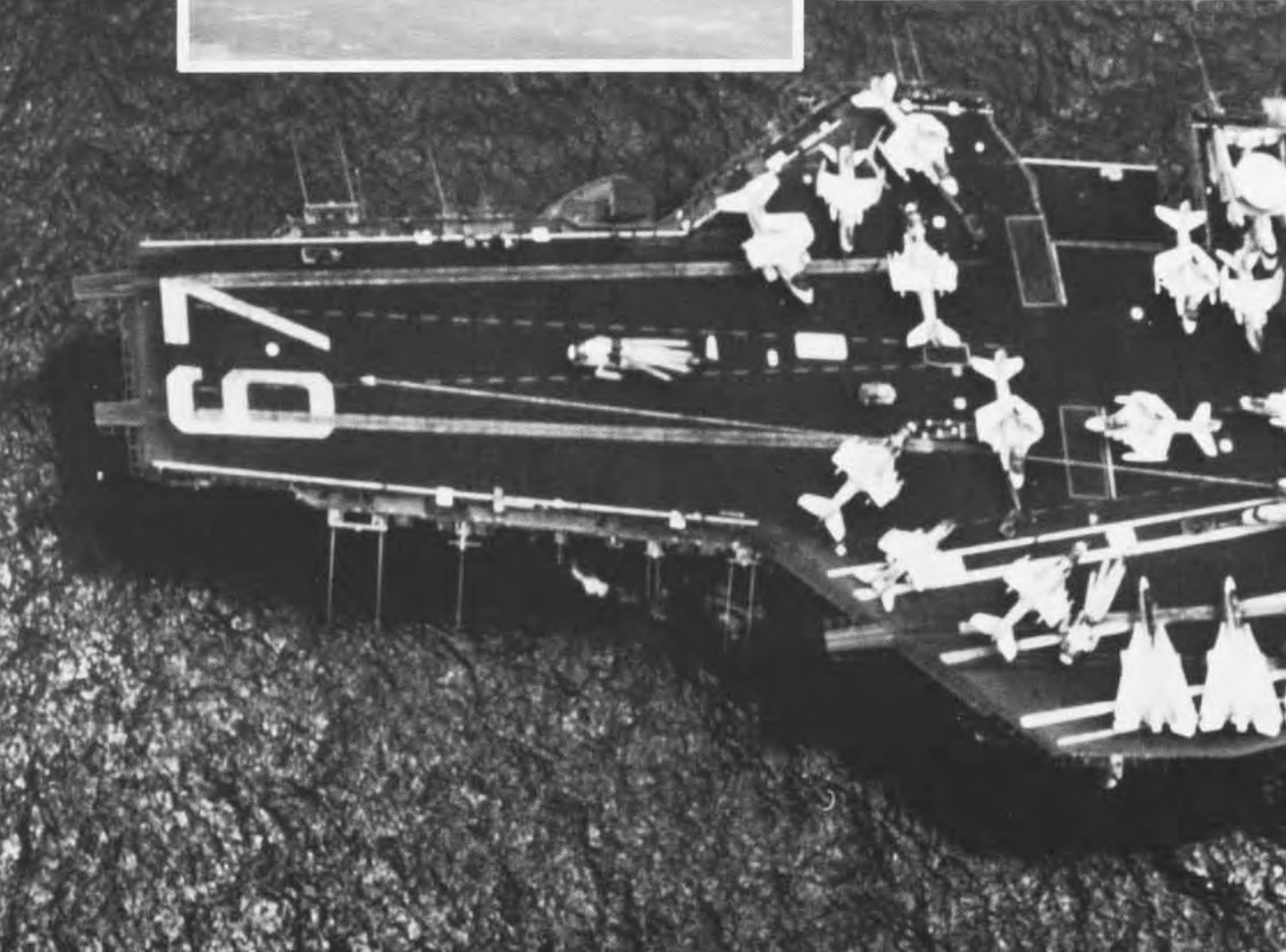
To the Moon by Grumman Ferry

Grumman dedicated its engineering and design skill to the country's efforts to land men on the moon and return safely to earth. To build the *Apollo* lunar landing vehicle, it employed advanced technology which had been developed in producing ever-more-advanced generations of naval aircraft and electronic warning systems.

Still standing on the lunar surface today are six scorched descent stages — the landing legs, engines, and launch platforms of the NASA/Grumman lunar modules that had safely transported 12 Americans to walk on the moon.

More than a million parts, and the work of Grumman, hundreds of subcontractors and vendors across the nation went into the making of the LM. Although the LMs could never be flight-tested, being designed to operate only in space, they functioned with near perfection.

A Continuing Force
in Today's Navy



It takes a team of specialized aircraft, each unexcelled in its category, to counter the multiplicity of threats faced by the Navy's carrier task forces. On today's carriers, Grumman aircraft serve in these categories:

F-14 *Tomcat* fighter is unmatched in its fleet air defense and maritime supremacy.

E-2C *Hawkeye* is the fleet's primary airborne warning and control system.

A-6E *Intruder* medium attack plane provides a carrier with all-weather/night strike capability.

EA-6B *Prowler* is the most powerful tactical jamming system in the current U.S. inventory.

KA-6D tanker gives the carrier's air wing extra margins of effectiveness and safety.

C-2 *Greyhound* cargo/personnel transport provides vital logistic support.

The Quality of Navy Life

"Habitability is that military characteristic of U.S. Navy ships which is directed toward satisfying personnel needs which are dependent upon physical environment." (OpNavInst 9640.1, 13 October 1979)

NavSea Habitability Improvement Self-Help Program

Shipboard habitability problems have plagued the U.S. Navy for many years. At the end of WW II, living conditions aboard U.S. Navy ships could be described as "floating foxholes." As the country moved into a peacetime environment and the civilian society prospered, the military services initiated measures to improve their facilities.

In the early 1950s, as the result of an intensive study of shipboard habitability conditions, standards were proposed for doubling the amount of space allocated to habitability facilities. The first set of environmental control standards was announced in 1957 by the Chief of Naval Operations. This instruction emphasized the significance of ship habitability and delineated the goal " . . . to provide a comfortable and pleasant environment, an appropriate degree of privacy, adequate fittings and furniture, proper stowage for personal effects and adequate services to provide for the needs of the individual."

However, theory does not always become reality. In spite of this early directive, the impetus behind habitability declined. Funding constraints and an aging fleet hampered progress in improving shipboard conditions. Weaponry, propulsion and stability projects got wide engineering attention, advanced in design sophistication, and received higher priority than habitability when funds were limited. Even though it was recognized that habitability, with its direct impact on personnel effectiveness, is a ship characteristic of equal importance with other military features (OpNavInst 9330.5), progress in shipboard habitability was virtually nonexistent.

Sporadic attempts were made to upgrade living spaces, but these were limited and did not correct basic deficiencies. Poor living conditions prevailed on ships despite concentrated programs and efforts at improvement, and they contributed to a decline in the reenlistment rate.

The problems continued through the 1960s, with the Board of Inspection and Survey documenting overcrowding in berthing spaces, poor ventilation, and substandard sanitary facilities. Testimony from CNO and fleet commanders also confirmed that living conditions on board ship were unsatisfactory and detrimental to personnel retention. A December 1965 Navy Department message, dealing with undesirable habitability conditions in many aircraft carriers, expressed major concern about continued combat effectiveness and personnel retention. It requested that addressees study carrier habitability and internal space problems, and make appropriate recommendations for corrective action.

In 1966, a Secretary of the Navy task force report stated, "To the extent that poor shipboard living conditions

contribute to personnel retention problems and to rapid personnel turnover, with its attendant inefficiencies and financial losses, neglect of habitability is inconsistent with prudent management practice." Admiral E. P. Holmes, CinCLantFlt, also stated that unsatisfactory habitability conditions stem from years of lack of emphasis on the human side of weapons systems.

The Navy tried again to tackle the problem of habitability and after an extensive investigation in 1972, a series of ShipAlts, or ship alterations, were designed to improve standards and provide solutions to chronic habitability problems. These actions also were caught in the funding squeeze and only the worst situations were improved.

By 1975, shipboard habitability had become a major concern. Ship commanding officers often voiced complaints about crew living conditions. The problems recognized in the Sixties continued, intensified by reports of intolerable noise levels and disregard for personal privacy. Neglect of the human side of ship systems was having its effect on the Navy.

One positive reaction to the long-standing habitability problem was the efforts made by individual ship's forces to improve conditions. On some ships, crews had taken matters into their own hands and had made unauthorized alterations. Although the changes were not always successful and were sometimes made without regard to weight, combustibility, or damage control considerations, the idea of a ship's force making self-improvements was intriguing.

In principle, the concept of self-help has advantages since it provides an available and interested labor source. In 1975, the Naval Sea Systems Command (NavSea) capitalized on this potential and organized the NavSea Habitability Improvement Self-Help Program to supplement a ship's force with the necessary management element. A workable and economical method of improving ship conditions finally was becoming a reality.

The NavSea program concentrates on functionalism, durability, and facility maintenance in the most basic habitability areas on board ship – berthing and sanitary spaces. The program is managed and engineered by NavSea, funded by type commanders, and accomplished by a ship's force with guidance by technical advisors. This program has proved to be an economical way for type commanders and ship commanding officers to make their ships more livable. The program improves personal stowage space, privacy, comfort and access, and reduces humidity in sanitary spaces. According to Mackie Burcham, the NavSea program manager, the program works because it combines the design and engineering expertise of NavSea professionals with the enthusiasm and availability of a ship's force to get the job done.

The NavSea program upgrades berthing compartments, sanitary spaces, libraries and recreation-lounge areas, improves clearances, provides for control and use of noncombustible materials, and enhances livability by using coordinated color schemes instead of Navy gray and green. Shower separations are improved and ventilation is modified to control and reduce shower humidity. New equipment, furniture, furnishings and materials, including deck coverings and countertop lavatories, are installed. Greater privacy is achieved with water closet doors, urinal partitions and berth curtains.

A combination of NavSea management and fleet resources ensures that program goals are met. Ship projects under the program are initiated by the cognizant type commander who establishes the funding, assigns the task to NavSea for technical study and engineering requirements, and monitors the project. NavSea then surveys the ship, provides a complete design and determines supply and equipment needs, prepares procurement documents, and contracts technical advisors. A supply activity prepares and monitors contracts for supplies and equipment. The total labor force, provided by the ship, procures standard stock items and tools, and with guidance from NavSea technical advisors, performs all rip-out and installation tasks. Since the ship's force is utilized efficiently as the labor source, type commanders and ship commanding officers have realized tremendous cost savings from the self-help projects.

Basically, the program works because it is ship-oriented. Type commanders, NavSea, and supply activities are all dedicated to providing support and assistance, but the success of individual self-help projects reflects the can-do spirit of the ship's force. The program, which has been received favorably by officers and crew alike, significantly improves the quality of life aboard ship and increases accommodations, with no attendant loss of personal living space. Ship personnel enjoy the new space layouts and are especially receptive when damaged, worn-out and unrepairable equipment and material are replaced with new items. In addition to improved living conditions, the crew reaps other benefits from the program. Ship's force members who participate in installations acquire new skills in plumbing, lagging, welding, silbrazing, and electrical work. They gain pride of accomplishment. Their standards of upkeep are higher and, since the self-help program replaces old equipment with durable easy-to-clean items, maintenance is reduced. A less tangible but equally important benefit is the increase in morale, which could subsequently affect reenlistment rates.

Early projects completed on Atlantic Fleet ships were so successful that the program expanded to include the Pacific Fleet. Today, the program is still growing as word of self-help spreads. Self-help habitability improvements will never turn a ship into a luxury liner but they make life aboard ship a little more bearable. They are giving each man his own turf, which is important in an environment that makes privacy virtually impossible otherwise. The future of the program is very promising and the key to its continued success is the support by type commanders. A letter from ComNavSeaSysCom to CNO, dated November 23, 1977, states that not only has the program proved successful but that "with austere funding levels, this program is the most desirable, if not the only, means to accomplish these needed improvements." *Prepared by NavSea Staff*

Self-Help Projects Undertaken by Ship's Crews Aboard Some U.S. Navy Carriers

USS Saratoga

Saratoga was a pioneer in the NavSea program by undertaking the first self-help carrier project under the program in 1975. As a result, 150 new crew berths were installed and one crew sanitary space renovated, at a great savings in cost.

USS Forrestal

A more extensive self-help project which remodeled the crew's living quarters aboard *Forrestal* during the carrier's 1976-77 overhaul involved 1,260 berths and 47 crew sanitary spaces. About a year before *Forrestal* entered the yard, the crew organized a welding course on board and sailors were assigned to work teams on completion of the course. A rip-out group removed old berthing and sanitary space equipment, and two construction teams moved in right after rip-out to remodel.

USS Kitty Hawk

In November 1979, *Kitty Hawk* was the winner of the first annual habitability award established by Vice Admiral Robert P. Coogan, Commander Naval Air Force, U.S. Pacific Fleet, recognizing efforts made by individual Pacific Fleet carriers to improve living conditions afloat. The announcement of *Kitty Hawk*'s selection cited the outstanding efforts of her quality of life (QOL) division, a group dedicated to upgrading living conditions throughout the ship. Also cited was the outstanding condition of her berthing areas, especially those spaces normally occupied by her aircraft squadrons. Designation of *Kitty Hawk*'s food services program earlier in 1979 as the best of all Pacific Fleet carriers also contributed to her selection for the award.

The carrier's QOL division provides a core group of people with the necessary skills and experience, who assist other shipboard divisions in upgrading their living areas. The QOL division prepares a plan for each area in need of attention, to bring it up to acceptable standards. Much of the work is then done under QOL division supervision by the people who live in the spaces. Habitability aboard *Kitty Hawk* is an all-hands effort and all hands reap the benefits of more comfortable living quarters and improved personal services. She is the first Pacific Fleet carrier to implement these improvements during evolutions at sea.

USS J. F. Kennedy

Among the Atlantic Fleet carriers, *J.F. Kennedy* was the 1979 winner of the Bronze Hammer Award presented annually to the ship making the most productive effort in

self-help, without any government or civilian contracts.

Kennedy completed a yard period at Portsmouth in February 1980. An article in the March 1980 issue of *All Hands* described how, during the long months of her overhaul, the carrier turned her yard period into an exercise in award winning and morale building while keeping up the quality of life. The ship's crewmen worked in three shifts on berthing spaces and heads, with a fire-watch division on duty during welding. First, the crew removed existing equipment, followed by personnel who prepared the areas and installed color-coordinated berthing equipment, well-lighted heads, and shower stalls with opaque acrylic doors. They added further refinements during the yard period, such as recreation, sports and physical fitness facilities.

Kennedy has a motto, "*Kennedy* cares." It's on buttons and painted on bulkheads. The slogans are visible everywhere and it seems to be a way of life aboard *JFK*, an interaction between shipmates. Self-help efforts don't make everyone want to stay in the Navy but they do keep some in who might otherwise decide to get out.

USS Enterprise

Last year, *Enterprise*, which is at the Puget Sound shipyard for overhaul, began one of the largest habitability projects attempted on any carrier — all of her berthing and sanitary spaces. As JOC Jesse Jose tells the story, " . . . the goal of the self-help program is to provide a comfortable and pleasant berthing environment. The participants are hard-hatted young sailors in dark green coveralls with goggles and respirators, sound aural protectors or rabbit ears, and steel-toed boondockers. The usual tools are chipping hammers and deck crawlers. It's a dusty, noisy game but the team is swinging."

"We're excited about the job," says Senior Chief Quartermaster Richard Taute. "It's challenging and something different. Because we're doing the work ourselves . . . we think the boys take more pride in their work . . . they are working in compartments which will be their own home when the project is over."

Commander R. A. Dykes is the habitability coordinator of the ship's force self-help team, assisted by Lieutenant Commander Donald McConathy. The team is comprised of 320 sailors of different rates and ratings, from different departments throughout the carrier. The habitability division is divided into six parts.

Hab 1 renovates the sanitary facilities. Hab 2 prepares and paints berthing spaces. Hab 3 installs bunks, lockers and new ventilation systems. Hab 4 does the tiling and ensures that the electrical wiring is installed properly. Hab 5 is the backbone, providing supplies for the other four divisions, like chipping hammers, tiles, paint, bunk bases, ironing boards, and recreation tables. Hab 6 cleans vents.

Although *Enterprise*'s self-help project is still continuing during her overhaul, the benefits are already evident from bow to stern.

Here, portside bow quarter view of Enterprise. Top left, chipping away. Bottom left, fire watcher stands by as welder does hot work.

How Self-Help Works Ashore

The problem of habitability is not confined to shipboard. It is not easy to maintain a high level of morale in a sailor whose barracks are bleak, or who faces hours of off-duty boredom because of a lack of recreational facilities.

When Admiral Zumwalt visited the Republic of Vietnam while he was CNO and saw the Seabees' building program there, he was impressed by their ability to guide unskilled indigenous personnel in the skills of engineering and construction. If miracles could be worked in that war-torn, poverty-stricken environment, what would be the results if similar programs were begun at stateside Navy bases and stations in need of improved facilities. Out of this evolved the concept of combining highly-skilled Seabees (the Navy's construction ratings) with untrained station personnel to work on recreation, welfare and habitability projects ashore.

Consequently, the self-help program ashore was established to operate under the technical assistance of Occupation Field 13 (Seabee) personnel and Civil Engineer Corps officers, to capitalize on their combined expertise in the areas of construction and facilities management. More specifically, where they exist, Naval Construction Battalion Units (CBUs) were tasked with providing the technical assistance required to sustain an effective self-help effort.

The ABCs of the self-help program are that the station or other customer provide the required labor as well as the construction materials, and that the Public Works Department, under the guidance of a Civil Engineer Corps officer, provide the overall management and technical assistance required.

OpNavInst 11000.8F states that there is an urgent, continuing need to enhance the habitability of bachelor living quarters and to improve personnel support, welfare, and recreational facilities. In support of the program, CBU Seabees, coupled with station Seabee personnel and self-help sailors, have left their mark at Saufley, Ellyson and Whiting Fields, Pensacola, Meridian, Memphis and Corpus Christi, the latter hard hit by Hurricane Celia in August 1970.

NAS Chase Field, Texas, is an example of how a station goes about solving its particular habitability problems. Obviously, needs vary greatly from installation to installation depending on many factors. An improvement can be as ordinary as a sidewalk, which may not sound much like a people-pleaser unless or until you have slogged through mud along the shoulder of a road on a rainy day or worried about your child walking to school endangered by traffic.

Chase Field is located five miles from Beeville, a typical small rural town which provides little in the way of recreational, social and cultural activities and facilities for air station personnel. The nearest cities with adequate facilities are Corpus Christi and San Antonio, 65 and 95 miles, respectively. The lack of adequate outdoor recreational facilities presents an acute problem since the climate is suitable for outdoor activity most of the year. Therefore, Chase Field has its special habitability and recreational needs, for which it must come up with its own answers.

The self-help program at the air station was well established before the inauguration of the Navywide program in 1970. Air station projects have resulted in improvements to all categories of living quarters and support facilities which are used and enjoyed by station personnel. Various projects have created two recreation areas. The main area contains a four-acre lake, a nine-hole golf course, golf pro shop and restaurant, playgrounds, picnic areas, miniature golf course, archery range, game courts and athletic fields. The secondary area has a playground, family picnic areas, stable and corral with horse care facilities, horse pasture and bridle paths.

All this has been accomplished by station Seabees, assisted by volunteer self-helpers from the station and some of its tenant organizations, with assistance from a Naval Reserve Mobile Construction Battalion, under the overall direction of the public works officer.

Current plans call for further improving habitability of living quarters and correcting deficiencies in other areas such as a bus stop and shelter. A stadium and pavilion will be built mostly from materials salvaged from some of the program's demolition projects.

Annually, the CNO Self-Help Bronze Hammer Award recognizes those activities which have made the most outstanding contribution to improving the quality of Navy life through self-help, using available resources. The success of a self project program is largely dependent on the support given by the air station.

The names of nominees are submitted to the Chief of Naval Operations and the applications are reviewed by a five-member board. Awards are provided by CNO for presentation to self-help winners in each of four categories: where the total enlisted allowance is less than 1,000 with access to a CBU in the immediate area; greater than 1,000 with a CBU available; less than 1,000 with no CBU in the area; and greater than 1,000 with no CBU. The awards are based on the percentage of resources used, ingenuity, and quality of completed projects.

Activities which have been recognized for their excellence in self-help projects that have produced quality improvements – with support from the commands in funds, manpower and materials – include Naval Air Stations Miramar, Alameda and Fallon.

A recent Navy Department message announced the Bronze Hammer winners for 1979. Among those with the best self-help program for improving the quality of Navy life is NAS Key West. NAS New Orleans was a runner-up.

At a quality of life seminar in San Diego in February 1980, Vice Admiral Robert B. Baldwin, Chief of Naval Personnel, stated, "The dissatisfaction of sailors today is everyone's business. We must make the sailor number one."

Above left and right, starting point and station 5 of extensive Parcours physical fitness trail. Left, playroom in child day care center. Below: Left, CBU-407 equipment and operators digging trench for football field and running track. Right, working on spillway for Goliad Dam.

AUTO RUDDER

By Bruce L. Hildreth

The Naval Air Test Center, Patuxent River, Md., is evaluating an automatic rudder interconnect (ARI) that is being developed by NASA for the F-14A *Tomcat*, in a joint Navy/NASA project. Its primary purpose is to improve the *Tomcat's* high angle of attack (AOA) flying qualities. NASA is performing most of the developmental flight testing while the Test Center is flying the F-14A with ARI at various points in its development, primarily to evaluate the system's mission suitability.

F-14A aircrews know that the *Tomcat* exhibits an uncommanded roll oscillation or wing rock at very high AOA units. Therefore, in the air combat maneuvering roll at high AOA, pilots must roll with rudder into the roll, or use rudder with and lateral stick opposite to the direction in which they wish to roll.

While using both rudder and opposite lateral stick produces the highest roll rates, it is also a pro-spin input. If this pro-spin input occurred in conjunction with an engine stall or other emergency, a departure might result and the pilot could quickly find himself *in extremis*.

The ARI is designed to eliminate or reduce wing rock by increasing the roll rate feedback to the differential tail by a factor of four in the AOA range where wing rock is predominant. In addition, a feedback of roll rate to rudder deflects rudder in the same direction as the roll because sideslip is 180 degrees out of phase with the roll rate. This reduces adverse yaw and rolling due to dihedral effect.

The ARI counters roll reversals by reducing differential tail deflection for lateral stick inputs at high angles of attack. Instead of deflecting the differential tail, which causes the adverse yaw, the rudders are deflected. Thus, the ARI is in effect transitioning from controlling differential tail to controlling rudder as the angle of attack increases – just as an experienced pilot transitions from controlling lateral stick (which moves differential tail) to the rudder pedals.

The ARI should make the aircraft more stable at high AOA and therefore make it easier to track an adversary in air combat maneuvering. In addition, it enables the pilot to fly the aircraft using the same technique (lateral stick for rolling). Without ARI at high angle of attack, the pilot is forced to use rudder and/or opposite lateral stick to roll the aircraft. Finally, the ARI increases total differential tail available, which may be used to counter a spin.

Great care is being taken to ensure high AOA testing safety. In this program, no intentional spins will be performed. However, departures with high yaw rates and pro-spin controls may be conducted to determine how well the ARI works under such conditions.

The test aircraft, F-14A BuNo 157991, Aircraft 1X, besides being extensively instrumented, is highly modified with several spin prevention systems. Dual battery-driven hydraulic pumps maintain hydraulic pressure to the control surfaces in the event of a dual engine stall. A spin chute is installed and extendable canards are mounted near the nose of the aircraft. The chute, canards, full differential tail and rudder are the spin recovery controls, with differential tail considered to be the most effective. Aircraft 1X also has an eject-through canopy and complementary seat, since in a spin an ejected canopy tends to remain near the aircraft and could be contacted by the pilot when he ejects. There is a battery to power the instrumentation system so that it can remain operational during a dual engine stall or total electrical failure.

The flight testing is taking place at NASA's Dryden Flight Research Center, Edwards AFB, Calif. Aircraft 1X is always chased by another aircraft and is under continual radar and long-range television monitor. To ensure maximum safety, a test team of approximately 12 engineers monitors over 90 parameters, including all critical safety of flight parameters. The most critical instrumentation parameters are monitored by a computer, and a visual and audio alarm gives a warning if preset limits are exceeded. Close communication with the pilot makes each flight as safe and productive as possible.

The objective of the program is to yield an automatic rudder interconnect which will improve the *Tomcat's* flying qualities in an unlimited angle of attack ACM environment, while increasing its departure/spin resistance. This is a research and development program and there are no plans at present to incorporate the ARI in fleet F-14s. However, if the project is successful and the design criteria are met, an F-14A equipped with the ARI would make the *Tomcat*, already a good fighter, even better.

Circulation Control Rotor

By Frank DeProspero

The first full-scale circulation control helicopter became airborne in September 1979. The first flight was only a hover with the wheels a few feet from the ground, but it demonstrated the applicability of circulation control technology to rotary-wing aircraft.

The milestone became a reality after many years of U.S. Navy involvement, beginning with work at the David W. Taylor Naval Ship Research and Development Center in the late Sixties. The Naval Air Systems Command contracted with Kaman Aerospace Corporation to design and develop a full-scale flightworthy circulation control rotor (CCR). An H-2 helicopter was selected as a test bed to demonstrate the concept and is referred to as the XH-2/CCR. The goals of the program have been rotor head simplicity, increased reliability and maintainability characteristics, reduced vibration and improved aircraft performance capabilities.

Circulation control is achieved by blowing a stream of air through a thin spanwise slot along the trailing edge of each blade. Its basic advantage is the high-lift potential and direct-lift control that are attainable by controlling the circulation of free-stream air around the rotor blade. This also provides lower blade drag by delaying airflow separation from the airfoil.

The CCR concept is unique in that the blades operate in fixed pitch. Conventional mechanical cyclic controls to the rotor system are eliminated. Controlling the airflow through the trailing edge slot provides the cyclic and collective controls necessary to fly the aircraft. For cyclic control, the airflow through the slot of each blade is modulated cyclically as the blades rotate around the azimuth of the rotor system. For collective control, the amount of air is increased or decreased by the same amount in each blade. The flight demonstrator also has a mechanical collective control supplementing the pneumatic collective, in order to provide the range of collective control required to fly anywhere from high-speed maneuvering flight to autorotational descent.

A hingeless rotor configuration was selected for the XH-2/CCR system. The main rotor blades are fiberglass/graphite composite with an adjustable trailing edge slot which allows adjustment of the slot height along the blade for optimum airflow distribution. Airflow is provided by a single-stage centrifugal compressor driven by the main transmission. Compressed air is discharged into an air plenum created by the hub and a stationary mast which is attached to the H-2 rotor and transmission mount. The mast carries all the rotor loads except torque, which is carried by a quill shaft from the main transmission to the rotor hub. Air from the air plenum is directed to each blade by a control valve (flex ring) which varies the airflow to each blade as the blades rotate. The air exits each blade through the trailing edge slot to provide circulation control.

Since rotor control is achieved with circulation control rather than mechanical control, as in a conventional helicopter, the rotor system complexity and the number of components have been significantly reduced. Elimination of the complex oscillating mechanical controls and blade articulation will significantly improve the aircraft's reliability and maintainability. Because the drag of the rotor is less than the conventional H-2 under similar conditions, the power requirements to the main rotor transmission, the tail rotor and the aircraft's drive train are much lower. These lower duty requirements will also contribute to the aircraft's reliability.

Because the rotor system is controlled pneumatically rather than mechanically, aircraft vibration characteristics can be improved and blade vibratory stresses reduced. Another potential of the CCR is improved performance of the H-2 in a hover and at high speeds, because of reduced rotor drag resulting from the delayed airflow separation of the airfoil. The XH-2/CCR demonstrator, however, is not expected to show any significant performance improvement over the conventional H-2. The compressor was intentially oversized to provide a safety margin and will probably consume all the power saved by the reduction in blade drag. With a more efficiently designed compressor, performance improvements are likely.

At the completion of a 50-hour test program late this year NATC pilots will fly the XH-2/CCR and will conduct a limited flying qualities and performance evaluation. Even though the circulation control rotor is only in the research and development stage and is not intended as a retrofit for any helicopter, the concept provides a promising new technology for helicopter designers to improve helicopter reliability and maintainability, performance and vibration characteristics.

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Records

Several squadrons marked accident-free flight-hour milestones: VAQ-132, 14,000; VAW-123, 21,000; HS-74, 33,000; VXN-8, 57,000; and VS-28, 85,000. Others recorded their safe flying in years: VT-27, 1; VF-161, 2; HS-85, 5; VAW-112, 7; and VS-31, 10.

Three aircrewmen from HSL-30, Norfolk, achieved a first among their peers on the East Coast by passing 1,000 flight hours in the H-2. They are ADC R. F. Lavoie, AMS1 S. D. Martin and AW2 R. K. Kiehborth.

The crew of *Nashville* (LPD-13) took some time out from their normal underway routine on June 8 to celebrate the ship's 10,000th accident-free landing since commissioning in February 1970. Under the direction of ABH1 Scott Moore, a CH-46D from HMM-264 carrying *Nashville's* C.O., Capt. James D. Laurance, set down on the deck to mark the record-making event. Crew for the flight were 1st Lts. Carl Sharperson and Daryl Virgilio, and SSgt. K. W. Bartels. *Nashville* is home-ported in Norfolk.

Eight *Swordsmen* from VF-32 celebrated career milestones recently aboard *Kennedy*. C.O. Cdr. Donn McCrory led the list of accomplishments with the achievement of 800 arrested landings, 500 of which were on *JFK*. Next came X.O. Cdr. Bill Hayden with his 300th *JFK* trap and 1,000th hour in the F-14. LCdrs. Larry Baucom and Earl Kraay made their 300th trap on the carrier, while LCdr. Tom Mackenzie and Lt. Tom Sherry made their 200th. Lts. Vic Almquist and Walt Siegmund both attained *JFK* double centurion status and reached 1,000 hours in the *Tomcat*.

Rescues

Miramar's VAW-88 rescued two aviators who were forced to eject from their Canadian CF-104 during recent maneuvers at Canadian Forces Base Cold Lake, Alberta. The *Cottonpickers* were supporting a training strike mission composed of Canadian and U.S. Naval Reserve aircraft when the mayday call came through. The E-2B, flown by Cdr. Paul Schubarth, VAW-88's X.O., reached the downed aviators and relayed their location through the SAR coordinator to the rescue helo. While at the Canadian base, the squadron also provided a communications platform for a forward air control training exercise, air control for a C-130 logistics drop exercise, and air intercept control for Canadian and U.S. fighters.

Sea Cadets

Sea Cadets Jay Johnson (left) and Ed Schwierzke chock the wheels of a P-3 *Orion* during one phase of their work assignments at Moffett Field. The cadets were assigned to

the line division as part of a one-week summer training exercise to acquaint them with some of the duties they may face in a future naval career. Jay and Ed are high school students in Sacramento, Calif.

Honing the Edge

Every squadron has enemies such as corrosion, inclement weather and mechanical problems. But a culprit called FOD is number one on every squadron's "hit" list. Foreign object damage can cripple an aircraft. "Squadrons here are extremely conscious of FOD," pointed out Capt. Neil S. Fox, safety officer of MAG-36, based at Futenma, Japan. "To prevent it, they perform routine walk-downs in which 20 to 30 Marines physically check the flight line aircraft for unattended tools and other objects." Carelessness is a factor in FOD, and

the Marine in the photo appears to be literally "using his head." Actually he's demonstrating the *wrong* way to check for FOD, by sticking his head in a helo blast area where intense heat is emitted and by carrying a screwdriver in his pocket which can easily be lost and sucked into the engine.

Et cetera

On September 30, 1980, VC-2 was disestablished. Home-based at Oceana, the *Blue Falcons* have provided aircraft services to units of the Atlantic Fleet in the Virginia Capes, Narragansett Bay and Jacksonville operating areas. Established on January 18, 1952, as VU-2, the squadron operated from Quonset Point until moving to Oceana in June 1960. On July 1, 1965, VU-2 was redesignated VC-2 and, in 1970, the squadron traded its F-8 *Crusaders* for A-4 *Skyhawks* and US-2C *Trackers*. The squadron's last skipper was Cdr. Marvin B. Chesser.

On June 1, 1980, VAW-124, formerly known as the *Bullseyes*, changed its nickname to the *Bear Aces*. Alluding to the Soviet TU-95D *Bear*, the squadron recognizes the critical role its E-2C plays in effectively neutralizing the enemy's primary, long-range aircraft. The *Hawkeye*'s abilities for early detection and interception of the *Bear* are essential to fleet defense. The *Bear Aces* are assigned to CVW-8 aboard *Kennedy* and led by Cdr. Leonard N. Oden.

On June 6, 1980, Ens. Brenda E. Robinson became the first black female to earn her Wings of Gold — the 42nd female to do so. She has been ordered to VRC-40, Norfolk, to fly the C-1A, performing land and

carrier-based transportation of material and personnel. Ens. Robinson is shown here standing in front of the T-44A *Pegasus* in which she accomplished her advanced training.

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The last contract T-44A (left in photo) was picked up at the Beechcraft factory in Wichita, Kans., last May 22 and symbolically escorted to Corpus Christi by the first aircraft of that series received in 1977.

The Grumman A-6 *Intruder* entered its third decade of service with the anniversary of its first flight made on April 19, 1960, at the Grumman Peconic Facility at Calverton, L.I. The all-weather carrier jet attack aircraft entered naval service in Feburary 1963 when VA-42, a readiness training squadron, received the first A-6A. VA-75 was the first fleet squadron to transition to the A-6, introducing it to combat operations aboard *Independence* in December 1965. Originally designated the A2F-1, the airframe has seen service in eight versions, the A-6A, EA-6A, A-6B, EA-6B, A-6C, KA-6D, A-6E and the A-6E TRAM (target recognition attack multi-sensor), which made its first operational deployment with VA-35 aboard *Nimitz* in the Indian Ocean. In photo, BuNo 147864, the first airframe, was retired after many years of service culminating in a tour at NATC Patuxent River.

AAs Marcus W. Davis and Charles K. Hardtke and AMSAN William E. Hillis of the VA-176 line division are three individuals whose quick and accurate response prevented a catastrophe. On June 3, 1980, a squadron A-6 made an apparently normal landing at Oceana; however, unknown to the crew, the left brake locked and the heat generated by the friction of the dragging brake started a magnesium fire in the left main landing gear. As the aircraft taxied up to the refueling pits, the alert plane captains noted smoke and flames. Together they manned a CO_2 fire bottle, summoned the fire department and directed the A-6 to a clear area, preventing injury to maintenance personnel and loss of the aircraft. Left to right in photo are Davis, C.O. Cdr. Frank L. Stauts, Hardtke and Hillis.

"It looks great, but how does it taste," SecNav Edward Hidalgo seems to be thinking as he admires the 837-pound cake featur-

ing his portrait. The cake was baked and decorated by MS2 Harry Weldon especially for SecNav's recent visit aboard *Forrestal*. Weldon's background as a cake decorator started several years ago at Whidbey Island with a $2 can of compressed air and a $5 air brush.

A Cessna 150 from the Atsugi Navy Flying Club in Japan flies past picturesque Mt. Fuji. Approximately 75 members rent

the club's aircraft, which include two four-place Cessna 172s, a Beechcraft T-34 Navy trainer and a twin-engine North American *Aero Commander*.

Change of Command

ComMAtWing-1: Capt. Robert H. Ferguson relieved Capt. Gerald H. Hesse.

ComPatWing-5: Capt. Ronald G. Castle relieved Capt. Oakley E. Osborn.

ComResPatWingPac: Capt. Donald G. DeBode relieved Capt. Robert W. Case.

CVW-11: Cdr. R. E. Smith relieved Capt. J. K. Ready.

H&MS-31: LCol. William A. Forney relieved Maj. J. A. D'Errico.

H&HS Beaufort: Maj. R. L. Thacker relieved Maj. Junior D. Littlejohn.

H&HS Yuma: LCol. Gerald C. Huggin relieved Maj. Theodore D. Owens.

MABS-31: Maj. J. A. D'Errico relieved Maj. Augustus Fitch.

MCAS Beaufort: Col. George H. Leach relieved Col. Bruce B. Rutherford.

NAF Misawa: Capt. Craig L. Barnum relieved Capt. Morton S. Winchester.

NARF North Island: Capt. John H. Kirkpatrick relieved Capt. Leo L. Hamilton.

NAS Brunswick: Capt. Norman E. Koehler III relieved Capt. Benjamin T. Hacker.

NAS Norfolk: Capt. William A. Rockwell relieved Capt. Roderick P. Crawford.

NAS Oceana: Capt. Robert W. Jewell, Jr., relieved Capt. Danny J. Michaels.

VA-25: Cdr. John A. Lockard relieved Cdr. Donald J. Wright.

VA-37: Cdr. Warren Christie, Jr., relieved Cdr. Asbury Coward IV.

VA-46: Cdr. Morris Kemple, Jr., relieved Cdr. Philip Rooney.

VAQ-132: Cdr. Donald T. Bradbury relieved Cdr. Douglas W. Cook.

VF-84: Cdr. Edward K. Andrews relieved Cdr. Emory W. Brown, Jr.

VF-142: Cdr. Thomas S. Slater relieved Cdr. Marvin M. Krupp.

VP-8: Cdr. Melvin E. Thompson relieved Cdr. Thomas F. Hall.

VP-67: Cdr. Robert H. Tietz relieved Cdr. Ronald E. Blair.

VP-93: Cdr. Robert B. Bender relieved Cdr. Gerald H. Mollencop.

VRC-30: Cdr. Donald R. Gapp relieved Cdr. William J. Dooley.

VT-24: Cdr. William M. Ranson relieved Cdr. Darryl A. Stubbs.

VT-31: Cdr. Torrence B. Wilson relieved Cdr. Edward J. Schneider.

The Letters of John Sweeny

John Francis Sweeny was Naval Aviator No. 1790. Born in Pittsburgh, Pa., on January 24, 1895, he enlisted as a seaman second class on April 15, 1918, following a preliminary tour at an army camp in Plattsburgh, N.Y., and after taking some university courses. He then trained at MIT before going on to Key West, Miami and Pensacola, where he was designated a Naval Aviator and commissioned as an ensign on December 7, 1918. He later attended Carnegie Institute of Technology and graduated in 1920 with a B.S. in mechanical engineering, although his career was spent in advertising. Sweeny passed away July 7, 1978.

The following letters by Sweeny, edited for publication, were submitted to *Naval Aviation News* by his widow. They were written over a period of three years and although there are some obvious gaps, they reflect one young man's thoughts and adventures while on the journey to Wings of Gold.

Perhaps his letters will recall to many of our readers the early days of their own military careers.

NAVAL AIR STATION
KEY WEST, FLORIDA

August 26.
1918

Dear Mother—
I am now the City

ARMY AND NAVY
MEN'S CHRISTIAN ASSOCIATION
"WITH THE COLORS"
YMCA
Key West July 24 1918
Parker House,
Boston.
Dear Moth
U.S. POSTAGE
ABSOLUTELY FIREPROOF EUROPEAN PLAN
HOTEL SEMINOLE
JACKSONVILLE
JACKSONVILLE FLA. 1 PM
J. B. POUND, PRESIDENT
ROOMS WITHOUT BATH $1.00 PER DAY AND UP
ROOMS WITH PRIVATE BATH $2.00 PER DAY AND UP
ALL EUROPEAN PLAN
ALL FIREPROOF
HOTEL SAVANNAH
SAVANNAH
GEORGE R. BENTON, Manager
HOTEL SEMINOLE
JACKSONVILLE
HOTEL PATTEN
CHATTANOOGA
HOUSTOUN R. HARPER, Manager
JOHN E. LOVELL, Asst. Manager
HOTEL HENRY WATTERSON
LOUISVILLE
ROBERT B. JONES, Manager
GEO. SCHENCK, Asst. Manager
FLA.
1916
Y. M. C. A. Headquarters
1916
Military Training Camps
U. S. Army
Plattsburgh, N. Y.
U.S. POSTAGE
Dear
UNITED STATES NAVAL RESERVE FLYING CORPS
Jan 16 1919
ther
l, I am all
up here now but
goodne

[Some of Sweeny's letters have been deleted up to the time he became involved in Naval Aviation. Most of his letters were addressed to his mother.]

April 20, 1918
Naval Aviation Detachment
MIT, Cambridge, Mass.

We are here in the receiving ship, a brick building. Good old Carnegie Tech looks pretty small beside this place. Next Saturday I hope to be promoted to the main ship, where we'll get our uniforms. Now, we're wearing khaki trousers, flannel shirts and sweaters, for it is cold. I ordered my uniform today. It is whipcord and will cost about $50. We haven't received any pay yet and there is no assurance that we will get any soon. We get $60 or so per month and about the same amount for clothing allowance.

We do lots of drilling, exercising, and scrubbing up the ship. I have had only about one hour of radio training so far. The food is FINE. The course is 12 weeks. Every two weeks the classes are advanced to a new "flight." Much like Plattsburgh, we get up at 5:30, work hard all day and turn in at 9.

April 23, 1918
Cambridge

We have boxing every once in a while. I got bumped on the nose twice and it bled. It bleeds awfully easily though.

(same date)

Dear Father,

I sure would like to get out of this place and start some real work (at the main ship). This is monotonous.

April 28, 1918
Adams House
Boston, Mass.

I came down here with a couple of fellows from the ship to stay Saturday night and Sunday. We went to Keith's Theater last night where there was a very good bill. They had a Liberty Loan drive. The actors came out and did pretty well at selling subscriptions. I guess Boston hadn't been coming across.

Don't worry about me. I never felt better and everything is going great.

May 1, 1918
MIT, Cambridge

May Day. It rained all morning. We had to wear our raincoats. They're made of green oilcloth with snap buttons diagonally down the front, a pocket on one side and a leather strap around the neck to fasten the collar. Some garment, but it keeps the rain out.

May 7, 1918
Cambridge

Went to Boston the other day. It sure did feel good to get into that uniform and feel you had the right to wear it. Everybody gave me the up and down.

May 12, 1918
Cambridge

We are in our main ship now. I feel a foot taller and a year older. There's no hot water but maybe we'll have some before the end of the summer. I got a haircut yesterday for inspection and now look like a convict. Went to see Helen Humphries last night and was afraid to take my hat off.

May 13, 1918
Cambridge

I sure am glad I studied engineering before I got here. The only thing I'm having trouble with is fundamentals of naval service. It concerns naval regulations and such dope. I did get a 4.0 in electricity, which is a perfect mark. My hair hasn't grown out enough to have my picture taken.

I never put in such a busy week in all my life. They keep us on the run all the time in this ship. Life before was a picnic compared to this.

We have five hours of classes every day, besides calisthenics and lots of drill, usually no more than 30 minutes for meals. It takes some hustling. They're awfully particular about shaving and shining your shoes. They inspect us in the morning and again at two o'clock for shaves and shoe shines. I almost got stung for Sunday work squad last week.

May 19, 1918
Cambridge

You can never tell when you will get paid in the Navy. Monday was supposed to be payday but I have hopes of getting paid today.

May 20, 1918
Cambridge

I guess there isn't anything you can send except socks, a few good handkerchiefs and a kit bag – the last is the most important.

May 25, 1918
Cambridge

My classes are divided into two-week periods called flights. The flights are lettered, the highest being A flight. I just graduated from F flight. We are no longer the lowest thing around here. I hope you are taking things easy and not working too hard. Make Pop take a rest and both of you go on a vacation. I'll stand the expenses.

June 3, 1918
Adams House
Boston, Mass.

I was broke this weekend, so I didn't spend the night in the hotel in town. [How Sweeny was going to pay for his parents' vacation remains a mystery.] You can't imagine what happened last Thursday, Memorial Day. We thought we'd be marching all over Boston or else having regular classes. At the noon inspection on Wednesday, it was announced that we were to have free gangway from 5 to 10 p.m. on Thursday! We just about caved in. We thought there wasn't the remotest possibility of such a thing happening.

Haven't flunked anything yet! The work is getting harder every day.

June 6, 1918
Cambridge

Dear Father,

They grade us on a basis of 4.0, which is perfect (2.5 is passing). I have had two 4.0s in electricity, a 3.9 in motors, a 3.8 in navigation and a 3.6 in radio. I feel proud of the motors and navigation marks for they were among the highest in the company!

We heard a lecture by an American who has been flying in France. He told us about the battles and exciting deeds over the trenches. When we get our wings, we will probably be sent to the coast of England or Ireland for coastal defense work and submarine spotting. They say it is very monotonous.

June 9, 1918
Parker House
Boston, Mass.

I'm at the home of Parker House rolls! But they haven't been making them on account of the war. Doggone! There have been similar disappointments. You know how much I like Boston baked beans. I came up here with my mouth watering and they serve us Heinz's.

I'm in C flight now, supposedly the hardest. I am well and happy and having the time of my life. I wouldn't miss it for anything. Keep well and cool and don't worry.

June 26, 1918
Cambridge

My hair is beginning to grow back. I'll be in B flight soon.

I hate to say it but there isn't a chance in the world of my getting home when I leave Boston. I will be sent directly to a flying station for about 12 weeks. I can't hope to see you before November.

June 30, 1918
Cambridge

What do you think! Your son is a disgrace! His foot slipped a couple of times and so he is on the Sunday work squad. They caught me with my mattress folded wrong, and I had my pajamas between my sheets and blankets. I also handed in a locker key late. Any one of the above would have been enough to put me on. I am thankful that they all came at once.

Later I had some free time and went to the hotel (Adams House) for dinner. I am full of lamb and apple pie.

Yesterday was Navy Day and they had a big time on the river out in front of the ship. All kinds of boat and swimming races. A couple of seaplanes came up and flew around. One flew right over the ship. It must be wonderful to be sailing around up there. In one month, I probably will!

I'll have to get a new uniform one of these days. I think it would be best to get

one here, for there is no telling whether I could get a decent suit at the flying station. A good uniform will cost from $50 to $60. I can pay about half, if you can help me out with the balance.

Rumor says that we rate four days' liberty over the Fourth but I doubt it. We'll probably have to parade all afternoon.

July 7, 1918
Cambridge

I ordered my uniform, a serge. It will cost about $60 with the cap. I'm afraid I'm going to be in financial difficulties before I leave here. Tell Pop that if he can send me about $50, I will put it on my account and will probably be able to return it soon. When we get to a flying station, we get a 50-percent increase in pay. That means $90 a month.

July 14, 1918
Cambridge

I'm in A flight now. In a few days I'll learn where I will go for flying. I'll put in for San Diego or Key West. The other places are Bay Shore, N.Y., or Miami, Fla. It takes a month and a half or two months' preliminary work at those stations, and then a month of advanced instruction at Pensacola.

July 16, 1918
Cambridge

Dear Father,

We had our Wasserman tests yesterday. Lots of fellows were nervous about the injection, or the taking of blood. Many were keeling over right and left. It made you nervous, when standing in line, to see them carrying the boys out. I got through without passing out.

July 20, 1918
Cambridge

At last! I leave Boston at midnight tonight. I am going to Key West. I didn't have a chance for San Diego since only nine men were sent there. Californians had preference. I feel lucky. They say Key West is a fine place for flying, with lots of planes. The more planes, the sooner we get through. We're going all the way by train. I thought at first we might be sent by boat but I guess the subs scared them. Pretty soon we'll be scaring subs. By the way, you may find it hard to believe but I was tutoring some of the fellows here in navigation. Some of the fellows have been ordered to the balloon school at Akron.

July 24, 1918
Key West, Fla.

I am down among the sheltering palms. The ride was long and hot and I never realized how long the old U.S.A. is. On a stopover in Washington, I ran into Russ Willison who is at Annapolis trying for a regular commission – which is better than one in the reserves. Unfortunately, I can't get into the regular Navy because the Flying Corps is a branch of the Reserves.

It is *some* hot here. It's with you all the time. It penetrates. Arriving on the train, we saw about 20 planes in the air at the same time, a good sign for us. I expect to get a hop today, maybe this morning.

The food here is similar to that Plattsburgh stuff, plain with little variety but good. We don't get much liberty but fellows say that when they do, they usually stay on the base.

There is a lack of discipline here compared to Cambridge. We shave when we feel like it and dress in a shirt, work trousers and tennis shoes. This is the life! Practically no formations and when you do march, you never think of keeping step. You salute officers in the morning only. I am going to enjoy my stay here.

The island of Key West is about three by seven miles in size. The air station is on the gulf side with a navy yard on the sea side. There is a natural bay in front of the station with many little islands around it ranging from 50 feet to a mile in diameter. The depth of the water averages only about two feet. The bottom is soft limestone covered with seaweed and sponges. There are no springs on the island, so fresh water has to be brought in from the mainland, 150 miles away, in tank cars.

There are four large hangars above the beach, which is made of cement and slopes down into the water. The hangars accommodate 30 to 40 planes, and there are many more aircraft stored in boxes at the yard. We also have an immense steel hangar for blimps, two of which are now on the station. Other wood-frame buildings are scattered around the grounds.

There are 60 students and instructors, and about 200 gobs at the station. When I think that they are running this great plant just for us, to teach us to fly, I begin to realize that old Uncle Sam is treating us pretty well. He feeds and clothes us, provides a place to sleep, and then gives us a plane to operate, and even supplies four men to take care of it. You couldn't get anything like this in civilian life unless you were a millionaire.

I'm sure I did the right thing in getting out of school and coming here. I can go back to school later but I might never have this kind of opportunity again. The experience is something I'll remember all my days. And if I get over to the other side – well, I wouldn't want to miss that.

(Evening) I have had my first hop! It is some sensation to be sailing along up there, and to look around and see things away off. Key West was like a map, the houses like toys. My instructor let me take the controls as soon as we got into some smooth air. Boy, it keeps you busy. You have to keep the old bus balanced in about 'teen directions. We have dual-controlled machines. The instructor had hold of the controls when I was running the plane and could pull me out when I made a mistake. When he pushed her down to glide to earth, it was just like that breathless moment at the top of a roller coaster, only you can't see a track ahead of you – nothing but a thousand feet or more of thin air! And when you go into a spiral and the old machine is tilted about 45 degrees to the earth, and you look along the plane and see the fields and houses right down there, and you wonder if you are going to sideslip . . . it does feel good to look ahead and see that you're all right and taking the corner in good shape.

He wouldn't let me take any corners today. Just straight flying. I can't describe the sensation of flying, except to say it sure is the greatest thing I have ever tried. I'm all tired out and am going to bed.

July 28, 1918
Key West

We get up at 0500, fly until 0730, have breakfast and then go to classes. We also fly in the evening until 1730. Sometimes after supper we work on the planes. Even so, if you get in two half-hour hops a day, you're lucky. By the way, the planes we fly here are hydroaeroplanes.

It was so hot in town the other day that I thought I'd melt.

I'm beginning to get the knack of flying. It's fun dingin' out there and giving her the gun, or nosing her down into a dive. I don't do much myself yet and the instructor is always there if anything goes wrong. It's safer than I thought. Unless there is something very much the matter, there is no chance of anything breaking, and we inspect the planes very carefully before going up. An automobile is more dangerous than an aeroplane. I have hopes of qualifying for solo work in a week or so but I'm going to take as much instruction as I can.

Had a lot of fun playing a friend's banjo. I wish I had the old mandolin here but there's no place to keep it.

August 4, 1918
Key West

Haven't qualified for solo yet but went up for a stunt hop today. At 3,000 feet, the instructor put the machine in a tailspin and told me to pull it out. The ship fell over on its side, started straight down and began spinning around. The ships in the bay seemed to be up in the sky and Key West went sliding sideways. I finally got her straightened into a nose dive, heading straight for the water, but it wasn't much of a trick to pull out. The motor stopped then, but we weren't far from the station and had sufficient altitude to glide back. I was pretty sick after we got down but was all right again after I rested for awhile. We dropped 1,500 feet in about a minute, I was told. I learned not to look out. That's what made me sick. Next time, I'm going to keep my head in the cockpit and watch the altimeter. Those old ships are as safe as hacks.

By the way, I took out $10,000 worth

of insurance while I was in Boston. Each month, $6.50 is taken out of my pay for it. I also have $5 taken out monthly for a $50 Liberty Bond.

I've been flying every day.

August 7, 1918
Key West

Well, at last I have qualified. Ensign Brown turned me out yesterday and I went for my first solo. It's four times as good when you are alone and can do as you please.

I have five hours' solo now and will try my first "squadron" tomorrow. We'll have four tests, three of which are flying in squadron or V-shaped formations of three, five and seven machines. The final test is "shooting the boat." We go up to 6,000 feet and spiral down to land within 200 feet of an old pontoon out in the bay.

It's a lot of fun to fly by yourself. You can sail around wherever you please and rest if you want to. I haven't been the least bit nervous. It's as safe as a trolley car.

There were hurricane warnings last night and because some of the planes won't go into the hangars, we tied them to flat cars. The hurricane didn't show.

Have tried to fly off my "three squadron" twice but had hard luck and neither of them were any good.

August 19, 1918
Key West

[Presumably Sweeny completed his squadron formation work, and needed only his shot at the boat.]

I expect to leave Sunday for Naval Air Station, Miami, where I'll be flying the big flying boats. In addition to the hydro-aeroplanes, we have the *Aeromarine*, which is not popular with the fellows. It is rather hard to handle and won't climb much. The other evening, I had the "Jyrene" or "Flivver," as it is called, and the engine started to miss and spill out oil. I tried to keep her up but she didn't have the power, so I had to come down. I started to taxi into the station but the engine was working so badly that I shut her off. Another fellow came up to help but stalled his own engine. There we sat, side by side, till the motor-boat came out and towed us in. We hit the beach at 2200. I got a nice sleep on the way. I was hungry but at least I got out of the evening drudgery of washing down the planes.

Next morning I saw the motor. Its top was split along its length and there was a hole in the side big enough to put your fist in.

Found a really cool spot the other day, less than two miles from the station — straight up. I got a good machine, one of the Hispano-Suizas, and took her up to 10,000 feet, the first time I've been that high. Believe me, it was cold and as soon as the altimeter read 10,000, I nosed her down and was glad to get to a warmer level.

We bought some watermelons on the way to the rifle range this morning. We picked sides and shot at balloons, which is part of our training. Our side won and got the watermelons. We go back and forth to the range in a huge truck and I get more scared riding in that than I do flying in the air. I got my plane up to 5,900 feet but the gasoline gave out. I wasn't able to get into position for my final glide, and overshot the boat a little. I'll try again tomorrow from 3,000 feet.

September 1, 1918
Pensacola, Fla.

[Apparently, Sweeny successfully shot the boat.]

We got into Pensacola yesterday morning and the beach is wonderful, a wide, smooth stretch of sand running for miles along the coast. Surf bathing is fine but the mosquitoes are terrible.

We bought wings at Miami (went to Miami and Jacksonville on the way to Pensacola) and have been wearing them here although we don't rate them yet. But fellows used to rate them when they finished at Key West and Miami, so we just got some. We'll take them off when we report in.

September 10, 1918
Pensacola

Dear Father,

Thanks for the clippings. Since we left Boston we have had little dope on the situation "over there."

At breakfast in a restaurant in Jacksonville, one of our group, Schmid, was talking to a soldier who asked, "You fellows never fly higher than 500 feet, do you?" Schmid said, "Well, the highest I've ever been is 8,700 feet." The soldier's eyes bugged out and he said, "And you're sitting here drinking coffee right next to me!" I also had a dickens of a time convincing another soldier that you could learn to fly in 10 hours.

September 13, 1918
Pensacola

Had a stiff physical exam today which included the famous revolving chair. It made me kind of sick but my stomach was on the bum before I went in. I've also been having trouble with a tooth which the Navy dentist wanted to pull out. I didn't think that was a good stunt and I'll go to see a dentist in town.

September 17, 1918
Pensacola

Well, it's out. That is, the tooth is out. The dentist in town agreed with the Navy man. So, with my jaw in hand, I went to the Navy doctor, whistling "The Yanks are coming." "Haul 'er out," I said and he did.

I finally got a hop. Have started bombing practice, after which there'll be two weeks of gunnery at Santa Rosa Island. I have been a bit depressed with the tooth and everything but it's great to see 15 fellows break out with new gold braid every day. I'm looking forward to that. I haven't gotten my flying pay, which is $30 per month, for July and August yet. The papers have to be signed by officers at Key West, so it will be a while. It's a shame they didn't explain that sooner.

September 22, 1918
Pensacola

Got 81 bucks on payday and bought some things, including a pair of goggles.

The weather has been so windy and bumpy that there's been no flying for a few days. I still need a dummy bombing hop before going to Santa Rosa Island for gunnery practice. Dummy bombing means hitting a target with bombs that don't explode. It's great sport, they say, especially with a moving target.

After ground work at Santa Rosa the first week, we fly and shoot at targets like your shadow, then practice firing runs at another place with a camera gun built to look like a machine gun. Press the trigger and you make a moving picture instead of shooting a stream of bullets.

Opposite, old HS boat. Above, N-9 (Hispano-Suiza) taking off. Below, H-16.

October 13, 1918
Pensacola

Dear Father,

They woke us up this morning with the news that the war is over, but I don't take much stock in the reports. I think we will be busy for another year at least. I finished gunnery and was glad to leave Santa Rosa, which wasn't as bad as I expected. We lived in nine-by-nine-foot tents, two to a tent. The mosquitoes kept us up quite a bit, but then it got cooler and we were all right. There was only one pump for fresh water, which smelled strongly of sulphur.

They purposely gave us poor ammunition for live runs so that we would have lots of stoppages. The old gun would be banging away smoothly and suddenly stop firing. We had to examine it quickly, pinpoint the trouble and fix it as fast as possible. Speed is essential. Sometimes I would have to take the gun apart to fix it, which is not easy when you're standing up in the rear cockpit of a Hispano-Suiza facing the propeller blast. There was no place to put the parts, except inside my shirt. If I dropped one overboard it meant two extra weeks on the island. It was very good practice, though. Even with the inspections and the best of care, the guns are going to jam and you have to clear them quickly.

October 21, 1918
Pensacola

I had a nice hop today in an old N-9, solo, the first time I've been up alone for a long while. It felt good to be able to go where I wanted without someone telling me where.

Many of the fellows are being held over as pilots or instructors but I will probably go to Miami for a few days and fly land machines before going to Washington. Some of the flyers have been sent directly across without leave.

October 27, 1918
Pensacola

I was a little sick of this chow, so I went to a local restaurant we call the Greasy Spoon and had ham and eggs. They tasted like steak and mashed potatoes, especially after the endless beans and dogs and prunes we get here.

October 31, 1918
Pensacola

Dear Father,

[Apparently the day-flying phase is over.]

The battle of Pensacola is just one thing after another. I've been standing by for 24 hours a day for a week waiting for my first hop under the stars. One night it rained; the next night, lumber floated up into the bay, preventing takeoffs and landings. The following night it was too rough and after that too smooth. When the water is rough it is hard to land, especially at night. When it's smooth, you can't see it. They usually have the wrecking barge nearby but last night she was out in the Gulf, so we couldn't fly. Just one thing after another. But, I like night flying, especially the bombing.

Old Captain Bennett just came through the recreation room where I'm writing this. He is a four-striper, about 100 years old, and is commandant of this naval district. Boy, you should have seen us snap to attention.

November 4, 1918
Pensacola

We've had the first good weather at night in about three weeks and the other night I got in a two-and-a-half-hour solo. It is lonesome enough when you have an hour solo hop in the daytime but at night the time surely does drag. All you can see is darkness and your own engine exhaust, and sometimes a few stars. The horizon is an indistinct blur. We use the horizon to line up the machine to tell whether we are climbing or horizontal, and if the wings are level. Night work is a bit of a strain and I sure was tired when I hit the hay at 0400.

We have a dandy recreation room in these quarters with wicker chairs, writing tables and a piano. As I write this, Doc Rice is tickling the keys.

It's quite cold here. At the beach last night while we were waiting to see if they would let us fly, I wore my sweater, flannel shirt, blouse and leather coat, and still shivered to beat the band. I sure would like to let a couple of bombs drop on Berlin before it's too late.

November 7, 1918
(In the air)

I finished night flying in the H-16s. In fact, I'm writing you while in the air, waiting my turn to pilot the wagon today. Three students go up at a time and take turns flying. These boats are roomy and comfortable. If you didn't look out you wouldn't know that you're moving, although the old Liberty engines make a lot of noise. The altimeter reads 1,000 feet now and we are heading northwest. The instructor, an ensign, just shut off one motor and we are flying with only one. We have to do this before we qualify. Now we are coming down to land. You have to swallow a couple of times on the way down, to relieve air pressure.

These are fun machines and almost fly and land themselves. Sometimes, though, after hitting a "bump" on the water, you have to pull hard to get her straight. I am now safely back in the barracks after a good ride out in the bay.

They told us tonight that Germany

has signed the armistice. The C.O., Commander Johnson, said that it was just another peace drive and that the war won't be over for a while. So, we still hope to get in some fighting.

November 13, 1918
Pensacola

The World War may be over but the Pensacola war still rages. Nothing has changed here, even with the news that the armistice was signed. There was a noisy disturbance the other morning but only because the bugler forgot to blow reveille and everyone was late for breakfast.

There are many rumors as to what will happen to us. Some say we'll be released right away and some say we'll be working for two years yet. The best dope I have is that those with foreign orders will stand by till the treaty of peace is signed. I have foreign orders, so this is a good sign that I'll stay on flying and in the Navy awhile. Even so, I'm sure glad I didn't order another uniform. It wouldn't be worthwhile if I were to get out soon.

Chow is getting better because of a new system where each man gives $2 per week toward securing better food. We don't have to put up with beans and prunes for breakfast any longer and we get real egg omelets instead of egg-dust omelets. Once in a while we get ice cream. Some time in the future, they are going to do away with plain board tables and benches, and provide small tables and chairs and napkins! We will be rated high then and even now we're beginning to be treated almost as well as the gobs.

The medical department decided that the combination of sunlight and sand was making us cross-eyed, so we have to buy some special glasses that take out the ultra-violet sun rays.

Thanks for those sugared dates candy.

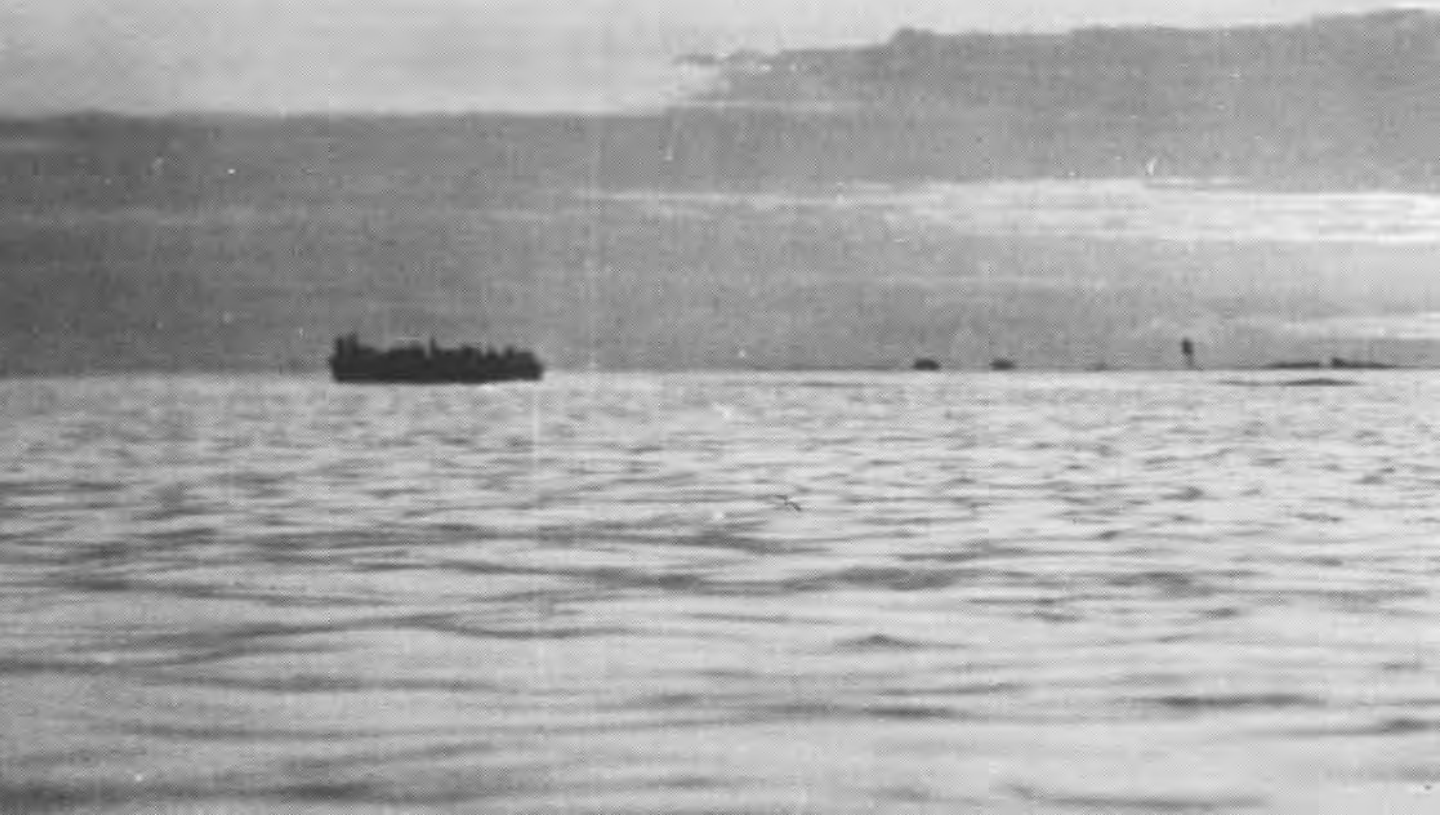
November 17, 1918
Pensacola

I asked for and was classified with a group who wished to finish the course, be commissioned and then placed on inactive duty. We got no promises, however. Maybe they will need us for instructors. I'm not afraid of being held as an instructor for I have been doing rotten lately. I can't seem to get the hang of the big boats. I have never had as much trouble with anything else. I'm afraid I don't like it here very much and I look forward to getting aboard a train headed north.

November 26, 1918
Pensacola

Dear Father,

Those of us who are on the "retained" list will stay here while the others on the "available" list, of which I am one, will hopefully be sent to patrol stations in the



U.S. Some, for exceptionally good reasons, will be let go. Since I couldn't get a job that would pay more than the $200 a month I'm making now, I don't mind staying for a while.

Because I had trouble with the big boats, I've been redesignated an HS-1 pilot. You don't fly the 16s, you drive them. The HS-1s are similar to them but smaller. It's the difference between a truck and a touring car. (The N-9 is a roadster.) I felt bad about the transfer, falling down as I did, but on my first HS-1 hop, I handled the old wagon as though I was born in one. I got a checkup today, then soloed, and I'm now ready to start navigation. The solo, which I flew with the "burlap sisters," was the best I have had since leaving Key West. A couple of sand bags, called the burlap sisters, are placed in the boat for balance on solo hops. I got my self-respect back after that hop today.

As to finishing, it's up to the weather because for navigation the sky must be clear and the Gulf smooth. They guess the wind, and then send us out with a certain track to fly. We have to fly a triangle with 60 miles on each leg and come back to the starting point at the right time. On another hop we go straight out of sight of land, make a 15-mile triangle and come back.

January 16, 1919
Pensacola

Nobody knows what will happen to us next. There are about 50 pilots in my squadron now and the ones who have been there the longest will probably be retained.

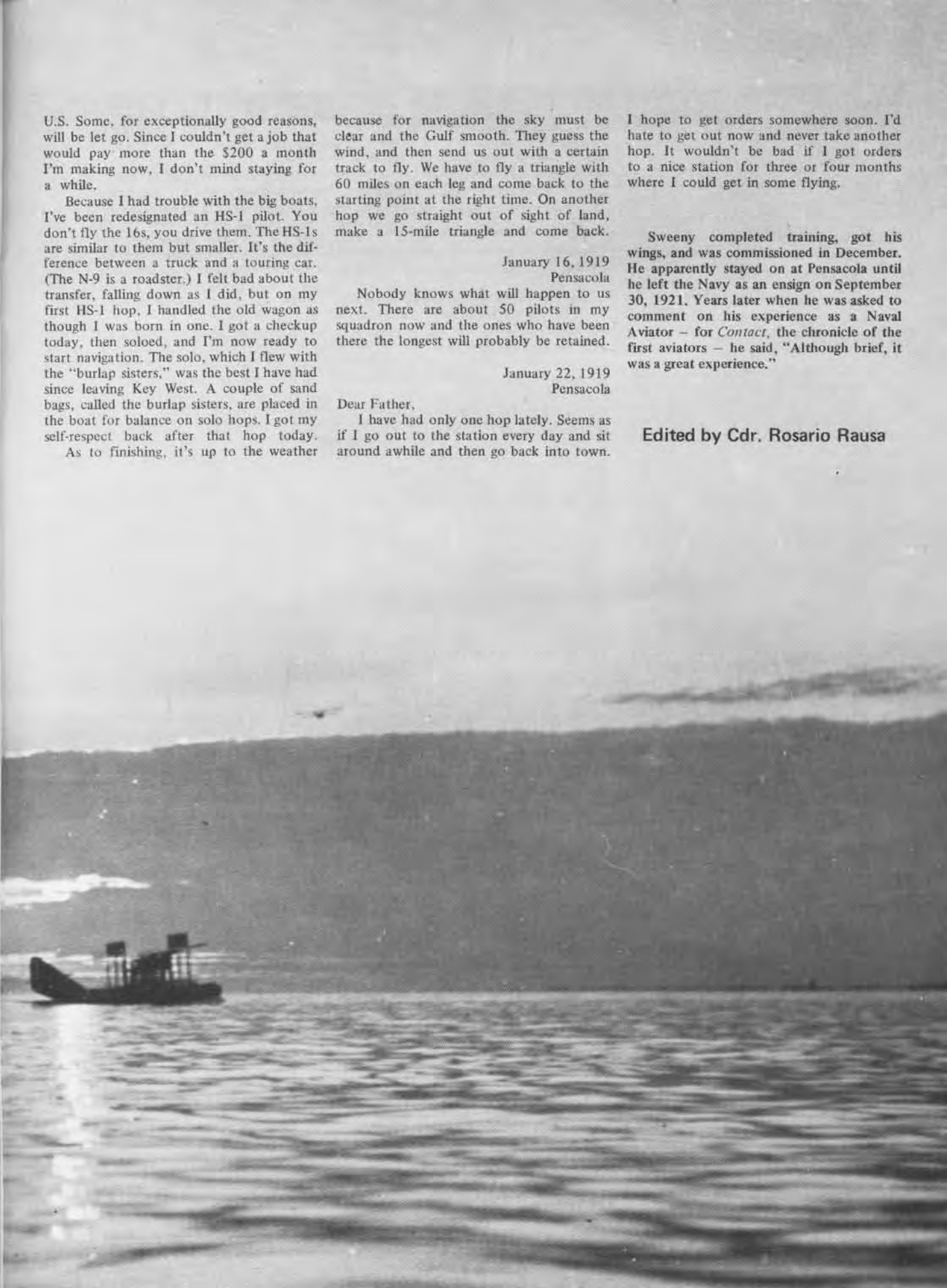
January 22, 1919
Pensacola

Dear Father,

I have had only one hop lately. Seems as if I go out to the station every day and sit around awhile and then go back into town. I hope to get orders somewhere soon. I'd hate to get out now and never take another hop. It wouldn't be bad if I got orders to a nice station for three or four months where I could get in some flying.

Sweeny completed training, got his wings, and was commissioned in December. He apparently stayed on at Pensacola until he left the Navy as an ensign on September 30, 1921. Years later when he was asked to comment on his experience as a Naval Aviator – for *Contact*, the chronicle of the first aviators – he said, "Although brief, it was a great experience."

Edited by Cdr. Rosario Rausa



Letters

Color Slides

I know a lot of U.S. Navy people collect color slides of military aircraft. Perhaps someone would like to exchange slides with me.

Gunter Grondstein
5010 Bergheim-Ahe
D-Wohnpark 20
West Germany

A-6E TRAM

In your fine article "Expanded Capabilities" on page 37 of your June 1980 issue, I was disappointed when I read the last paragraph regarding the A-6E TRAM. The *Black Panthers* of VA-35, the Navy's oldest attack squadron and current Battle "E" winner, were the *first* squadron to deploy with this new version, not VA-65. VA-35 deployed to the Indian Ocean in January 1980, where it remained on station for 144 consecutive days exercising the TRAM DRS capability in an operational environment for the first time.

E. J. Budway
VA-35
FPO New York 09501

Cruisebooks

I am offering my rare collection of 46 Vietnam War aircraft carrier cruisebooks. Would like to hear from anyone who is interested.

Joe Luongo
12 Terrace Ave.
White Plains, N.Y. 10603

Orion

I'm an SWO (1110), but even the TACCO of a P-3 should know that *Orion*, at the lower right of page 29 in your July issue, is backwards. (The shield is on the right as we look at him, with his right arm holding the club.) Don't rely too much on your fancy electronic navigation systems!

Cdr. R. S. Peterson
NROTC Unit
Vanderbilt University
Nashville, Tenn. 37240

Corsair Wanted

I hope you can help me. I am looking for an F4U *Corsair* to restore. I would appreciate any information.

John Kowalz
Reiners Lane
Pittsburgh, Pa. 15205

LAMPS MK III

The June 1980 issue contained an excellent article on the LAMPS MK III weapon system. As an update to your readers, I am pleased to report that all five prototype aircraft are flying and our development goals to date have all been met or exceeded. We have over 300 flight hours on the *Seahawk* prototypes; two of the *Seahawks* are configured with full weapon system avionics and one of the prototypes will be configured with a full-up recovery assist, secure and traverse (RAST) system in August of this year.

I would also like to take this opportunity to correct your information concerning the T700-GE-401 turboshaft engines. The engine develops the following shaft horsepower for conditions listed: maximum continuous power, 1,540 ship; intermediate rated power, 1,690 ship; contingency power, 1,723 ship vice the 1,284, 1,632 and 1,713 values, respectively, reported in the article.

On behalf of the LAMPS MK III team, I extend an invitation for *Naval Aviation News* to return to our program some time in early 1981. The purpose of this invitation is to provide your readers with an update of this immensely important program.

RAdm. R. N. Winkel
Lamps Project Manager
Naval Air Systems Command
Washington, D.C. 20361

All the Basic Types

To join the gaggle of claimants to the fame of operating all the basic types of aircraft, stirred up by your December 1979 issue, I submit that the Naval Aircraft Torpedo Unit, Quonset Point, R.I., operated a P2V-5F, S-2, A-4 and HSS-1 for the two years I was a member, 1960-2. We had a torpedo range in Narragansett Bay where we conducted R&D on airborne torpedo accessories. Our flight pattern for drops would nowadays take us under the Jamestown-Newport Bridge!

Capt. T. V. Golder OpNav 636 Washington, D.C. 20350

Recommissioning

801 Naval Air Squadron will recommission with *Sea Harrier* aircraft on February 26, 1981, at Royal Naval Air Station Yeovilton, England. Any U.S. Navy officers, who have served in the squadron and would like to attend the ceremony and the reception which follows, are invited to contact Lieutenant Commander D. Hamilton, Royal Navy (Senior Pilot desig. 801 Squadron), 899 Squadron Royal Naval Air Station Yeovilton, Somerset, England.

Reunion

USS *Brooklyn* (CL-40) reunion will be held October 2-6, Philadelphia, Pa. For information, contact Captain Conrad A. Wickham, USNR(Ret.), 18 South Buck Lane, Haverford, Pa. 19041.

The Association of Naval Aviation asks that those of you who are planning Naval Aviation reunions, schedule them to take place concurrently with the ANA annual convention in Dallas, May 14-17, 1981. Meet old friends and current leaders of Naval Aviation. Special *Blue Angels* show. Texas night. Industry exhibits. Wives' things. Write ANA Reunions '81, 1309 Canterbury Ct., Arlington, Texas 76013, or call G. W. Brown, (817) 461-8117.

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SQUADRON INSIGNIA

Commissioned in December 1943, Aircraft Ferry Squadron 31 is tasked with providing the safe, expeditious and economical delivery of Navy and Marine Corps aircraft worldwide. Home-based at NAS Norfolk, Va., and skippered by Commander Donald R. Denault, the squadron, although it maintains no aircraft of its own, flies 36 models and 104 series of aircraft in support of its unique objectives. The Storkliners' insignia represents the infinite care and global nature of the ferry mission.

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