NAVAL AVIATION
NEWS

F-14A: Mock-up to First Flight

DECEMBER 1970

NavAir No. 00-75R-3

It follows then as certain as that night succeeds the day, that without a decisive naval force we can do nothing definitive.

- George Washington, 1781

NAVAL AVIATION NEWS

FIFTY-SECOND YEAR OF PUBLICATION

Vice Admiral Thomas F. Connolly
Deputy Chief of Naval Operations (Air)

Rear Admiral Malcolm W. Cagle
Assistant Deputy Chief of Naval Operations (Air)

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The F-14A has come a long way from last year's mock-up. Editor LCdr. Paul N. Mullane gives a nuts-and-bolts progress report on the Navy's newest air superiority fighter.

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It wasn't the Navy's first fighter, and it wasn't the first aircraft to be flown from the deck of a ship, but the venerable Vought VE-7 was something special.

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For those of you who heard about the "old air Navy" from a teenage aviation bo'sun and didn't believe, now learn about those early days from one who was there. Rear Admiral J. R. Tate, USN (Ret.), reminisces about the early days of Naval Aviation and the Navy's first carrier, the Langley.

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COVERS

The cover shot of the F-4J's tied down on America's flight deck is the work of AN C. J. Maas. Above, Coral Sea steams with her destroyer escorts during a training exercise off the California coast. PH1 R.E. Spell took the back cover photo after decommissioning ceremonies aboard Hancock.

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EDITOR'S CORNER

It seems as though history is popping up all over the place — at least the history of Naval Aviation during WW II.

During the past several years, numerous planes that went down during that war have been found. These include Japanese Zeros as well as our own aircraft. The reasons the planes were lost vary from aerial combat to malfunctions during training flights, and the places where they are turning up range from a remote hillside in Canada to the ocean bottom near the Solomon Islands.

The recoveries might not impress some people, but each is significant. They not only help plug little holes in history and increase our knowledge of happenings during the war, but serve to satisfy curiosity and sentimentality.

Over the years, people have wondered what happened to this or that plane, and few answers have come forth. With every plane found, however, more answers are found.

Then, too, the salvageable aircraft are usually destined for aviation museums or historical societies where they will remind us of the sacrifices made by those who fought against totalitarianism.

The latest aircraft to be recovered is an F6F Hellcat. It was found 12 miles off San Diego October 10. It had rested in 3,400 feet of water for 26 years, and looked almost as good as new.

According to reports, only slight damage was noted, and corrosion and barnacle encrustation seemed minor. Its state of preservation was accredited to the great depth to which the plane settled.

A spokesman for Lockheed, which recovered the Hellcat, said it appeared the pilot made a "wheels up" ditching at sea, opened the cockpit and swam clear while the single engine fighter sank.

What actually happened that day in 1944 was revealed when the plane was brought up. The pilot, who now lives in New York State, said, when he heard his plane had been salvaged, "It was like something from the past."

Just six weeks before the Hellcat was found, a Zero was recovered from the sea near Rabaul, New Britain Island, east of New Guinea. Oddly enough the Japanese relic is believed to have been shot down by a carrier-based Hellcat in November 1943, during the first air attack on Japanese-occupied Rabaul.

The Zero was recovered in 70 feet of water just 200 yards off shore. It, too, was in remarkably good condition, according to retired Naval Aviator, Commander Eugene A. Valencia.

Valencia, a San Diego member of the American Fighter Aces Association, headed a three-member mission to salvage the Japanese plane.

"The condition of the Zero is very beautiful," he said. "Its 20mm wing cannons even look rechargeable, after small repairs; the other parts, except the engine, are in good shape, too."

Later, Valencia went to Japan to ask help from the original designer and manufacturer. He wants to rebuild the aircraft piece by piece, with duplicated parts, following the original blueprints.

A year ago a Wildcat was found in the same general area. A number of bullet holes were observed on the underside of the wing. There are no reports as to what happened to the plane after it was found, but it was also reported to be in amazingly good condition.

During the summer of 1969, the tail section of a Navy trainer was found in Lake Michigan. Because its tail hook was extended, it is speculated that it may have crashed while attempting to land on one of two training carriers, the Sable and Wolverine, which were stationed off Chicago during WW II.

Another Hellcat was found two years earlier in 5,000 feet of water more than 100 miles off Rhode Island. The plane was being used in carrier qualifications on board USS Wake Island (CVE-65) when it was lost September 25, 1944.

In 1964, the Royal Canadian Air Force airlifted an OS2U Kingfisher from a mountainside on Calvert Island, 300 miles north of Vancouver, B.C., where it crashed in 1942 (see NANews, June 1970).

The year before, a Zero was found in a marsh on Guam. It was presented to the Japanese Defense Agency in November 1964 by U.S. military authorities, and is the only one of its kind on display in Japan.

Many other aircraft have been found, but the reports are somewhat sketchy. From time to time one hears an older aviator tell of the plane that was found in a barn in the Midwest or on the ocean bottom.

These planes are becoming more difficult to locate, simply because those in "plain sight" have already been found. But historical societies and museums are still on the lookout for any that may pop up.

Why? Because many consider them important to Naval Aviation history.

NAVAL AVIATION NEWS

1911 1970

RAdm. Cagle Assumes ADCNO (Air) Duties

WASHINGTON, D.C. – Admiral Thomas F. Connolly, DCNO(Air), has announced that Rear Admiral Malcolm W. Cagle assumed the duties of ADCNO(Air) in October. He replaces Vice Admiral G. E. Miller who reported for duty as Commander Second Fleet in September. Prior to his present assignment, Rear Admiral Cagle was Director, General Planning and Programming Division in CNO.

Proficient Pilot Cited

NAF NAHA, Okinawa – Orville Wright's first flight lasted only minutes, far different from the 10 to 14-hour patrol missions flown by the 1970 recipient of the Orville Wright Achievement Award – Lt.jg. John D. Taylor of VP-6, NAF Naha – who was cited for his proficiency while serving with VT-28 at Corpus Christi in 1969.

The award is sponsored by the Order of the Daedalians, a fraternity of military pilots dedicated to maintaining U.S. prominence in air and space.

Two New Helos on Order

FORT WORTH, Texas – The Marine's AH-1J *Sea Cobra*, a twin-engine version of the *Huey Cobra*, is currently undergoing BIS trials at Patuxent River.

The Marines have ordered 49 of the twin-engine aircraft which feature a turreted 20mm cannon. The *Sea Cobra* offers improved safety and performance while retaining the single-engine *Huey Cobra's* 185-mph cruise and 219-mph dive capabilities, plus outstanding maneuverability.

The AH-1J is armed with a GE XM-197 three-barrel, turret-mounted 20mm cannon which fires 750 shots per minute. Selected for attachment to its wing pylons are the XM-18E1 self-contained 7.62 mm minigun pod, the seven-tube XM-157 and/or the 19-tube XM-159. The latter two are 2.75-inch folding fin aerial rocket pods.

Production deliveries of the AH-1J will begin next spring.

Also slated for Marine utilization is the new Bell UH-1N or twin-*Huey* multi-mission helicopter. The Navy has 62 on order, 22 of which are earmarked for the Marines. Initial Marine deliveries are scheduled for February 1971 with the Navy receiving its first N's the following month.

Both the AH-1J and UH-1N are powered by the PT6T turbo "Twin Pac," designated the T400. Two turboshaft engines are coupled to a combining gear box with a single output shaft. The package produces 1,800 shp flat-rated to 1,250 shp for takeoff and 1,100 shp for continuous operation. In the event one engine becomes inoperative, the remaining engine produces sufficient power for cruise, even at maximum gross weight.

TWIN ENGINE AH-1J SEA COBRA

John H. Towers Award

NAS KINGSVILLE, Texas – In ceremonies held at this station, VT-23 was named winner of the Vice Admiral John H. Towers Safety Award. The award, established in 1968 by the Order of Daedalians, was presented by its national commander, Maj. Gen. John H. McCormick, USAF (Ret.).

The Towers Award is presented annually to the training squadron displaying the best mission-oriented flight safety program. VT-23 was selected from among the 20 training squadrons of the Naval Air Training Command.

Selected earlier this year as CNAVanTra's top jet squadron for fiscal year 1970, VT-23 has amassed more than 31,000 flight hours, completed more than 900 carquals and designated 173 new Naval Aviators while maintaining a ratio of 0.3 accidents per each 10,000 hours of flight.

New Northern Home for CVSG-50

QUONSET POINT, R.I. – On September 1, CVSG-50 arrived at its new home port and became a training element under the cognizance of Commander Fleet Air Quonset, Rear Admiral Joseph B. Tibbets.

The air group, which consists of VS-30 and HS-1, was formerly homeported at NAS Key West, Fla. Advance groups of men and aircraft began moving into the Quonset Point area in late June.

The move is part of an effort to consolidate ASW units and commands at NAS Quonset Point.

Long Haul in an A-7E is Successful

LEMOORE, Calif. — On August 25, LCdr. Robert D. Pfeifer, Attack Squadron 192, completed a nonstop, cross-continent-and-return weapons training flight in an A-7E. The 12.2-hour flight originated and terminated at this naval air station and involved the delivery of an MK 86 practice bomb on Pinecastle Target Range, Fla. Two other VA-192 *Corsair II's*, equipped with tanker stores, provided inflight refueling throughout the flight.

The record flight began at 0605 hours when LCdr. Pfeifer took off and headed east over the Sierras at medium altitude. The route of flight took him near Las Vegas, Albuquerque, Dallas and New Orleans, over the Gulf of Mexico, and well south of Pensacola. LCdr. Pfeifer began his descent to 100 feet over the Gulf and continued to approach the simulated "hostile" coastline. The A-7E's nav-computer displayed less than one percent error after the 300-mile overwater leg — notable because of the glassy sea state, which normally degrades accuracy of such a system. The coast-in point was hit on time, and the remaining 12 minutes of the overland route were flown as planned — at very low altitude and high speed. As he approached the Pinecastle Electronic Warfare and Target Range on a northwesterly heading, LCdr. Pfeifer accelerated and computed the simulated special weapon's release. When a successful systems delivery of the weapon was verified, he headed west, outbound over the Gulf. At approximately 125 miles out, well beyond effective range of "enemy" detection and interception, he gained altitude for the return trip.

LCdr. Pfeifer took off at 0605 hours and returned at 1817 hours, accumulating 12.2 hours of flight time, an unofficial world record for a single engine, single piloted jet aircraft. This betters the previously established record of 10.1 hours set by the Air Force in an A-7D.

Flying the two tanker aircraft were Lieutenants Larry J. Pickett and George P. Chalke, the *Dragons'* personnel and avionics maintenance officers, respectively. All three A-7E's returned to NAS Lemoore at approximately the same time.

NAMTD Cecil Field Receives Efficiency Award

CECIL FIELD, Fla. — The Naval Air Maintenance Training Detachment at Cecil Field has received the annual eastern region command efficiency trophy "in recognition of superior efficiency during fiscal year 1970."

Commander E. D. Jackson, officer in charge, accepted the trophy on behalf of the detachment from Commander John A. Furmaski, executive officer of the Naval Air Maintenance Group at NAS Memphis, Tenn.

The command efficiency trophy is presented annually to the training detachment in each region displaying the most efficient operation as indicated by command inspection, informal visits, user command's comments, development of techniques and procedures to increase overall effectiveness of the command's mission of serving fleet training needs, and the recommendations of the regional training officers in charge, such as the group in Memphis.

In presenting the trophy, Cdr. Furmanski cited the detachment on the "personal initiative, loyalty and devotion to duty" of each man.

The detachment, composed of a staff and some 80 instructors, each week provides 300 students with formal classroom technical training in operation and maintenance of the *Corsair II* and associated equipment.

The instructors use several classrooms and many sophisticated training aids, including operational mockups of landing gear and full size jet engines, to teach both officers and enlisted men.

The first full-system test flight of the Condor air-to-surface, television-guided missile was made from an A-6A on September 25 at the Naval Weapons Center, China Lake, with a direct hit on the target. Attack aircraft using the missile will no longer be exposed to enemy defenses, but will remain outside the range of antiaircraft fire while attacking targets.

End of an Era at Chu Lai

CHU LAI, Vietnam — "Chu Lai Air Base, dismissed." With that command, Maj. Charles J. Seals, Jr., ended a brief ceremony which gave control of base operations to the U.S. Army and thus closed another era in Marine Corps history.

Over five years have passed since components of the 3rd and 7th Marines landed on the nearby sandy beach. Since those days, Chu Lai has become one of the busiest airfields in Vietnam.

"When the *Seabees* and Marines laid 3,000 feet of aluminum runway here in May 1965, little did they know that the short airfield for tactical support (SATS) would grow to be perhaps the most progressive jet air base in the nation. Nearly two million aircraft have used this airfield, which has grown to 10,000 feet of runway," Maj. Seals said.

The complex is now under control of the Army's 362nd Air Division.

VXE-6 Supports 16th Year of Deep Freeze

ANTARCTICA — Operation *Deep Freeze* is under way again at the bottom of the world.

The 16th year of naval support for scientific research began October 8 when VXE-6's two C-121J *Super Constellations* and five LC-130 *Hercules* flew en masse from Christchurch, N.Z., to McMurdo Station, the main U.S. camp on the ice.

During the five months it is in Antarctica, VXE-6 is tasked with a wide assortment of missions. In addition to moving men and supplies between Christchurch and McMurdo, the squadron will ferry all cargo brought to the continent by ship to inland stations. Scientists, already working on nearly 50 projects, will rely on the squadron's UH-34 helos to go wherever they want in nature's greatest outdoor laboratory.

VXE-6 will also be involved with aerial photo-mapping of the Antarctic Peninsula, flying to the Russian camp at Vostok for the exchange of U.S./U.S.S.R. scientists, opening temporary and permanent stations and rebuilding the South Pole station.

The squadron's UH-1D's will also support extensive geological and paleontological studies in the Central Transantarctic Mountains.

Helping Hand from Texas

CORPUS CHRISTI, Texas — With the retirement of the venerable Beechcraft TC-45 *Bug Smasher* from the rolls of active naval aircraft, VT-10, Pensacola, Fla., found itself with hundreds of Naval Flight Officer students and insufficient aircraft with which to train them. So, VT-29, NAS Corpus Christi, Texas, was called on to provide the aircraft and personnel to support VT-10 flight requirements.

On September 1, 1970, the squadron deployed seven officers, 22 enlisted, and three T-29's to VT-10 until a replacement aircraft can be procured for the TC-45.

This is not the first time VT-29 has sent detachments to support other squadrons. The men of VT-29 note that shore duty in Corpus Christi now includes sea-duty type deployments. Under the present schedule, most of the officers and men expect to spend up to 60 days per year at Pensacola on a rotational basis.

The squadron has flown over 120,000 accident-free hours during the past 11 years. While the work is now divided between two geographic locations, the squadron will continue to train prospective NFO's in celestial and basic electronic navigation, while living up to its motto, "Night and Day, We Show The Way."

It doesn't happen every day, but it happened to Fighter Squadron 96's commanding officer, Commander Thomas G. Moore, when he brought an F-4 Phantom II down to the wire on USS America (CVA-66). It was his 1,000th carrier arrested landing! Cdr. Moore is only the sixth Naval Aviator to complete the magic total. He joins Captains George Watkins, A. J. Nemoff and E. E. Tissot, and Lieutenant Commanders R. W. Hepworth and J. H. Flatley III. Radar Intercept Officer on the milestone landing was Lieutenant Paul L. Rankin.

Project Jenny Ends After Five Years

SAIGON, RVN — Western Pacific Detachment, VXN-8, tasked with providing television and radio broadcasts to Americans and Vietnamese under Project *Jenny*, flew its last regular mission September 30.

During the nearly five years since the project started, the detachment logged more than 11,000 television and radio broadcasting hours, and 15,000 accident-free flying hours. The *Blue Eagles* flew three specially equipped NC-121 *Super Constellations* which could broadcast on two channels simultaneously from an altitude of 12,000 to 15,000 feet for over 70 miles.

Completion of a ground network in Vietnam did away with the need for *Jenny*. All but one *Super Connie* and its crew have returned to NAS Patuxent River. The one aircraft and its crew will remain at Tan Son Nhut AFB on emergency standby in case difficulties should develop at one of the Armed Forces Vietnam Network or Vietnamese stations.

A new addition to the San Diego Aerospace Museum — seven types of wings awarded to Naval Aviation officers and enlisted men — is presented to Curator Owen Clark by Captain Newton Foss, left, NavAirForPac. Phil Hilton of L. G. Balfour Co., which made the wings, is in center of photograph.

GRAMPAW PETTIBONE

Splat

It was a dark and stormy night aboard the large CVA deployed to the northern oceans. The weather was about 800 feet, broken clouds, the wind was blowing hard and there was a moderate to heavy swell. The moon had not yet risen as the F-4B *Phantom II* came down the pipe in the soup from marshal.

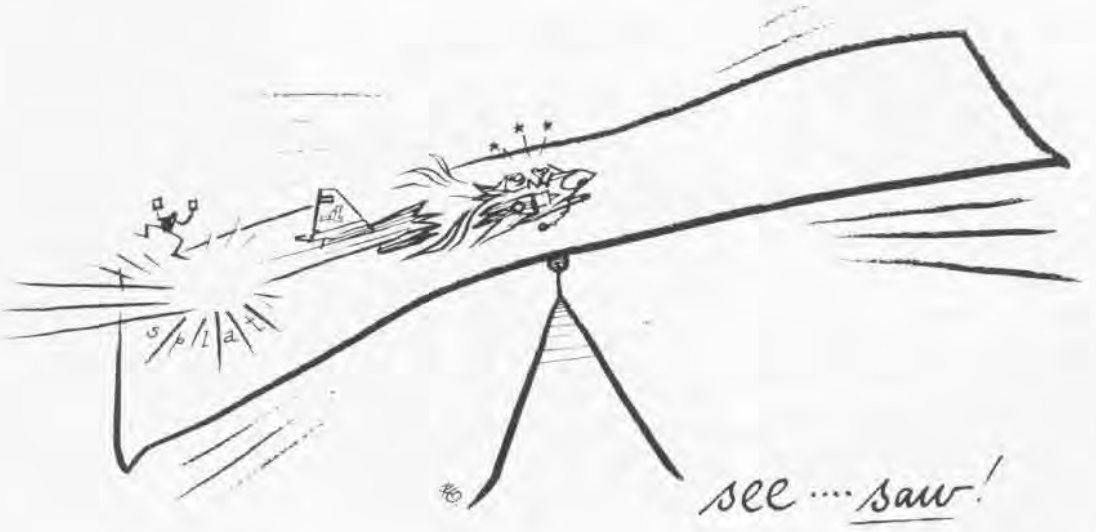
The lieutenant junior grade pilot steadied down as best he could, but received a wave-off from the LSO because of an excessively pitching deck. The *Phantom* entered the night bolter pattern and CCA directed it onto glide path. The pilot acquired the meatball at about one mile with a fuel state of 4,400 pounds. Coming closer to the ship, he could see that the deck was pitching more than expected. The Fresnel lens was unusable in close because the meatball was going off the top and off the bottom. Paddles made his first advisory call, "A little low." The pilot added some power and checked his sink rate. The LSO advised he was looking good, that the deck was pitching and to hold what he had. The next call was "going a little high" and the final call was for attitude. No power or wave-off calls were given.

The *Phantom* hit the deck in nearly a three-point attitude and engaged the #4 wire. The nose gear began to collapse immediately and the force of the landing broke the back of the airplane, allowing the nose to fall forward and the tail to fall back to the deck. The crippled F-4 slid to a stop, burning fiercely. The pilot was stunned, and when he tried to bring the throttles back, he found they were stuck and he couldn't secure the engines. The radar intercept operator thought they had just made a pretty hard landing and didn't realize anything was wrong until he saw, in his rear view mirror, flames coming out directly behind the canopy. He then realized the danger and quickly left the aircraft. The pilot, still stunned (and with a spinal compression injury), was assisted in his egress by flight deck personnel.

The fire was quickly extinguished by the deck crew; however, the poor *Phantom* was a complete loss.

Grampaw Pettibone says:

Holy mackerel! Wha' happened? Sure glad they caught a wire. The LSO said the pilot "went for" the pitching deck, which was going down, then started up at the last second. That made the accident primarily pilot error, but the real question is, "Why was a nugget pilot set up for this accident by the boss in the first place?" The manual meatball should have been in use. The plane should have been diverted to a nearby shore field. But here's the clincher, the LSO thought it was the C.O. in the plane, and of course he coulda' backed it. Wish we could stop makin' piles of junk outta' these expensive airplanes.



ILLUSTRATED BY Osborn

Will the Real Airfield Speak Up

The F-4J squadron commanding officer briefed his wingman and the RIO's for a night section, combat air patrol mission from the CVA in the eastern Mediterranean. Aircraft were manned at 1700 for a 1730 launch. All went well except that the wingman's plane seemed to have a scratchy UHF transmitter.

At about 1750, the ship requested that they proceed toward the primary divert airfield to check the navaids and the weather. The C.O. did, approaching to about 50 miles. The Tacan checked and the tower relayed the weather. The flight immediately switched back to the ship's frequency and advised that the divert field was VFR with a 30,000-foot thin cirrus layer and seven miles' visibility.

The recovery started normally with the C.O. calling the ball shortly after 1900 with 4,800 pounds. Just before touchdown, he received a foul deck wave-off and started around the bolter pattern. Ship's personnel had discovered that the #1 cross deck pendant had broken wires and the #2 arresting engine had a major hydraulic leak. Because of the time needed to make repairs, it was decided to divert the *Phantoms*. By this time, the second F-4 had been waved off and the C.O. was back at the 45° position. "Your signal bingo, the airfield bears 125° at 115 miles." The two planes headed for land individually.

At about 80 miles out from the ship, the C.O. switched to the airfield Tacan station, but the needle and DME would only spin. When he called approach control, he received no response, and the tower didn't respond either.

The C.O. crossed the beach line and began flying a search pattern up and down the coast, slowly letting down. He had no success on any frequency or guard channel, nor could he get anything but the ship on Tacan. As he continued the search pattern and let down slowly to 5,000 feet, he could make out the coastline but could not find any lighted airfield. Occasionally he heard a weak call from the wingman who was having the same problems. With 400 pounds of fuel remaining, he heard a weak transmission from the wingman, "We have touched down." The C.O. called for a short count, but heard no more. It was later learned that the wingman had found the unlighted airfield and landed — shutting down his engines for fear of going off the end of an unknown runway.

The C.O. then told his RIO to stow his equipment and get ready to eject. With 200 pounds of fuel remaining, the pilot saw the lights of the runway come on and the tower broadcast the statement, "It is good for landing." They were, however, still some ten miles east of the field, and as the fuel gauge reached 100 pounds, the engines flamed out. The RIO immediately ejected — on the advice of the C.O. who followed right behind.

Uninjured, they were picked up shortly by military personnel of their host country.

Grampaw Pettibone says:

Sufferin' catfish! How about them apples? This accident was the most confused comedy of small errors by so many people that it would (and did) take a whole book to explain it. Suffice it to say that the foreign military airfield personnel never received the request from the U.S. Navy to be open for divert aircraft from the carrier. They had dutifully shut off the Tacan, radios and lights and had gone home for the evening when it got dark — shortly after the F-4's had called for the weather. The C.O. hadn't checked with them to see if they were planning to remain open.

When the base commander and his people heard the distressed *Phantom* flying overhead, they made a mad scramble to get the lights on and their radios manned but were just a few minutes too late. Some days you just can't seem to make a nickel.

Memo from Gramps: IF

If every component put on an airplane would function all of the time as it was designed; if we could maintain an airplane to absolute perfection; if the weather were CAVU every day; if pilots and crew members never made a bad decision or mistake, we wouldn't have any more accidents and Ol' Gramps could retire to the country. Unfortunately, these *if's* are still *if's*.

To prevent the emergency conditions that are going to occur from becoming accidents and to reduce those bad decisions and mistakes made by air crews to a minimum are the goals of Aviation Safety. They can be reached, *if* every aviator and every aircrewman approaches his job as a true professional, with pride in his work and the determination to do his very best.

MAKING OF A FIGHTER

By LCdr. Paul Mullane

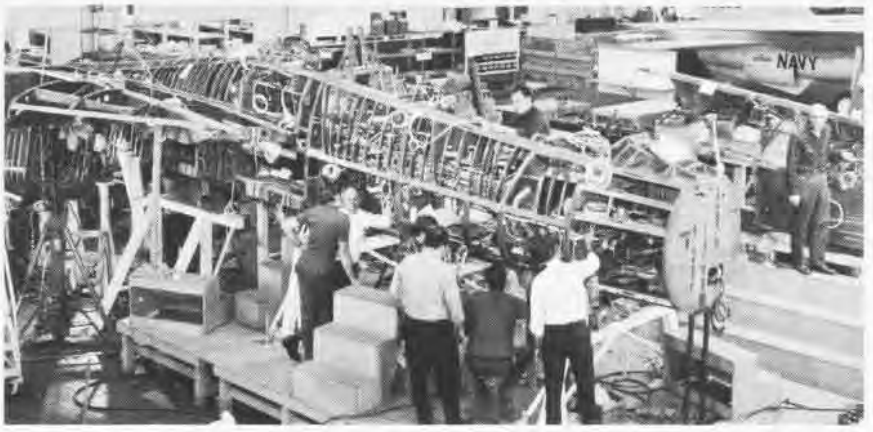
The Navy's newest, hottest fighter, the F-14A, planned replacement for the F-4 *Phantom*, will soon make its first flight. The tandem-seat, variable sweep, twin-engined fighter is designed to provide air superiority from the Navy's mobile carrier force. To carry out its assignment, the F-14 will be equipped with *Sparrows* and/or *Sidewinders* and a 20mm variable rate-of-fire M61 cannon. For fleet defense, a palletized *Phoenix* missile system can be installed when required.

The F-14A has come a long way since the wood, fiberglass and metal full-scale replica was inspected by some 275 members of the Navy Mock-up Review Board in May 1969. The Navy team, in addition to inspecting numerous aspects of the Grumman-built aircraft's design, witnessed various demonstrations of the aircraft's equipment and its operation.

Though no significant changes resulted from the review of this supersonic, swing-wing fighter, other than some reduction in weight and cost, (a rare occurrence at this stage of development) a great deal of work and testing still lay ahead. Component parts had to be fabricated in a variety of metals, fibers, plastics and exotic materials; assembled to form the major sections of which the aircraft is composed; and then joined in final assembly. Aircraft systems and subsystems had to be constructed, fitted into their assigned locations and connected into a working system.

Throughout the fabrication-to-assembly process, one key function remained in evidence — testing. Testing the engines, the fuel system, the controls and crew escape system. Testing the wing pivot mechanism and the boron-epoxy stabilizer skin panels. These tests turned up only a few problems to be corrected, and assured that the finished aircraft would perform as expected.

To carry out the testing program, a wide variety of test stands and especially designed devices were utilized. Most impressive is EMMA (Engineering Manufacturing and Mock-up Aid), a completely representative, but non-flying, prototype airframe built to match its flying counterpart in nearly every detail. EMMA verifies structural compatibility of component parts and the runs of tubing, cable and electrical wiring throughout the plane. Any errors or deficiencies are thus discov-



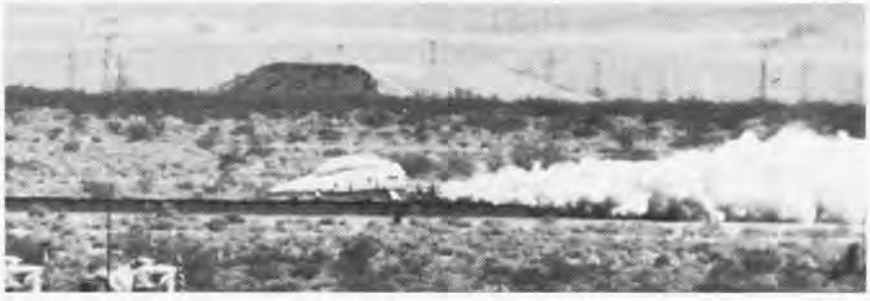
Members of the Navy mock-up review team huddle with a Grumman representative, upper left, to discuss question about projected new fighter. One-tenth scale model of the F-14, above, is placed in Grumman's anechoic chamber for antenna pattern testing. At left, the forward section of EMMA receives wiring and hardlines to determine if any corrective measures are needed for routing and attachment plans.

ered early in the program and corrected without delaying the construction of the actual aircraft. Built of cheaper, more easily worked materials, using shortcut fabrication methods, EMMA gives the manufacturer a significant advantage in establishing specific locations for those important details, such as where clamps, brackets and disconnects are to be placed for ease in maintenance. It has allowed the development of electrical cable assemblies, harnesses and harness boards in advance rather than to prototype the job during actual installation in the first aircraft. In addition to serving as an aid in forming the most logical installation and routing sequence and in reducing the number of separate wire runs in the electrical system, EMMA helped to insure that the approximately 1,000 hard lines (tubing for hydraulic and fuel lines, etc.) in forward, mid and aft modules did not conflict with the structure, electrical harness, ducts or other components.

EMMA also assisted subcontractors, building various assemblies for the F-14, in checking their component structures against the non-flying prototype to verify a parallel mock-up for their hardlines and harness. Design of instrumentation required for the first prototype aircraft was checked out in EMMA to determine bracket installation, component and wiring location, wire lengths and additional hole requirements. Perhaps as important as all these advantages, this non-flying, full-size model has given invaluable training to the shop foremen who constructed EMMA and who will oversee the construction of production aircraft.

That other earthbound F-14, the wooden mock-up, also continues to prove useful. As a vehicle for antenna pattern evaluations and preliminary evaluation of exterior and interior lighting, it provides much valuable information. Checkout of AIM-7 *Sparrow*, AIM-9 *Sidewinder* and AIM-54 *Phoenix* missile antennas was completed in September and evaluation of anti-collision, approach, formation and refueling probe lights is now under way.

Another partial mock-up, duplicating parts of the forward section, has been subjected to tests at Grumman's Calverton facility and at the Naval Weapons Center, China Lake, to evaluate the crew escape system. All components, including the Martin-Baker ejection seat, canopy system, escape



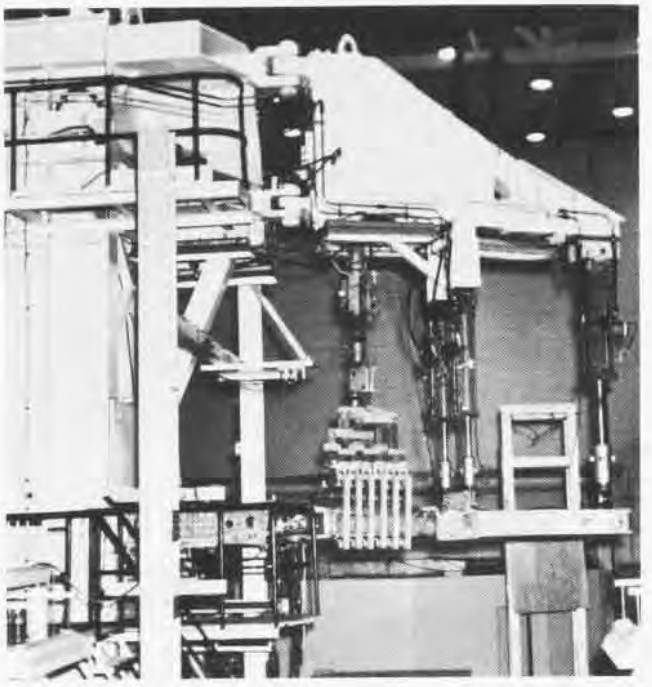
Life-like dummy, representing the NFO missile control officer, rockets skyward from test sled during tests conducted at China Lake. Sled, right, accelerates for another test run. The "Iron Monster," top right, tests the F-14's major hydraulic-mechanical components. Tanks and plumbing of the fuel test system are assembled, right center.

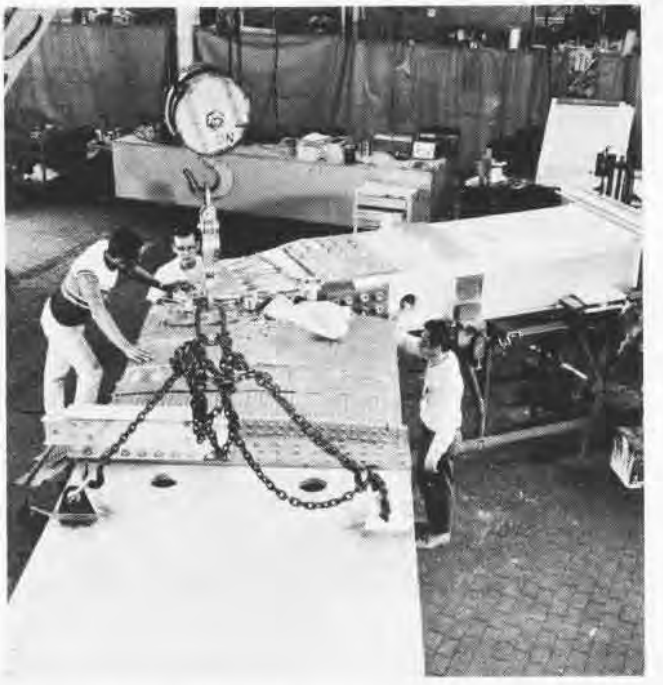
system mode selection and pyrotechnic initiation system, have been operated both statically and on a rocket-boosted sled at speeds ranging from 100 to 600 knots. These tests are in addition to ejection seat tests covering a total of 22 separate conditions representing the limits of the flight envelope conducted by the Martin-Baker Company at their facilities in England. The Naval Aerospace Recovery Facility, El Centro, Calif., has also conducted a series of seat ejections to establish the trajectory of seat and occupant from various flight attitudes.

Besides those bearing a resemblance to the F-14, there are a number of test stands which, though equally important to getting the plane airborne, would never be confused with it. The *Iron Monster*, officially known as the flight control/hydraulic test stand, is one of these. It is designed to provide for operation of the flight control system and major hydraulic-mechanical components, as well as integrated electronic subsystems, under the closest practical simulation of actual flight conditions. The test stand duplicates the significant factors of the aircraft's configuration in a structural steel framework. The flight control system and other auxiliary mechanisms and hydraulic components are all located in close relation to those in the actual vehicle, including the titanium tubing, hydraulic pumps and reservoirs. Aerodynamic loading of control surfaces, provided through an analog computer programmed with F-14A flying characteristics and performance parameters, closely simulates flight maneuvering conditions on the test stand. Checkout of primary flight controls and dynamic response of flight control actuators began in August 1970. Other evaluations examined hydraulically powered mechanisms affecting stability augmentation, Mach sweep program functions, engine inlet system operation and approach power compensation.

A fuel system test stand, containing a complete mock-up of major components, connecting lines, pumps, valves and tanks, and arranged in close duplication of the F-14 layout, was used to check out that system. Testing facilities include scales to weigh fuel in order to provide an accurate check against indicated fuel quantities. Specific tests were conducted in fueling and defueling operations, engine fuel and fuel transfer functions, unusable

Plastic protective covering is applied to brown-epoxy surface of horizontal stabilizer before going to oven for curing, left. Titanium wing pivot undergoes extensive fatigue and static loading tests while at varying angles of sweep. Testing, lower left, is at LTV's Dallas facility and, below, at Grumman's Bethpage plant.





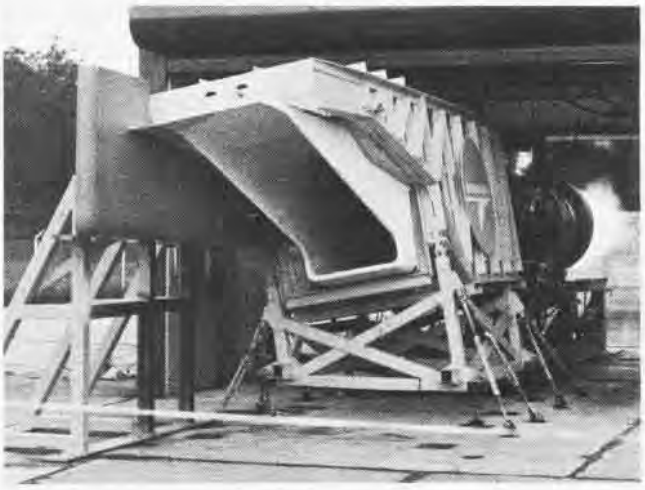
fuel determination, jettison operations and c.g. travel due to fuel consumption.

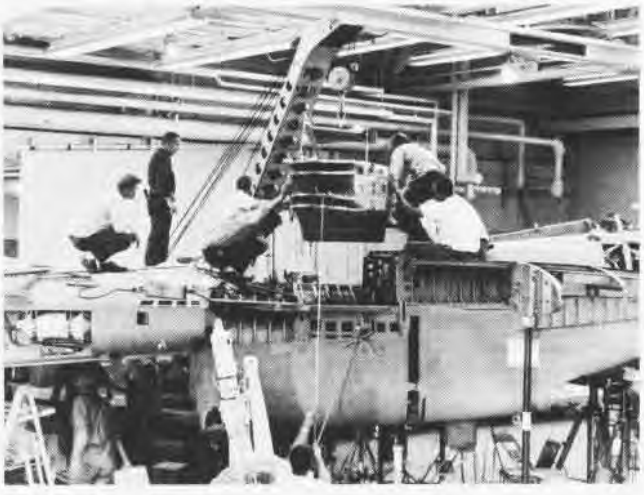
Environmental control system testing was conducted on a number of specialized test stands and mock-ups simulating various portions of the system, such as cockpit air distribution and canopy defogging. Other tests studied nozzle configuration for air blast rain removal and windshield anti-icing. Early in 1970, the forward section mock-up used in these tests was used to determine cooling air distribution for electronic equipment and temperature control evaluation. Of special interest to prospective crew members are the tests performed to obtain data concerning suit ventilation.

The structure of the aircraft itself has received special attention in a variety of tests. The wing center section box beam and wing pivot attachment, structural heart of the F-14 design, constructed almost entirely of titanium, have been subjected to extensive fatigue and static load tests. Static tests with bending loads placed on the pivot structure, with the wing at various fixed sweep angles and during sweeping operation, demonstrated satisfactory results. The pivot bearing was also evaluated and found to provide acceptable low friction at both ambient and −45° temperature conditions. Box-beam fatigue testing was conducted to a level of twice service life successfully and is continuing to destruction — to determine its strength margin in excess of design.

The F-14 features the use of boron filament composites, for the first time, as structural elements of primary control surfaces. Boron-epoxy has shown outstanding weight to strength ratios, saving 180 pounds in the horizontal stabilizer, and greater fatigue strength than titanium, steel or aluminum. Structural tests on a full-scale prototype horizontal stabilizer, begun in April 1970, studied the effects of static loads, torsion and bending, high temperatures, vibration and even lightning strike. By September 1970, tests had achieved twice the design-fatigue life (12,000 equivalent flight hours).

To insure the correct match of airframe with engine, extensive engine inlet compatibility testing started immediately after the mock-up review. The tests studied airflow in and around the inlet, and necessary design corrections were made to assure distortion-free air flow. With comparatively minor





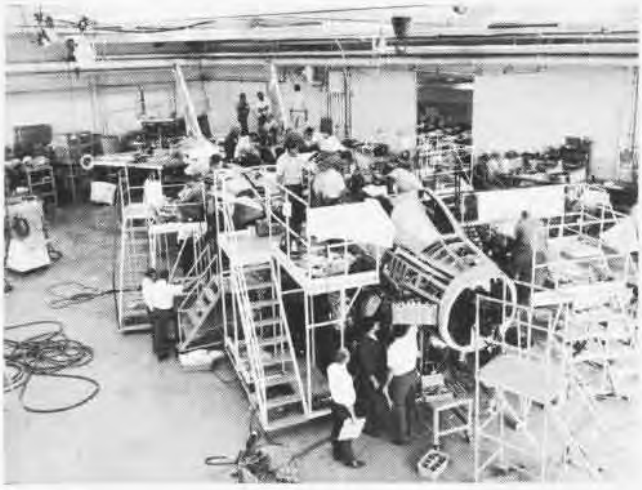
M61 gatling gun for F-14 is fired at a General Electric test facility, above. Pratt & Whitney TF-30P-412 is run with its engine inlet, on a Grumman test stand, to check distortion-free airflow, top right. Box beam is lowered onto first F-14, right.

inlet lip changes and additional bleed to prevent a random engine stall, the inlet was teamed with the Pratt & Whitney TF-30P-412 engine, equipped with a prototype convergent-divergent exhaust nozzle. Satisfactorily completed testing included checks on trimming procedures, accessory equipment and power extractions.

Though not a part of the test program leading to the F-14's first flight, other important tests continue to provide valuable data and confirm design concepts which will be utilized in later aircraft. Grumman and General Electric, working together, have been testing the F-14's six-barreled M61 20mm gun, its feed system and its environmental effects on the airframe installation. Muzzle-blast and vibration-effect studies have been completed. Gun gas concentrations and compartment purging systems are undergoing study, as are magazine arming and reloading, and maintenance operations.

Other parts of the weapons system, not related to first flight, are being tested at the Naval Missile Center, Point Mugu, Calif. There, a systems integration test station (SITS) is used to evaluate the complex avionics system, including the Hughes AWG-9 missile control system. Located on the third story of a laboratory building, the mock-up installation looks out over Point Mugu's sea test range where its systems can perform most of their designed functions without ever becoming airborne. The advantage of SITS is that the number of flight tests in the F-14 will be sharply reduced and the time required to prove out the avionics system will be cut nearly in half. So far, using SITS, communications and ECM integration have been completed, primary static and dynamic navigational integration tests are complete and the AWG-9 computer is fully integrated.

At Grumman's facilities, after satisfactory completion of applicable tests and the fabrication and assembly of major structures, all component parts were gathered for final assembly of the first F-14. The forward, mid, and wing sections and horizontal stabilizer built at Grumman, the aft module from Republic, aft engine frame and engine inlet from Rohr, and the fin and rudder from Fairchild Hiller, along with slats, flaps and spoiler from Kaman and engines from Pratt & Whitney, were brought together at Grumman for the first time. The first F-14 began to take its final form in mid-August when the forward and mid sections were joined. As other sections were added, additional testing was begun to assure that hardlines were pressure and leak-tight,



Swarm of workers cover F-14 during construction, top left. With main sections joined, the first plane is trucked to Calverton plant for final assembly, left. Above, taxi tests conclude pre-flight testing and, below, F-14 spreads its wings for first flight.

that wiring circuits functioned properly, and that mechanical parts were correctly rigged. Final checks were made, concentrating on subsystems such as flight controls, autopilot, Mach sweep programmer and air data computer. Engine inlet ramps were checked out in both automatic and manual. Wings were swept and engines run through a series of function checks and thrust calibrations at full afterburner power.

Then, in November, F-14A, bureau number 157980, was rolled out of its hangar at Calverton, N.Y., 85 miles east of Manhattan, to begin its taxi tests. During these ground tests, flight controls, flaps, slats, nosewheel steering and flight instrumentation were checked. After finishing checks and final tests are conducted on the Navy's newest air superiority fighter aircraft, it will literally spread its wings to make its initial flight.

QUICK DRAW U.

As a result of a Naval Air Systems Command study analyzing all aerial engagements in Southeast Asia from July to November 1968, an immediate need was recognized for improved missile reliability and related missile systems and for better trained, highly skilled fighter crews to operate those missiles and systems.

To remedy part of the deficiency, on March 3, 1969, the Navy Fighter Weapons School was established at NAS Miramar under the operational control of ComNavAirPac.

The mission statement of the school is brief and to the point: "To provide graduate level F-4 and F-8 weapons training to career oriented, exceptionally qualified fighter crews . . . in an attempt to build a nucleus of eminently knowledgeable fighter crews to construct, guide and enhance squadron weapons training and subsequent deployments. They will be the fighter community's foremost operationally oriented weapons specialists."

To accomplish the school's immediate objective of placing at least one graduate in each Navy and Marine fleet unit as the squadron's weapons/tactics instructor, two courses were created for the men who fly the F-4 *Phantoms* and F-8 *Crusaders*. Training in the F-4 is conducted by RAG squadron VF-121 whose call sign is *Top Gun* while *Crusader* pilots take their training under the auspices of the *Gunfighters* of VF-124, the F-8 RAG.

Classroom work is an integral part of the school's curriculum. Here, an instructor explains missile components prior to a shoot.

Advanced fighter students receive 75 hours of classroom instruction and 25 hours of actual flight application during a one-month period. Included in the syllabus are conventional weapons delivery, air-to-air gunnery and air combat maneuvers against the F-4, F-8, A-4, A-6 and the Air Force's F-106.

During the month-long course of instruction, students fly to the MCAS Yuma complex and Chocolate Mountain to conduct air-to-ground exercises. Then the fighter pilots practice air-to-air gunnery techniques on a *Dart* target towed by an A-4 *Skyhawk*. Upon completion of the gunnery exercises, each student flies 12 air combat maneuvering flights. Here, the cardinal rules of air tactics – maintain constant mutual support and keep your Mach up – are refined, updated and im-

proved based upon intelligence and lessons learned in actual air combat.

The final week of the syllabus is a live missile shoot which pits the student against the Ryan BQM-34A *Firebee*. The "shoot-out" is conducted with two aircraft working simultaneously and having a "clear to fire." After a visual identification pass on the target, the two fighters take up dogfight positions and the action begins. The supersonic *Firebee* is constantly maneuvered up to 4.7 G's and travels at a rate of 425 knots, closely simulating an actual enemy engagement.

The BQM-34A's are equipped with a telemetering package which indicates the exact firing parameters and reveals whether or not a "kill" was made. Ultimately, the engagement decides if, after many hours of instruction in missile technology, theory and design, radar interface, and computer functions, the students have "it all together."

To make certain that they do, the Navy Fighter Weapons School has assembled a staff of some of the most outstanding and proficient members of the fighter community, including two RIO's with one Mig-17 each to their credit. Each instructor spends considerable time conducting research and examining intelligence material so that he maintains a high level of expertise.

Students selected to attend the school are picked by their squadron commanding officer, according to assigned quotas based on current deployment schedules.

An interesting and valuable program has evolved from the Fighter Weapons School, the Fleet Adversary Program. After the students have returned to their units and have spent several weeks instructing squadron members in the tactics and lessons they learned, members of the school staff spend ten days with the squadron in an "adversary" role. Flying TA-4 and A-4E *Skyhawks*, the staff members provide Mig simulation and engage the squadron in 88 sorties. Through a combination of two-on-one and two-on-two situations, pilots and RIO's learn new techniques and sharpen old ones.

Graduating an average of 15 *Crusader* pilots and 52 *Phantom* pilot/RIO teams a year, the Navy Fighter Weapons School has greatly contributed to the proficiency and prowess of the Navy's fighter squadrons since the first class left to join the fleet in April 1969.

Fighters from all over the fleet are represented at the Navy's Fighter Weapons School, top, opposite page. At laboratory period, students receive instruction on the Sparrow, below. Above, ordnance men prepare an F-4 Phantom for an exercise.

NAVAL AVIATION NEWS . . . and views

Pony Express

NAS Miramar riders gallop past VF-121 Phantoms as they re-enact Kit Carson's ride to save the besieged forces at Escondido. The original ride, commemorated as part of the city's Kit Carson Day celebration, aided in winning California for the Union.

PH3 Ralph A. Pabst

Easy Does It

A passenger in an HC-7 Det. 110 logistic helo takes a ride on a rescue hoist as he is lowered to a ship in the Tonkin Gulf. Operating from a carrier, the detachment also ferries mail and supplies to ships scattered throughout the Gulf.

Soapy Situation

Washing a plane isn't much different than washing a car — except for the size — as this VF-161 sailor discovers as he pours the suds to an F-4B Phantom at NAS Miramar, California.

PHC C. L. Wright

THE SELECTED AIR RESERVE

Cans Get Canned at Los Al

Lt. Ronald Sher, Navy Exchange officer at NAS Los Alamitos, has come up with a double duty brainstorm that aids the air station and the Navy Relief Society.

A white dumpster where soda and beer drinkers are encouraged to deposit their empty cans has been set in front of the station's exchange. Every ten days the dumpster is emptied, and the aluminum cans are crushed and stored at the public works department until they can be taken to a local dealer.

The crushed cans are sold for ten cents a pound, and Lt. Sher estimates that Navy Relief is $200 richer than it was before the project began.

Alameda Helps Oakland Schools

Representatives of the Oakland public schools are using NARTU Alameda as part of a vocational education program. They are compiling slides for a presentation aimed at interesting high school youths in vocational programs around the Bay Area. One segment of the presentation deals with on-the-job training provided by the Naval Air Reserve, depicting NARTU personnel performing maintenance work on aircraft.

The presentation will give students concrete evidence that there are vocational job opportunities available after they graduate.

Joint Use Agreement

A 25-year lease and joint use agreement has been signed providing for civilian utilization of the runway, taxiway, control tower and air navigation facilities at NAS South Weymouth.

Under the agreement, the Navy has complete control over the number of takeoffs and landings by civilians whose flying is limited to business or executive flying aboard the station.

"The Navy is very pleased with the contract, and we at the air station are looking forward to the addition of the civilian aviation community," said Captain Russell L. Smith, commanding officer. He also said that he foresees no conflict with the Navy's flight operations aboard the base.

Additional facilities will be constructed by civilian authorities on land adjacent to the air station. Included will be a short taxiway — from the existing taxiway to the civilian part of the airfield.

Old Home Day

When Rear Admiral Dallas F. Jordan was at NAS Corpus Christi September 4 to present wings to graduating student Naval Aviators, it was almost like being home. Adm. Jordan, an active Reservist from Dallas, was a member of the first class of student aviators to graduate at NAS Corpus Christi in 1941.

The admiral is chairman of the Naval Reserve Policy Board, a member of the CNAResTra advisory staff, and national president of the Navy/Navy League-sponsored Sea Cadet Corps. He has served with the Naval Air Reserve at Dallas since WW II, commanding three Reserve squadrons and the former Naval Air Reserve Wing Staff 70.

During WW II, he flew TBF *Avenger* torpedo bombers off USS *Saratoga* (CV-3) in the Gilbert and Marshall Island campaigns. He later served in the European theater as an observation pilot aboard the battleship, USS *Washington* (BB-56), then as a flight instructor in torpedo aircraft operational training at Ford Lauderdale, Fla.

MARTD at Lakehurst

A Marine Air Reserve Training Detachment is taking final form at NAS Lakehurst. HMS-49 and HMM-768 from NAS New York began moving into Lakehurst during the latter part of September, and HMM-722 from NAS Willow Grove followed soon after.

HMM-768 and 772, flying H-34's, perform a variety of tasks ranging from troop transport to medevac missions. HMS-49 will act as support unit for the other two squadrons.

CVSGR-70 Trains in ASW

The first of several exercises designed to teach Selected Air Reservists the newest techniques in ASW operations was held in the Atlantic in September.

Taking part in the exercise were VS's 71 and 73 and HS-75 from NARTU Lakehurst; VS-72 from NAS Norfolk; and HS-74 from NAS Quonset Point. These five Reserve squadrons make up CVSGR-70.

The exercise was a fully simulated combat exercise to test the capabilities and limitations of the newly formed squadrons. Several U.S. submarines posed as the "enemy." The mission of the squadrons was to detect the enemy and maintain constant surveillance.

Operating from NAS Quonset Point, the squadrons flew S-2E *Trackers* and SH-3A *Sea Kings* during the exercise.

Clark Trophy

NAS Atlanta was awarded the Sheldon Clark Memorial Trophy at the ninth annual Naval Reserve luncheon held in Washington, D.C. The air station, commanded by Captain Theron J. Taylor, won the trophy for achieving the highest score in combat readiness during fiscal year 1970.

Present at the luncheon, hosted jointly by the Navy League of the U.S. and its D.C. council, were Vice Admiral Bernard M. Strean, CNATra, and Rear Admiral Howard E. Greer, ComNavAirResFor/CNAResTra.

The trophy is a clock mounted on wood from the flight decks of the WW II carriers USS *Franklin* (CV-13) and USS *Enterprise* (CV-6).

NAVAL AVIATION NEWS

3,000 Buckeye Hours

PENSACOLA, Fla. – Three thousand hours in one type aircraft is the accomplishment of LCdr. B. B. Berry, safety officer and air-to-air gunnery instructor of Training Squadron Four.

LCdr. Berry has been flying the T-2 *Buckeye* in the Naval Air Basic Training Command since 1963. He has flown the A, B and C models of the T-2. In the C he adds one or two hours to his flight log each day.

With a lifetime total of over 7,000 accident-free hours, Berry has flown more than 17 different types of naval aircraft, ranging from the N2S and F4U to the F9F.

CNABaTra Awards E to Ellyson's HT-8

PENSACOLA, Fla. – In September, Helicopter Training Squadron Eight of Ellyson Field received the 1970 Efficiency Award for its outstanding performance in the Naval Air Basic Training Command.

HT-8 won the coveted E in competition with nine other squadrons in the training command. The yearly award is based on training, aircraft maintenance, aviation safety, operations and public works services. Also considered are the performances of the medical, dental, supply, legal and administrative departments.

The Basic Training Command consists of 10 training squadrons, five naval air stations, the training carrier *Lexington*, a Marine air detachment, and more than 12 airfields in Mississippi, Alabama and Florida.

The award is also presented to a naval air station within the command. Saufley Field won the honors.

Middie Flying Course

ANNAPOLIS, Md. – In September, 18 Naval Academy midshipmen reported to Baltimore's Friendship Airport for the first step in a new aviation indoctrination program which could lead to a private pilot's license.

The Navy-sponsored program will provide qualified Annapolis midshipmen with up to 35 hours of private flight instruction in one of six two-seat American Aviation *Yankees*. According to the officer in charge, Lt. Glen W. Ritchey, the students fly on designated Saturdays and Sundays under the supervision of FAA certified flight instructors.

The program, open only to first classmen, is designed to interest a midshipman in aviation and to determine if he possesses aeronautical suitability for further Naval Aviation training. Previously, midshipmen who were prospective Naval Aviators had to wait until graduation and then travel to Pensacola to determine their aptitude and suitability.

Upon completion of the course, the student becomes eligible for a private pilot's license. However, qualification for the latter is not a requirement.

It is expected that about 250 midshipmen will take advantage of the special program during the current academic year.

The program is also being offered to selected students enrolled in the Naval Officer Candidate School at Newport.

British Pilot No. 1 at Test Pilot School

PATUXENT RIVER, Md. – Flight Lieutenant Ronald S. Burrows, RAF, was selected outstanding student of Class 56 at the Naval Test Pilot School.

Graduation exercises were held October 9 after eight months of rigorous work in the academic and flight phases for 19 students. Guest speaker was Rear Admiral D. D. Engen, Director of Strategic Plans and Policy, CNO.

New Squadron and Aircraft for Whidbey

OAK HARBOR, Wash. – In September, Heavy Attack Squadron Ten (VAH-10) was officially redesignated Tactical Electronic Warfare Squadron 129 (VAQ-129). Nicknamed the *New Vikings*, VAQ-129, with a complement of approximately 28 officers and 160 enlisted men, is the newest tenant aboard NAS Whidbey Island. The new squadron's primary mission is to train flight crews and maintenance personnel for their transition to the EA-6B.

Delivery of the newest *Intruder*, to be based only at Whidbey Island, is scheduled for early 1971.

The EA-6B is a complex electronic warfare aircraft. The crews, consisting of a pilot and three highly trained electronic warfare officers, will receive final training at VAQ-129.

The control of VAH-10's *Skywarrior* detachments currently deployed will not change. Detachment 19, scheduled for a WestPac deployment, will be the last detachment of A-3's to deploy from Whidbey. Other VAH-10 detachments are currently in WestPac. The detachments provide electronic warfare and aerial refueling support for carrier-based aircraft.

NAVAL AIRCRAFT

The Vought VE-7 was not the Navy's first fighter plane nor was it the first aircraft to fly from a U.S. naval vessel. It was, however, the first aircraft to fly from an American aircraft carrier and later was used to equip the first fighter squadron to operate from a U.S. carrier, VF-2. The ship was USS Langley, the date was October 17, 1922, and Lt. Virgil C. Griffin was at the controls of the nimble fighter.

The Lewis and Vought Corporation designed the VE-7 as an advanced trainer during World War I. The war ended before production could get underway, but the Navy became interested and acquired a total of 128 of the planes, built both at Vought and the Naval Aircraft Factory. The first was delivered in May 1920.

The Navy model was powered by a 180-hp. Wright-built Hispano-Suiza engine. Though it had a rather long wing span, it proved quite maneuverable and sturdy. In the fighter version (VE-7S or SF), the forward seat was covered over and the pilot occupied the rear seat. In the seaplane modification (VE-7H), it served as a standard observation/scouting airplane and was catapulted from battleships and cruisers during the early 1920's.

Since land planes operating over water were sometimes prone to have problems, the Navy provided many with emergency flotation equipment—thus VE-7SF could be read Vought, model 7, single seat fighter, with flotation gear.

The VE-7, also flown by the Marine Corps, remained first line equipment with the Navy until 1926. Three were still assigned to Langley in 1927. The VE-7's last service with a combat unit was with VO-8M in 1928, a rather active life for an aircraft designed as a WW I advanced trainer.

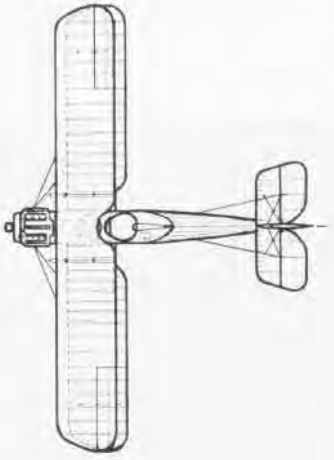
VOUGHT VE-7

Top left: VE-7
Middle left: VE-7H
Lower left: VE-7SF
Top right: VE-7
Middle right: VE-7SH
Lower right: VE-7SF

VE-7 VE-7H

VE-7SF VE-7SH

Length	24'5"
Height	8'7"
Wing span	34'1"
Weight, empty	1,505 lbs.
Weight, gross	2,100 lbs.
Power plant	180 hp. Wright E-2
Maximum speed	121 mph (sea level)
Ceiling	15,000 feet
Range	291 miles
Armament	1 Vickers (later Browning) synchronized cowl-mounted .30 cal. machine gun



at Sea with the Carriers

ATLANTIC FLEET

Saratoga (CVA-60)

A visit to *Saratoga* as she cruised off Naples was President Richard M. Nixon's second stop on his five-nation tour of Europe in September — and his second visit to *Sara*. The first time was in 1969 during operations off Norfolk.

The presidential party included Secretary of Defense Melvin R. Laird and Secretary of State William P. Rogers.

Among the many dignitaries on board to greet the Commander in Chief were Captain Dewitt L. Freeman, commanding officer; Admiral Thomas H. Moorer, Chairman, Joint Chiefs of Staff; and Admiral Elmo R. Zumwalt, Jr., Chief of Naval Operations.

The guests witnessed a demonstration of ship and air firepower by 12 ships of the Sixth Fleet, and an overflight of jet fighters from embarked Carrier Air Wing Three.

Wasp (CVS-18)

Wasp recently returned to her homeport of Quonset Point, R.I., from a four-month North Atlantic deployment, during which she held an open house in each port visited as part of Operation *Handclasp*.

A native of Indonesia, Johannes VanLeeuwan, has been named "Sailor of the Year" aboard CVS-18. The young sailor's success story took him from Indonesia to Holland to the United States, and finally into the Navy two years and nine months ago. A heavy voltage specialist, he hopes to make the Navy his career.

A pair of warrant officers have been serving on the bridge of *Wasp* as officer of the deck (OOD), a job usually held by line officers. Ensign (until just recently CWO2) M. Richard Tucker and WO Herb Stephans spend as many as six hours of extra duty a day in this capacity. They qualified as OOD's by standing indoctrination watches and passing written and oral exams.

Most Naval Aviators don't have an opportunity to train as bridge watchstanders, but LCdrs. Ted Dyer, VS-22, and Gary Kochert, HS-5, have also earned their qualifications as OOD. Realizing that career naval officers must have experience in a variety of fields, these men have added bridge watches to their primary and collateral duties.

Wasp is commanded by Captain John F. Gillooly.

President Nixon greets the men of Sara as Secretary of Defense Laird looks on. The Commander-in-Chief visited the carrier during his European tour as she cruised off Naples.

Intrepid (CVS-11)

Before the America's Cup Race, two *Intrepid* skippers got together when Captain Isham Linder played host to Commodore William Ficker, skipper of another *Intrepid*, the racing yacht — while the carrier was docked at Quonset Point, R.I.

In an exchange of gifts, Commodore Ficker presented "Ficker is Quicker" buttons to the entire carrier crew. *Intrepid* yachtsmen claim that rubbing these buttons brings them luck. Capt. Linder made the buttons an acceptable part of the working uniform and is sure that the yacht *Intrepid* won the race due to the rubbing efforts of 1,600-plus *Intrepid* men.

Independence (CVA-62)

Command of *Independence* changed hands when Captain Gerald C. O'Rourke relieved Captain Bernard B. Forbes, Jr., in ceremonies while CVA-

AC3 Marshal Bixby demonstrates SPN-42 to Lts. Riggio and Gildea prior to first automatic arrested landing on CVA-63.

62 was anchored off the coast of Malta.

While deployed in the Mediterranean, *Independence* played host to three groups of midshipmen in summer training.

When pilot Hank Kleeman and RIO Ltjg. Tom Pavlock of VF-102 landed an F-4J *Phantom II* aboard, they counted CVA-62's 135,000th arrested landing. VF-102 also won the CVW-7 Golden Tailhook Award for the second time this year — for displaying the best carrier landing proficiency.

PACIFIC FLEET

Ranger (CVA-61)

Ranger, under the command of Captain Joseph L. Coleman, observed her 14th birthday while she was operating with units of the First Fleet and three Canadian ships in a readiness and operational evaluation exercise, one of the largest in recent years. A year older, she began preparations for a sixth Western Pacific cruise.

Kitty Hawk (CVA-63)

Fresh from a nine-month overhaul in Bremerton, Wash., and several months of training, *Kitty Hawk* deployed to WestPac for the seventh time with many improvements including a habitability division, an advanced radio/television network, and IOIC and CIC systems.

Before deployment, an F-4 *Phantom* piloted by Lt. Mike Riggio of VF-213 made the first fully automatic arrested landing ever attempted on a West Coast carrier by an operational squadron. With SPN-42, automated landings are expected to become routine in months to come.

This floating airport often pumps 250,000 gallons of jet fuel a day to her planes. Now her escorts are getting a drink from the same well. The jet-powered *Beacon* (PG-99), the first patrol gunboat to be used as a plane guard, became the first to be refueled underway from an attack aircraft carrier when she received about 6,000 gallons of JP-5 jet fuel. The highly maneuverable, fast accelerating (0 to 30+ knots in 60 seconds) gunboat worked well in her escort role. She can reach a downed plane faster than a destroyer and is cheaper to operate with her 28-man crew than a destroyer with her 250. The *Beacon's* unusual power plant consists of two diesels for cruising and the same engine as is used in the F-4 *Phantom II* for rapid acceleration and high-speed cruising.

America (CVA-66)

When Norfolk-based *America* visited Manila recently, Philippine dignitaries, including President Ferdinand E. Marcos, toured the ship and observed CVW-9 air operations.

Vice Admiral Frederic A. Bardshar, Commander Attack Carrier Striking Force, presented the Air Medal to 56 Naval Aviators of CVW-9.

LCdr. Eugene Nelson and Lt. Mike Gary, VA-146, and LCdr. G. R. Goldenstein, VA-147, logged #67, 68 and 69,000 arrested landings.

"America's Angels," otherwise known as HC-2 Det. 66, sea-served ice cream recently to USS *Robison* (DDG-12) as a thank-you for her speedy pickup of the carrier's man-overboard-drill dummy, Oscar.

Atlantic City came to the Gulf of Tonkin when Miss America 1970 and a number of state pageant winners flew on board for a visit and USO show.

Midway (CVA-41)

Weeks of simulated flight operations turned into reality when *Midway* fielded nine aircraft of NATTC Patuxent River, the first planes to land on the modernized carrier in over four years. A C-1A *Tracker* was the first to touch down. The Patuxent River group flew their specially instrumented aircraft from the ship for five days, thoroughly testing CVA-41's launch and recovery equipment.

Midway, commanded by Captain Eugene J. Carroll, Jr., was undergoing refresher training and conducting carrier qualifications off San Diego.

Dwarfed by Kitty Hawk, Beacon hooks up during an underway refueling maneuver.

Carrier Controlled Approach

JOSN Larry Crutchfield

Photos by PH2 B. A. Lassiter

Rocket Marshal, Warpaint 515. One eight zero radial at 50 miles, angels 21, flight of four.

The sky is overcast, the stars obscured and the moon all but invisible as the weary pilots wing their way back to the floating airfield they call home. USS *Bon Homme Richard* (CVA-31), steaming in the Western Pacific, appears on the horizon . . . a pinpoint of light on an ocean of black.

From deep inside *Bonnie Dick* in carrier controlled approach (CCA), the marshal controller's voice, lullaby calm, comes through the head phones as he gives each pilot, in turn, approach, weather and current divert field information.

He stacks them like stairsteps, each in a pattern a thousand feet higher than the last, and a mile further away. Intently he watches over his 12 charges as they wait their turn to begin final approach.

The marshal controller assigns maximum aircraft (four each) to his three approach controllers who serve as the pilot's eyes while guiding the aircraft home.

Eyes fixed, mind alert, the controller responsible for the first four tracks the termite-sized fluorescent spot that first appears on his long-range repeater scope. Ghostly illumination from the radarscope reveals intense concentration on his young, but experienced, face.

"512, you're seven and one half miles. Center line is left; turn left two three zero.

"513, six miles. Recheck gear, hook and flaps.

"514, you're four miles. Right heading two four five; on course.

"515, approaching glide path, three miles. Begin normal rate of descent.

"512, you're going off course." He bounces his knee to keep relaxed. It's going to be a long night.

On the upper portion of the scope, a one and one-half inch glowing green line working its way along a horizontal line denotes the aircraft's intended glide path. Simultaneously, a well-fed termite traverses a course on the lower half of the scope. It represents the extended center line of the flight deck the pilot cannot see.

CCA marshal controller, AC2 Bill Williamson, intently monitors CVA-31 incoming flight.

Approach controller AC1 Sam Flynn keeps an eye on the status of his ghostly planes.

Arrows, check marks, numbers and funny little balls – current information concerning all aircraft in the recovery – are recorded on the plexiglass status board as it is relayed by the phone talker and marshal controller. Another board contains current divert field

NAVAL AVIATION

1911 1970

NEWS

Cougar Replaced by Skyhawk at VT-22

KINGSVILLE, Texas – The last student at NAS Kingsville to be qualified as a Naval Aviator in the TF-9J *Cougar* received his wings October 16 from Rear Admiral Billy D. Holder, CNAVanTra.

Replacing the *Cougar* as VT-22's trainer is the TA-4F, a two-seat version of the Douglas A-4 *Skyhawk*.

The last TF-9J at Kingsville was formally retired from active service when it was "piped over the side" while being towed between two rows of parked TA-4F "sideboys."

During the 12 years VT-22 used the *Cougar*, it qualified more than 1,600 students and logged over 300,000 flight hours in the jet.

MAG-13 Comes Home

EL TORO, Calif. – Marine Aircraft Group 13 returned to El Toro last October after four years of duty in the Republic of Vietnam.

MAG-13 went to Vietnam in September 1966, and a month later, rear elements of the group deployed from Da Nang to Chu Lai. Since that time, the group has provided continuous support in SEAsia, flying 87,027 sorties.

Blue Angels Peak Named for Navy Team

SAN DIEGO, Calif. – A previously unnamed mountain peak in the San Diego Mountain Range was named Blue Angels Peak October 21 in honor of the Navy's flight demonstration team.

The 4,549 foot mountain is located in the southwestern corner of Imperial County near El Centro, where the *Blue Angels* have practiced during the winter months for the past several years.

Vice Admiral Bernard M. Strean, CNATra, and Captain Kenneth Wallace, a former *Blue Angels* leader who served two tours with the team, were present at the dedication ceremony.

Flying Platform Under Development

WALLED LAKE, Mich. – According to a company release, the Williams Research Corporation is developing a turbine-powered flying platform that will enable a man to fly alone for 20 to 30 minutes at a speed of over 60 miles per hour with the agility of a wasp.

Designated WASP (Williams Aerial Systems Platform), the individual lift device, powered by a fanjet engine, is a new, advanced version of the jet flying belt.

The Williams Research-developed WR19 mini-jet is 12 inches in diameter, 24 inches long and weighs 67 pounds – yet it produces 430 pounds of thrust with low pollution exhaust.

It is anticipated that WASP will be available, on a limited basis, for specific applications such as law enforcement in three to five years and for the general public in possibly ten years.

Lakehurst Tests Jet Car

LAKEHURST, N. J. – A new, more powerful jet car is being tested at NATF Lakehurst for use as a propelling vehicle to attain higher speeds for programs presently scheduled on the facility's subsonic test tracks.

The new jet car is powered by four J-79 engines mounted side by side on a four-wheeled vehicle. With its 37,000-pound thrust, it will be used to push test bed vehicles to speeds in excess of 250 knots.

Several programs under way at Lakehurst require the additional thrust capability of the new jet car. A U.S. Air Force sponsored test of a BAK-13 shore-based arresting gear is one of the programs. Also scheduled are ground level ejection seat tests at speeds close to 300 knots for the Air Crew Equipment Laboratory.

25,000th Recovery is Made at MABS-11

DA NANG, Vietnam – Pilots returning to Da Nang Air Base during poor weather and emergencies have a strange machine and its crew waiting their return. The machine, manned by a crew from MABS-11, has proven its worth by recovering 25,000 aircraft since it was installed in 1966. No. 25,000 was an A-4E *Skyhawk* manned by Colonel Albert C. Pommerenk, commanding officer of MAG-11.

The machine patiently sits on the western side of the airfield, awaiting aircraft which are unable to use the entire runway due to poor visibility or battle damage. A lone sign identifies its purpose, "Marine Arrested Landing Team." Originally designed to be used in expeditionary airfields, it is a variation of the system used aboard carriers.

LPH Aids Victims of Philippine Typhoon

WESTERN PACIFIC – In late October, USS *Okinawa* played a vital role in joint typhoon disaster efforts to aid Philippine victims of Typhoon *Joan*.

Okinawa and two other amphibious ships served as support bases in the Lagonoy Gulf for Philippine Air Force and U.S. Marine helicopters ferrying food and supplies from Naga, Luzon and Virac to isolated barrio residents.

During the early morning of October 23, Marine Helicopter Squadron 164 put the first helos into the air and delivered more than 2,000 pounds of flour to the region nine miles north of the Virac supply point.

By mid-day, eight more helicopters had joined the effort and delivered more than 100,000 pounds of rice.

Chief Souders Named Instructor of Year

PENSACOLA, FLA. – MMC Robert L. Souders has been named "Instructor of the Year" at the Chief Petty Officers Academy here.

Chief Souders, the Academy's world affairs instructor for the past two years, received the annual citation from Vice Admiral Bernard M. Strean, CNATra. He cited Chief Souders' "superior quality of leadership and instructional ability."

Candidates for the award are judged on critiques submitted by students and staff members and by a review board consisting of the training officer, senior instructor and the senior military training instructor.

ASW Crews Honored

QUONSET POINT, R.I. – Crew 8 of VS-22 and Crew 10 of HS-11 have been named winners of two coveted NAS awards, the Bloodhound and Dipper Trophies, respectively.

The trophies, established in 1963, are awarded semi-annually to crews of fixed wing and rotary wing aircraft assigned to Quonset Point squadrons which are judged the most proficient in antisubmarine warfare operations.

The winning flight crew must not have been involved in crew-caused accidents, incidents or flight violations during the competition period. The crew must be current in all qualification exercises, and three of the four crew members must have operated together as a unit during the entire competition period.

Members of the winning VS-22 crew are Lts. Edward R. McGowan and Richard J. Uhrie, Jr., PO2 James F. Langston and PO3 James L. Lawrence.

HS-11's winning crew's members are Lts. Jan D. Matthews and Terry A. McGee, PO2 David P. Householder and PO3 Michael W. Miklos.

Fire-fighting Helos

NAS ALAMEDA, Calif. – While 80 percent of the normal fire-fighting force was spread out to fight the holocaust in southern California, the Navy participated in a fire-fighting "first." Navy and Marine Corps helicopters from active and reserve units at Alameda and Monterey lifted groups of six to seven fire fighters into fire infested areas of northern California. The aircraft were used as initial attack vehicles to get into areas inaccessible from the ground or before heavy ground equipment was available.

The Division of Forestry praised the Navy for delivering a decisive blow in containing the raging fires.

Good Blues' News

PENSACOLA, Fla. – The Navy's Flight Demonstration Team, the *Blue Angels*, is looking for outstanding pilots who want equally outstanding duty.

The team has billets for ten officers: seven pilots, one NFO, one maintenance officer and one Wave. Each year there are two or three openings due to normal rotation.

Four of the pilots fly in the diamond formation, while two pilots fly solo; the seventh pilot narrates the demonstrations and provides news media orientation flights. The NFO serves as team public affairs officer while the maintenance officer is in charge of the *Blues*' 100-man maintenance crew. The Wave is the administrative assistant and assistant public affairs officer.

To qualify as a *Blue Angel*, an applicant should be in the first year of his shore duty tour or expecting to rotate to shore duty soon. He should be a regular Navy or Marine Corps officer, between the ages of 26 and 36, who has many hours of flight time to his credit, preferably in carrier-based jets. The normal tour of duty is from two to three years.

To submit an application or for more information write to: Officer in Charge, U.S. Navy Flight Demonstration Team, Chief of Naval Air Training, NAS Pensacola, Fla. 32508.

Naval Aviation Films

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

M8-9408A (unclassified) *Ground Handling of Aircraft – Part I*. Play-it-safe principles of towing, various towing vehicles and towbars and cockpit precautions (20 minutes).

MN-10347 (unclassified) *Aircraft Corrosion – A Readiness Problem*. The importance of aircraft corrosion control and general techniques (26 minutes).

MN-10371D (unclassified) *A-7 Familiarization – Conventional Weapons Delivery*. Procedures for delivering ordnance on target when radar is inoperable. Techniques for figuring offset aim point and correct wind drift (21 minutes).

MN-10677 (unclassified) *All-Weather Instrument Flight Techniques – High Performance of Jet Aircraft*. Fundamentals of attitude flying and use of the attitude indicator in night or all-weather environments. The significance of flight instrument indicators in relation to flight maneuvers. Pilot techniques for performing GCA/CCA final approach (18 minutes).

MN-10761E (unclassified) *T-34 Familiarization – Acrobatics*. How to perform basic acrobatic maneuvers in the T-34 trainer (19 minutes).

MN-10761F (unclassified) *T-34 Familiarization – High and Low Altitude Emergencies*. How to make a safe landing in the T-34 during an emergency (10 minutes).

MN-10761G (unclassified) *T-34 Familiarization – Crosswind Landings*. Procedures for making a crosswind landing in the T-34 aircraft (7 minutes).

MN-10761H (unclassified) *T-34 Familiarization – Emergency Landing Practice*. Procedures for practicing emergency landings in the T-34 trainer (5 minutes).

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

Covered Wagon Days

By Rear Admiral J. R. Tate, USN (Ret.)

When I reported to USS *Langley* as a member of her prospective crew, she was starboard side to, on the waterfront at the Navy Yard in Portsmouth, Va., undergoing conversion from the collier *Jupiter* to something to be called an airplane carrier – her flight deck was completed, but she was to remain in that berth undergoing completion for another six months as she had about the lowest priority in the yard. The transport *Henderson* needed a new generator, so they took it off the *Langley* and installed it on the *Henderson* to meet her sailing date. Incidentally, the cost of the removal and installation was charged, several months later, to *Langley*.

The acting C.O. was Commander Kenneth Whiting who was also the prospective exec. LCdr. Godfrey deC. Chevalier was the flight officer. These two were really the parents of carrier aviation.

Whiting was a man of great vision, an ex-submariner who, as skipper of one of the early subs, proved that a sunken sub's crew could be saved – except for the skipper who would stay to fire the tube – by crawling into the torpedo tube of his own sub on the bottom of Manila Bay and having himself fired out. When the sub surfaced, he climbed aboard and said, "It's easy."

He was one of the first to come into the infant aviation branch. He and Chevalier, also one of the early aviators (#7), were very interested in the possibilities of carriers, and "Chevvy" had been aboard all the British carriers. The Navy at that time was interested mostly in patrol boats of the F-5L type for scouting, and seaplanes for spotting gunfire for the battleships. There was some slight interest in torpedo planes.

Whiting wanted to get the *Great Northern* or *Northern Pacific* for the conversion. They were 25-knot passenger liners taken over as transports during WW I. According to Whiting, T. T. "Terrible Tom" Craven (the non-aviator director of aviation) and the General Board, who at that time decided on the Navy's ship requirements, decided to convert the collier *Jupiter*, the Navy's only electric drive ship. A great deal of the design was an on-the-spot adaption.

They poured concrete in the coal holds to ballast her to the desired draft. Rumor had it that some of the 16" guns from the unfinished battle cruisers *Lex* and *Sara* were cut up and added to the concrete for weight. Sailors used to claim the *Langley* carried the biggest guns in the fleet.

At first the starboard stack was merely a gigantic hole in the side of the ship right under the flight deck, and the port stack folded down fore and aft. The starboard stack had a water spray in it to cool the exhaust gasses, and there was a complicated arrangement of dampers by which the gasses were shifted to one or the other stack. This

was later changed to two stacks on the port side, both folding down outboard. (The starboard stack was eliminated.)

There were two pole masts in wells that could be run up and down to clear the flight deck.

The bridge was the original collier bridge, and the flight deck was built over it. Visibility was poor, to say the least.

There was one elevator amidships. When it was in the down position, it was eight feet above the coal-hold hatches, which were the hangar deck. I remember one special, timed drill during which we got a plane off the elevator in 12 minutes!

Flight officers' country was a wooden structure built under the flight deck and over the wardroom, sort of a temporary set up that reminded me of the temporary WW I Main Navy building.

Two of the first job orders I was assigned to follow up on were for 18 window screens and two doors for this area, at $1,800, and for a pigeon house to be built on the fantail, for $35,000.

This latter structure was needed to house the homing pigeons carried by the planes. It was later redone and made into the exec's quarters. The pigeon loft was finally finished, and we got a pigeon quartermaster and an assignment of pigeons whose training he immediately started. Twice daily we had a cloud of birds circling the stern, and the quartermaster had them returning from releases as far as a hundred miles.

One day we turned the ship end for end to have her portside to the dock, and when the quartermaster released the birds that p.m. prior to feeding, they all immediately started to circle the bow! Thus, our training tribulations began. They were, however, a nice source of squab on toast for the wardroom.

A Mark I air catapult for launching seaplanes was on the bow end of the flight deck. A traveling crane was rigged under the flight deck structure to move planes in the hangar deck. The hangar deck was the hatch covers of the cargo holds, and when the elevator was down, it was a barrier to the crane, which was the only means of moving the aircraft fore and aft. There was also a crane to hoist seaplanes off and on the hangar deck. The arresting gear weights, square cast iron slugs connected at each corner by pendants about two feet long, were housed in one of the flight deck tower supports.

Jupiter, a 1913 vintage coal carrier which delivered the first Naval Aviators to France in 1917, entered the Norfolk Navy Yard in March 1920 to be converted to the Navy's first airplane carrier. This view, May 1921, shows flight deck supports rising above the ship's bridge.

Captain T. T. Craven, above left, headed Navy's aviation branch when the decision was made to convert Jupiter. Commander Kenneth Whiting, above right, was acting C.O. during Langley's conversion, executive officer after commissioning. Below, Langley sailors prepare to move VE-7 from elevator to hangar deck. Hoist used hangs from the overhead.

Covered Wagon Days

Langley aircraft are lined up at NAS Hampton Roads (later NAS Norfolk). Aircraft include three Aeromarine 39B's, two TS-1's and VE-7's.

Lt. A. M. Pride lands an Aeromarine on dummy flight deck at Norfolk, while testing arresting gear for USS Langley.

Our plane detachment was stationed at NAS Norfolk 25 miles away – two trolley car rides, with a ferry ride in between. Bos'n Dan Daily was in charge of this brood of birds consisting of six Aeromarine 39B's, four Vought VE-7's, four Morane-Saulnier parasols with LeRhone rotary engines, two DH-4B *Liberty* engine jobs, and a Parnall *Panther* with a fuselage that folded for compact storage. Later we got three DT-2 torpedo planes. We had a PTP seaplane and, from time to time, for special tests, things like the Gallaudet with the propeller on a ring that ran around the fuselage, and the submarine planes XS-1 and MS-1. We were later assigned, after we started operations, four TS-1 fighters. A turntable was set up in one corner of the field with an arresting gear, consisting of a tripod, blocks, etc., and a set of old 12-inch shells as weights alongside it. Lt. Alfred M. "Mel" Pride was in charge of this gear and did most of the testing of the various ideas. He had a DH-4B with the fabric removed from the lower wing. It would not fly, but it could ground hop like a bat-out-of-hell. Some of the ideas submitted were fantastic, and a great many were tested: such as axle hooks and converging fore and aft wires – fore and aft wires with marlin Turk's-heads tied on the wire every yard. I remember a picture of this when Mel hit it at medium speed – what a mess! Someone even had the idea of electromagnets in the deck and steel plates on the airplane. For each landing, the *Langley* would have to shut down the main engine to supply enough current to the magnet!

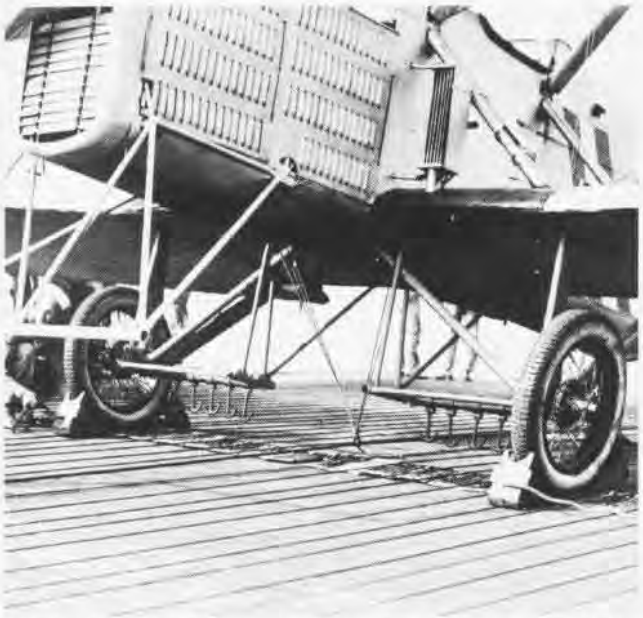
The gear decided on was fore and aft wires running down the deck about a foot apart and held ten inches high by five rows of notched boards called fiddle bridges. These engaged axle hooks on the plane, holding it down to the deck. Then there were five rows of cross-deck wires to engage a trailing hook which would lift weights through a block and tackle. These were held up by wooden boards cut like a piece of pie with a notch in the apex.

To hold the weights suspended; there was a wire brake at the end of the run – a device held open by a long handle which the operator released when the plane's run was completed. This was pulled shut and gripped the wire and held it until the plane was disengaged. The operator then pulled back on the lever releasing the wire and allowing the weights to crash down and reset the cross-deck wires.

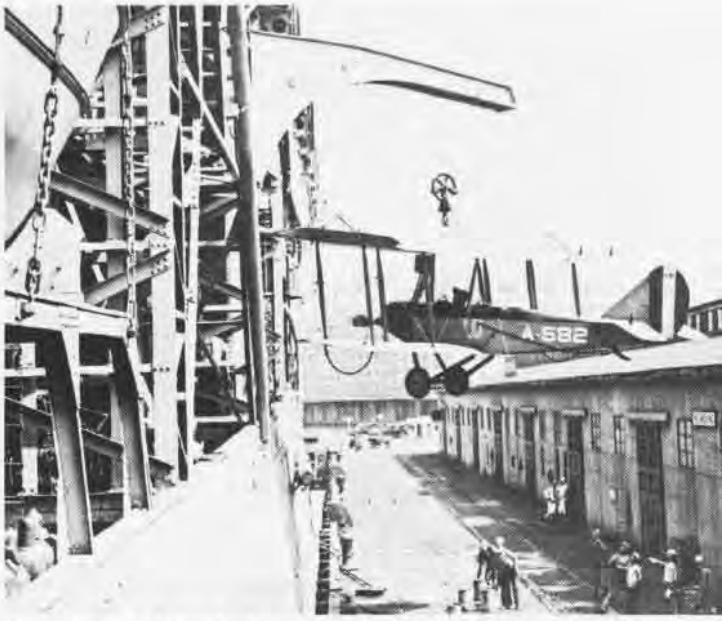
This was subject to all sorts of queer failures. If the lever was released too soon, the plane received the "stone wall" effect: when the long bar was released, the rubber bungees pulled it short with terrific force. It hit one man and knocked off his whole lower jaw. At first the fiddle bridges were individual boards and there must have been about 500 of them. Later they were made of corrugated metal and each row was attached to a rod on deck, allowing each row to be raised as a whole. The pies were also anchored by a steel pendant.

After a landing, it sometimes took over an hour to reset the gear. A great deal of development of the plane's gear was accomplished by naval constructor Lt. F. W. Pennoyer. Here again, some of the ideas tried were fantastic. The first one was a boat grapnel and chain attached to the plane. The gear was dropped by the mech from the back seat but the resulting bounce of the grapnel when it hit the deck discouraged that project. Twin hooks attached to the aft end of each landing gear strut was another idea (one-hook catches were disastrous). Finally, wires were attached on the aft end of the engine mounts, outside the fuselage, brought back on each side, joined together about under the pilot, and carried aft to just forward of the skag where the tail hook was attached. At first, this was a hook with a large iron ball about the size of a baseball (to protect the deck). When this contraption hit the deck and bounced up, the shock made the installation of a hook bumper immediately necessary. A bungee hold-down was also installed.

It was planned to use an Aeromarine 39B in the first few thousand landings. It might be worthwhile to describe this



Axle hooks on DT-2 were part of arresting equipment on early aircraft. Corrugated metal fiddle bridges extend under the plane's tires.



Aeromarine is hoisted aboard Langley for flight tests. Note the tail hook attachment cable running forward on side of aircraft.

aircraft: It was built originally as a single-float trainer but it was never used as such. The floats were replaced by wheels and tail skag. It was a two-seat biplane with a Curtiss 100-hp. OXX motor. The motor turned a real paddle at 1,250 rpm's – tuned up and hot, sometimes 1,300!! It has DEP (Deperdussin wheel) controls and was flown from the back seat with the pilot sitting on the 12-gallon tank. A stick with notches cut in it for the gas gauge hung on the longeron. You removed the filler cap at the corner of the seat – inserted the stick, and, lo, you determined you still had a quarter of a tank of gas left! The gas pump was under the engine section in the slipstream. The radiator was up on the top wing, convenient to the pilot who could stand up in the rear seat and hang his jacket over it to warm it up. The whole machine, ready to fly, weighed something over 2,000 pounds; the wing loading was just over four pounds per square foot. Top speed was listed as 70 mph and landing speed at 40. For carrier landings, the pilot sat on four cushions (there were no parachutes in those days). Daily, the pilots engaged in what was listed in the log books as "precision landings." A four by sixty-foot piece of cloth, representing one wire, was staked out on the field, and the mechanic in attendance recorded his estimate of how near, in feet, the landing was to the wire.

Haviland, who was a member of the Lafayette Escadrille, was an original member of the *Langley* detail, so the aviation detail, and later the ship, adopted the diagonal red, white and blue colors which had been used by the escadrille. All planes were painted with these stripes on the fuselage. My favorite plane in this group was [a 39B] Navy serial [A] #606, laughingly called "Old Salversan" by the crew and in it I made my first landing on a carrier.

The Morane-Saulnier parasol was a monoplane with a high wing braced by wires. It had a rotary engine: the engine spun and the crankshaft stood still – gas was fed to the engine through the crankcase and therefore there was no throttle. It had only two speeds – wide open and stop. On top of the stick in both seats was a red button called the "coupe button" which was used to control engine speeds for taxiing and landing. This button shut off the ignition when it was pressed down. One day, Lt. Blackie Rhodes, with a passenger along, was making practice landings over the field bulkhead. He pushed down on the coupe button and started his glide. He was a little short, so let up on the button – nothing happened and into the bay he went. During the investigation of *why*, the passenger said, "I saw that little button on the stick jumping up and down, and so I put my hand on it to keep it from jumping!"

Morane-Saulier, above, and MS-1, below, were among the planes Langley pilots tested.

Captain S. H. R. Doyle

LCdr. Virgil C. Griffin

LCdr. Godfrey deC. Chevalier

The ship was far from finished when she was commissioned on March 20, 1922. Captain S. H. R. "Stiffy" Doyle became her first C.O. Ken Whiting, her first exec, officiated at the ceremony.

At a conference before the ceremony, Whiting told LCdr. H. V. McCabe, the navigator, "When I pass the word, arrange to set the colors and jack, and break the commissioning pennant." McCabe asked, "Where will I set the commissioning pennant?" Whiting replied, "On the main mast, of course." McCabe told him that both were down and the motors to raise them had not been installed. He was told to fix it up somehow.

At the ceremony on the flight deck, the commandant of the yard turned the ship over. Whiting read his orders, turned to the navigator and said, "Break out the colors and set the watches." McCabe repeated the order, and a chief quartermaster and an assistant appeared from the bridge under the flight deck with a commissioning pennant nailed on the end of a swab handle. The assistant held it while the chief nailed it to the side of the flight deck!!!

Later, we all gathered around it as it drooped from the slightly askew swab handle, and Chevalier remarked to Whiting, "That is about the most non-reg commissioning I have ever seen." Whiting replied, "She is a *carrier*, and someday this ceremony will be repeated, and be the biggest happening in the Navy." I wish Ken could be here to see the *Nimitz* commissioned. There will be no swab handle there.

Finally the ship was completed, a dead load was fired from the catapult with a great splash, and we stood down the Elizabeth River and toward new horizons.

After sea trials in Chesapeake Bay, we went to an anchorage in the York River, just above the dock at the mine depot where an airfield was established for the planes. Five anchors were laid in a circle about the ship and, after the ship was headed into the wind with a stern line to the appropriate anchor, all pilots practiced simulated landings. These consisted of approaches just up to the stern and then gunning it and going around. Mel Pride, who was always recognized as the only pilot to wear a student hard helmet (everybody else wore soft ones), was the first pilot to really touch down on deck: one day he came on in and touched his wheels on deck before applying power and going around. Whiting gave him hell for this dangerous procedure.

It was decided that a steel net was needed to catch any planes falling short, so the navy yard manufactured and installed it, with outriggers at the bottom. Then came the test of the catapult. The PTP (patrol torpedo), a twin-float seaplane, sat on a wooden carriage with coaster wheels. The plane was locked on the carriage by an ingenious set of hooks which were released by a trigger sticking down from the carriage. This trigger was actuated for each float by a piece of angle iron sticking up on deck about eight inches. The carriage was set up on deck over the catapult and attached to the catapult traveler. After the breaking strip was installed, Whiting climbed in and turned the *Liberty* engine up to its full 400 horses and gave the signal to fire. The plane and carriage rattled down the deck on the iron casters, and just before the plane reached the release point, the carriage and plane were airborne, too high for the trigger on the starboard pontoon to be actuated. The carriage hit the brakes and stopped. So did the starboard pontoon (which was still hooked to it). The plane, port pontoon and Whiting continued at a dangerous angle, but Whiting finally gained control. After flying around and circling the ship while all hands pointed at the missing pontoon, Whiting coolly landed on one pontoon and, as the plane capsized, stepped aboard the rescue boat and returned with it as it towed the wreck under the crane to be hoisted aboard.

We finally completed the Yorktown training period and headed out into Chesapeake Bay for the big events. The first event was the takeoff. We were operating just north of the Tongue of the Shoe, seaward of the main channel from Norfolk. A trough about six feet long, set up on sawhorses, was rigged at the aft end of the flight deck. When the tail skag of the VE-7 (Vought Experimental Mod 7) used in the test was placed in the trough, she was in the flight attitude. We had no brakes, so the plane was held down on deck by a wire with a bomb release at the end. This was attached to a ring on the landing gear. "Squash" Griffin (LCdr. V. C. Griffin) climbed in, turned up the Hispano-Suiza engine to its full 180

Smoke generated on Langley's flight deck is studied to determine air currents across the deck while underway at Hampton Roads in October 1922. Note the single port stack.

Ltjg. Chevalier makes first landing on Langley in an Aeromarine. October 26, 1922.

horses and gave the go signal. The bomb release was snapped and the Vought rolled down the deck and, almost before it reached the elevator, was airborne. Thus, the first takeoff from a U.S. carrier.

Several weeks later, at almost the same spot, Chevalier rendezvoused with the ship in an Aeromarine 39B. The ship headed into the northeast breeze as he flew over the stern and watched the final preparations. Finally, the red flag at the port quarter was replaced by a white flag. He started his approach, came in very nicely and then hit the gear. Pies and fiddle bridges flew in all directions and, at the end of the run, the plane nosed down and damaged the prop. Everyone gathered around as Chevvy climbed down to receive our congratulations. That night, the celebration at the Norfolk Yacht and Country Club was an event. Thus, in October, the first landing.

We then returned to the navy yard for installation of Pennoyer's new modification of the arresting gear – slotted boiler plates in #3 hold as weights, improved fiddle bridges and pies, shielded deck sheaves, new stacks, etc.

After the yard period, to escape the inclement weather of the Chesapeake Bay, *Langley* proceeded to Pensacola, dropped her circle of wind-hauling anchors, and got down to the serious business of building up experience in the art of carrier operations. Now, pilots Harold Brow and Bob Wooster joined the ship. (Prior to this, Chevalier was killed in an unfortunate accident ashore in Norfolk and Bill Fechtler had been killed in Detroit preparing for the Pulitzer Races.)

While on a public relations tour of the East Coast, Captain Doyle made some speeches which showed his ignorance of the aims of carrier aviation. Whiting, with his eye to the future, went to Washington and used his influence with a few politicians and got a law passed that all ships directly connected with aviation would be commanded by aviators. At the time, this meant the *Langley*, a converted collier; the *Wright*, an ex-Hog Island merchantman converted first to carry kite balloons, then as a seaplane tender; and the *Aroostook*, a converted Long Island passenger boat, also a seaplane tender. The latter was nicknamed "Beno," from the frequency of the word that was passed: "There will be no . . . liberty, etc." The general Navy couldn't care less, but Whiting's eyes were on the future.

With the advent of summer, the ship returned to Norfolk and proceeded with the operations of service type fighters, the VE-7SF Vought and the Curtiss TS-1 – the first plane to use the new air cooled, static-radial Lawrence (later Wright) engine. The new Vought Scout, the UO-1, came along about this time.

We were still using the cumbersome outside iron straps attached to the aft end of the engine bearers for the arresting hook. Because of the flatter gliding angle of the modern fighters, the pilot was required to use extra cushions to see the deck.

PTP secured to launch carriage sits on deck. The aircraft was composite of WW I parts.

Aeromarine makes Langley's fourth landing. Ship's unique starboard stack is visible.

Covered Wagon Days

Top, Langley with fleet at Culebra, C.Z. Below, with ship at pier, LSO waves in VE-7.

We returned to Pensacola and then went on to Panama to engage in the first annual fleet problem.

Langley went to Chiriqui Lagoon, a banana port north of Panama, prior to the fleet exercise and launched two of our three new DT-2 Douglas torpedo seaplanes on a mission to fly across the Isthmus of Panama, intercept the battle fleet coming south, and bomb and photograph the incoming fleet. Wooster and I flew the mission.

We were told the mountains were less than 4,000 feet. There was a heavy cloud cover as we headed up a valley, which soon narrowed down with the mountains going up into the clouds on both sides.

Bob Wooster, leader and pilot of the first plane, was flying about a quarter of a mile ahead. The valley continued to narrow until I decided to get out. I made a flipper turn and my pontoons grazed the trees as I reversed direction, flew back to the lagoon, found a hole, and laboriously climbed up to 11,000 feet. I came out on top of the cloud cover and proceeded across the Isthmus. As I crossed the mountains at 11,000 feet, I saw a peak sticking up out of the clouds and identified it as Serra Hornita. I intercepted the Pacific Fleet, the photographer took his pictures, and we returned to the ship anchored in the lagoon. After landing and being hoisted aboard, we waited impatiently for Wooster's return. I said I thought he was down in the jungle somewhere up the valley where I had turned, and we immediately started to organize a rescue expedition. (Both planes carried pigeons but no pigeons returned.) An hour or two before dusk, the rescue mission, equipped with everything we could think of – machetes, coils of line, small arms of all sorts, a box of sandwiches, the ship's cook – set out. The "piece de resistance," however, was a portable radio and a portable mast carried by eight men!!

A guide was obtained in the village of Chiriqui and the expedition proceeded up the valley where Wooster was last seen. The next day, with sandwiches gone, the portable radio was erected and our progress reported to the ship. It took four men, turning the big wheels on the generator, to get off the first message – "Send food. Monkey and parrot inedible."

Two days later, the expedition returned with no knowledge of Wooster's fate but very junglewise and exhausted. Ten days later Wooster and his photographer walked into a native village on the Pacific coast. Bob said he had run out of valley and didn't have room to turn; so, with the jungle only feet below his pontoons, he cut the gun and landed practically in the top of the pass. Their walk out is another story, and the only item pertinent here is that they released four pigeons and ate four. And before you ask the question – we had no IFR and, in those days, instrument flying was an unknown word.

Langley was not a part of the fleet problem, but to exercise her planes, she proceeded to attack the Atlantic Fleet. We had not yet landed bombers, so the Douglas DT-2's on floats were dumped off at Porto Bello, tended by a 40-foot motor sailer with drums of gas. We were short of pilots with Wooster missing and so Pennoyer, though not a line officer, was dele-

gated – with me, the junior aviator on the ship – to make two torpedo attacks on the fleet at anchor in Colon Harbor while *Langley* strafed with the TS and VE-7's from "clear out of sight" (about 30 miles out in the Caribbean). At the problem critique, later, our alleged torpedo attacks were dismissed with the remark that "everyone knows it is impossible to drop torpedoes in a shallow anchorage." The *Langley's* strafing attacks, with not an AA gun manned, brought forth some acid remarks about aviators cutting capers dangerously close to the ships – at 1,000 feet!

We went back to Pensacola and more endless landings.

At first, the chief photographer, Murtha, made movies of *each* landing both in normal and in slow motion. It became a drain to buy film from our limited operating allotment, so he was told to photograph only those landings that looked like potential trouble.

I was coming in for a landing one day and, though I felt pretty good about it, when I looked down and saw Murtha start to crank his camera, I took a voluntary turn away and came around again. When asked why, I could only answer, "Murtha brags that he has never missed a crash, and I thought I did not want to mar his record."

Up until this time, every pilot was on his own during the approach and landing, but Whiting used to stand on the port quarter watching landings and mentally bringing in each plane himself and unconsciously making motions with his hands. "He's too low," or "OK, now" or "He's too high." After a series of landings one day, Pride remarked to Whiting, "On that last landing I wasn't too low. I caught the second wire." Whiting was surprised to learn he had been noticed, and that the pilots were watching him. Thus, the idea for a landing signalman was born. Whiting told me to go get a pair of semaphore flags, and he stood behind me, coaching "He's too low," etc. Several years later, someone finally realized that the signals were meant to advise rather than order, but too many pilots had been trained. (The British who also used the landing signalman, set their meanings as "go up" and "come down". They put the signalman amidships instead of on the port quarter. In WW II, their carriers, that occasionally had to take aboard a *Seafire*, found the situation a lively affair.)

The major casualty in those days was to snatch a fore and aft wire. With any slight shift, the tail hook would slide along the top of a fore and aft wire and miss the cross-deck wire. We were unable to stop this until about 1928 when the fore and aft wires on the *Lex* and *Sara* were eliminated.

We finally completed the experimental work and proceeded to the West Coast and San Diego for more advanced work with the fleet and aircraft squadrons. We had a tight squeeze into San Diego harbor which, at that time, was one vast mud flat.

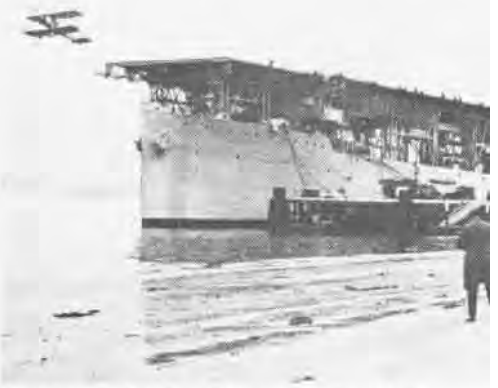
Fortunately, the dock at North Island, with *Langley* portside to, was into the prevailing wind, and we could hold landing practice daily. The first night landings were made here – all pilots complained that the station lights confused them.

The gear, both on the ship and in the planes, was being improved but not without some casualties. The TS-2 was equipped with a main tank which the pilot could drop in case of fire. While making "hit and go" passes, a pilot dropped on deck a bit hard, and the main tank fell on the deck. He made almost a half turn of the bay before he splashed down off the San Diego waterfront.

The Navy had acquired a new training plane [the Boeing NB-1] which was subject to auto-rotation [unrecoverable spins]. The *Langley* had some and, after several had spun-in with students, two boards were set up to investigate the cause, one in Anacostia and the other on the *Langley*.

Word soon came that Al Williams had spun-in in the Potomac. We sent him a telegram. "Have you ever tried putting the stick forward and kicking the rudder against the spin?" We signed it, "The *Langley* Pilots." Several days later, while we were testing the plane for this mysterious spin characteristic, Harold Brow splashed into San Diego Bay. We soon received a telegram from Anacostia, "Yes, did you?" It was signed "Williams."

We had been at individual landings for two years and had developed the gear and technique, and were due now for squadron work. VF-2 was to be assigned. I immediately finagled a set of orders to the squadron.



Langley, tied to San Diego dock, launches TS-1 while conducting tests on West Coast.

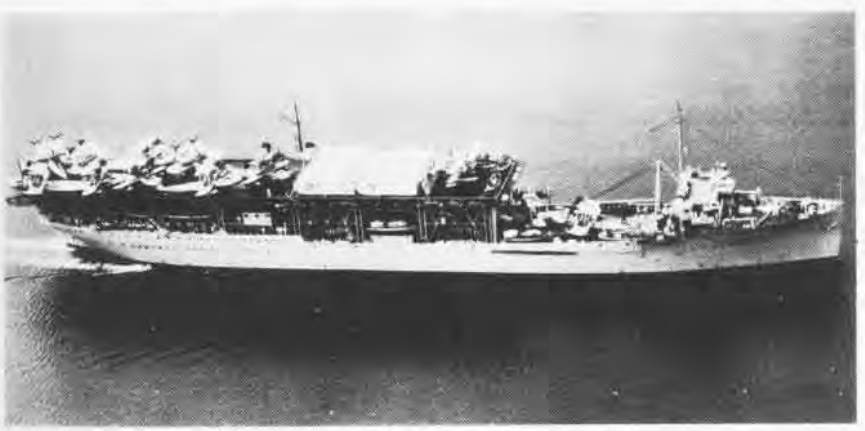
Camera crew provided record of flight operations, from exposed catwalk position.

DT-2's formed part of Langley's aircraft complement during a fleet exercise in 1924.

Lt. J. R. Tate on wing of DT-2 at Pearl Harbor during parachute tests made by VF-2.

F6C Hawk, carrying Langley's distinctive stripes, warms up prior to in-port takeoff.

FB-1, left, and F6C-3 of VF-2 exhibit similar appearance on San Diego flight line.



Langley, her bobtailed flight deck loaded with VP-1 and VP-18 aircraft, at sea in 1938.

The Navy at that time had two fighter squadrons, both stationed at North Island, and there was terrific rivalry between them. VF-1 was equipped with TS-2's which were designed with interchangeable twin floats or wheels. They were also stressed for catapulting and assigned to battleships. VF-2 was assigned the Vought VE-7SF, a land plane. (See pages 20 and 21.) The Vought single seater fighter was really a two seater with a cowl over the front seat. It had two 30 cal. guns mounted on top of the cowling and was activated by a 180-hp. Hispano-Suiza water-cooled engine. It was a beautiful plane to fly.

VF-1 at that time was using an insignia of a striking eagle with talons out. On the eve of our first fleet cruise to Panama, the TS's were put on floats ready to report to their various battleships. The crew of VF-2 slipped into the hangar at night and painted gigantic rubber boots on each bird, over his talons.

The 12 VF-2 planes were equipped with the necessary tail and axle hooks, and we were ready to go. Squadron pilots qualified individually alongside the dock with ten landings each. We then proceeded to sea and landed on board, as a squadron, in something over an hour.

The Navy had its first carrier squadron aboard the *Langley*. It went with the fleet and delivered, in that problem, the first attack by air on Ford Island! The fleet went on to Australia, but *Langley*, due to the confidential nature of her employment, was kept at Hawaii, spending most of her time at the anchorage at Lahaina, Maui, or at Pearl Harbor with VF-2 based ashore in tents. Up to this time, we had operated without a barrier of any sort to protect parked planes. Coming in for a landing one day, Lt. Dorris Gurley overrode the gear and crashed into the planes parked forward, wrecking practically the whole squadron. Captain C. S. Jackson (Edward the Bald), who had relieved "Stiffy" Doyle, said we ought to have something to stop things like that and ordered the Bos'n to get a length of 10" manila mooring line and rig it with three sawhorses across the forward end of the flight deck. Thus was born the first barrier.

Another problem now appeared. The squadron was issued parachutes and directed to use them. Only six chutes were issued for 12 planes, so we alter-

nated between the two divisions – one week you wore chutes; the next, the other division got them. The seats were not designed for them, and it was very difficult to get the cushions under them for carrier landings. They were uncomfortable and very suspect after the squadron skipper, LCdr. Nathan "Nat" Chase, was killed in an air collision during gunnery while wearing a chute that never opened. Tate, a chute proponent, asked and received permission to jump one for test. We borrowed the station DT-2 and Lt. Freddy Harper got some action pictures of one of the Navy's early parachute jumps. A few months later we got enough chutes to accommodate the whole squadron.

On the return to San Diego, *Langley* received a "well done" from the flagship for landing a whole squadron (12 planes) in less than an hour!

Five years passed and carrier aviation was growing up. Thousands of landings had been made and we had taken six reels of crashes. Whiting and most of the senior officers were prospective crews for the new battle cruisers converted to carriers under the Washington Naval Treaty. *Langley* carried on proudly as CV-1 on the next fleet problem in the Caribbean and the Virgin Islands. VF-2 was an experienced squadron. *Langley* did scouting with her UO-1 Vought scouts. LCdr. Charlie Mason even came back from a scouting mission with only eight of the nine cylinders on his new air-cooled Wright *Whirlwind* and made a perfect emergency landing.

On the return to North Island, *Fighting Two* received the first of the modern fighters, part FB-1's and part FC's. These were fast (165 miles per hour) and could dive straight down without the leading edge of the wing collapsing. They had the new 425-hp. Curtiss D-12 engine and metal props, and they were stressed and designed for carrier landing. Even the guns were under the cowling. LCdr. F. W. "Spig" Wead was the skipper of the squadron at that time and, though the main mission was to prepare them immediately for carrier landings, he was impressed by the fact that they could dive to terminal [velocity] with the metal leading edges of their wings. He discussed it with the pilots: "We should be able to dive straight down on a target and open up with our machine guns and when we see hits, if we had a small bomb and released it, it should hit where the bullets go." He directed Lieutenant F. W. Buse and me to fit one plane with a miniature bomb rack and try some simultaneous gun and bomb runs on some of the marker frameworks in the lower bay. The plane was rigged, and we began to report on the results. Soon he had the whole squadron doing it, and we discovered that downwind bombing was best and that lag was important – and the terms "roll-over" and "push-over" entry were born. This was the real origin of dive bombing, the brainchild of Spig Wead.

We were elated with the seats in the new fighters. They were adjustable up and down (goodbye to all those extra cushions for landing), and were dished to accommodate the parachute seat pack!! The wheel oleos that replaced the old bungee shock cord were also marvelous. Progress! But the tail skag remained and would not be replaced by the tail wheel for several years. We were worried, however, at the nose-high gliding angle and worried about carrier visibility on approach.

Orders suddenly arrived for transfer to Coco Solo, Panama. Devastation and despair! A carrier fighter pilot sent ashore to fly "big boats," the F-5L and H-16.

I did not see *Langley* again until five years later in Norfolk while attached to the Experimental Division. There, my old friend, Mel Pride, was in charge, and Captain Kenneth Whiting was the station C.O. *Langley* had received the new hydraulic arresting gear developed by the experimental division, mostly a product of Pride's brain. I went out in a Vought O2U-1 and made a series of landings. What a pipsqueak deck after the majestic *Lex* and *Sara*. Pride, at about this time, made the first landing with an autogyro. I saw *Langley* for the last time several years later in San Diego. With her bobtailed flight deck, she was no longer CV-1, the first aircraft carrier, but a mere seaplane tender. I circled her, filled with an intense nostalgia for the grand old gal who was the Navy's "Covered Wagon."

Rear Admiral Jackson Rogers Tate's 32 years of naval service include participation in the initial development of the Navy's first aircraft carrier through command of WW II carriers in the Pacific. During his career, he served in or commanded various squadrons, aviation ships and air stations. Among these were VF-2 (1925-26), VT-3 (1929), VF-1B on *Saratoga* (1930-31) and VF-5 on *Ranger* (1935-36). He was commanding officer of VT-3 and VF-5. A shore tour at NAS Norfolk (1931-33) was spent developing arresting gear for carriers and in testing aircraft for carrier use. In addition to serving on *Langley* (1920-25), he served as senior aviator aboard *Mississippi* (1933-35) and air officer and air group commander on *Yorktown* (1938-40). In 1942, after assisting in fitting out Core (CVE-13) and *Altamaha* (CVE-18), he took command of the latter and proceeded to the South Pacific in time to join the Guadalcanal campaign. After duty as air support officer for the Second Marine Division at the Torawa invasion and later as the atoll commander, he commanded *Randolph* (CV-15) in the final carrier-based raids on Japan. RAdm. Tate retired in March 1949, having earned four awards of the Legion of Merit for his outstanding performance.

Ltjg. Jackson R. Tate

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Letters

Great Balls O' Fire!

Here I preach safety from dawn 'til dusk, write embarrassin' stories about pilot goofs, and do my darndest to keep as many people alive 'n kicking as humanly possible, and you go and print a picture like the one on page 16 of the September 1970 issue showing such a poor example of flight deck procedures as to make me cry. There must be some 35 men out there on that deck who should be well under cover while the helo is near the platform.

We've just got to get busy and get the NATOPS manual on *Vertrep/Helo Ops on Non-Aviation Ships* out to the fleet. Keep 'em flyin', 'n alive.

Grampaw Pettibone

Wanted

I am beginning research into the relationship between Grumman and Columbia Aircraft of Valley Stream, L.I. They built 330 *Ducks* or J2F-6's, but little is known about the company.

The second project is equally interesting. In early 1943, Grumman and Edo completed installation of a set of floats on an

AN F4F WILDCAT WITH PONTOONS

F4F-3 *Wildcat*, the aircraft then known as the "Wildcatfish."

Any suggestions or leads will be appreciated. In the meantime keep up the good work. *NANews* gets better with each issue!

Kurt H. Miska
Aero Affairs Associates
749 Preston Road
East Meadow, N.Y. 11554

Purple Foxes?

We are currently in the process of retracing the history of the *Purple Foxes* of HMM-364, now with MAG-16 at Marble Mountain Air Facility, RVN.

Of specific interest to us is the *Purple Fox* insignia, when it came into being and what it denoted. We would appreciate hearing from any of your readers with any other information and any other insignias used by the squadron from the time of its commissioning in 1961.

We would also like to encourage any of your readers who served with 364 and who have information of historical interest to correspond with us and share their experiences.

John N. Staples III, 1st Lt.
Historical Officer, HMM-364
FPO San Francisco, Calif. 96602

Museum

Next year I will be opening a WW II aviation museum and I am having a great deal of difficulty obtaining items of clothing and/or equipment used by the U.S. Navy during that period.

Can anyone help me find uniforms, equipment, badges, flying clothing and anything used by Naval Aviation that might be of interest.

Would I be pressing my luck to ask you for an old copy of *Naval Aviation News* to be kept in my museum file, and may I add that I am, of course, willing to pay for any items that I am lucky enough to obtain.

R. Callow
104 Kirkham Street
Plumstead, London S.E. 18
England

Pen Pal

I have a great interest in aviation and have subscribed to *Naval Aviation News*. I would like to correspond with others who have the same interest. I am physically handicapped, but will answer each letter as soon as possible.

I am also collecting glossy photos of the antique and new aircraft of the world.

Norio Saito
Tiyoda 4 Chome 5-8
Takaisi-Shi
Osaka – F. 592
Japan

C-54's

I read with interest the article in the September issue of *Naval Aviation News* concerning the record number of flight hours flown in a single month in a C-54 *Skymaster*. The record of over 170 hours in one month claimed by NARTU Lakehurst is commendable.

For the record, it should be noted that NARTU Washington's C-54 #56543 flew 180.5 hours in April 1967 and C-54 #920001 flew 194.5 hours in March 1967.

And we would like to claim another record: a C-54 transport plane commander current and qualified for the longest continuous period of time – Commander M. E. Russell, USNR-R, VR-62A1, has been current since 1954 – 16 years.

Guy K. Martenson, LCdr., USNR
VR Program Manager
NARTU Washington

Aircraft Series

I would very much like to see a feature on the PT, the original fleet torpedo plane, built, I believe, by the Naval Aircraft Factory.

I never saw one and never heard a pilot who had a good word to say for it.

G. Van Deurs, Rear Admiral
312 Golden Gate Ave.
Belvedere, Calif. 94920

PT (Patrol-Torpedo) seaplanes were built at the Naval Aircraft Factory after WW I using R-6L fuselages and HS-1 and HS-2 wings (NANews, March 1970, pp. 26,29).

SQUADRON INSIGNIA

By Ltjg. W. H. Yanke

Fleet Composite Squadron Five at Naha, Okinawa, and its Detachment at Cubi Point, R.P., is a versatile squadron which provides training and logistic support to the 7th Fleet and friendly foreign navies throughout WestPac. VC-5 maintains six models of aircraft and a large inventory of targets at Naha. Two models of the F-8 *Crusader*, the F-8K and DF-8F, and the newly acquired A-4E *Skyhawk* comprise the jet inventory. Prop aircraft operated at Naha are the US-2C *Tracker* and the DP-2E *Neptune*. Rounding out the fleet of aircraft is the UH-34D *Seahorse*.

In the pilotless drone category, VC-5 operates the BQM-34A *Firebee I*, a jet-powered drone, controlled from the ground, and the liquid-fueled rocket-powered, pre-programmed AQM-37A.

VC-5 Det. Cubi Point also maintains both jet and conventional powered aircraft. It operates the A-4C *Skyhawk*, the US-2C and Beechcraft RC-45J. Aside from delivering the AQM-37A, Det. Cubi also offers two types of sea-going drone target boats, the 17-foot Ryan *Firefish* and the 40-foot AVR.

VC-5 is the only Navy unit in WestPac capable of operating the BQM-34A. Operating at high speed and altitude, the *Firebee* can be either air launched from the DP-2E or ground launched from one of the two pads maintained by the squadron at White Beach, Okinawa; after launch, they are controlled by the White Beach Out of Sight Control Center. The BQM serves as a target for air-to-air and surface-to-air missile exercises.

The AQM-37, capable of operating at high and low altitudes and at supersonic speeds, is used to test air-to-air defense systems as well as the *Tartar*, *Terrier* and *Talos* surface-to-air missile systems. Launched from the A-4, the AQM is a worthy adversary for carrier-based fighters or surface ships.

The F-8 *Crusaders* and A-4 *Skyhawks*, flying both at high and low altitudes, simulate friendly and enemy aircraft, thus providing valuable training in radar tracking and calibration exercises for ships' personnel. In addition, these jets are capable of towing an 8 x 40-foot target banner (for air-to-air gunnery) or the TDU target system (for either air-to-air or surface-to-air weapons exercises). An inexpensive and practical target, the TDU looks like a six-foot-long orange stovepipe and duplicates the size of a tactical aircraft on a radar screen.

In addition to its primary use as air launch for the BQM-34A, the P-2 operates in search and escort missions during drone operations and provides logistic support for the squadron during deployments.

The US-2C *Tracker* is the squadron's real workhorse. It is used to tow target sleeves for surface-to-air weapons exercises, to provide low altitude radar tracking and calibration services to surface crafts, and to assist in drone recovery operations.

While carrier-on-board-delivery is not a primary mission, VC-5 provided all COD services between Da Nang, RVN, and carriers operating off Vietnam from October 2, 1969, through January 31, 1970. During this period VC-5, with the acquisition of C-1A's, carried 3,748 passengers, delivered 825,065 pounds of cargo and mail, and made 1,564 carrier landings.

Another valued member of the VC-5 team is the UH-34D, used primarily for drone recovery The *Seahorse* ventures 20 to 60 miles from the coast to recover floating drones. It also provides customers a variety of logistic support: delivery of personnel and materials to surrounding islands or passing ships, medical evacuations when required, transportation of military

VIP's, and aerial photo platforms for Navy photographers.

The target boats, operated by Det. Cubi off the coast of the Philippines, provide high and low speed targets for missile and gunnery drills. The drone boats are controlled on station from the RC-45J which is also used for aerial photography and logistic support.

Although VC-5 operates primarily in the Ryukyu and Philippine Islands, target services are provided for other activities throughout WestPac. Squadron personnel and aircraft deploy regularly to South Korea, Japan, Taiwan, Thailand and the Republic of Vietnam. Customers include the U.S. 7th Fleet; U.S. Marine Corps air units; the British, Australian, New Zealand, Royal Thai, Republic of China, and South Korean navies; and the Japanese Maritime Self Defense Force.

The squadron, led by Commander Alfred C. Johnson, Jr., sends prompt, professional service anywhere in the Western Pacific area.

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