

NAVAL AVIATION

NEWS



38th Year of Publication

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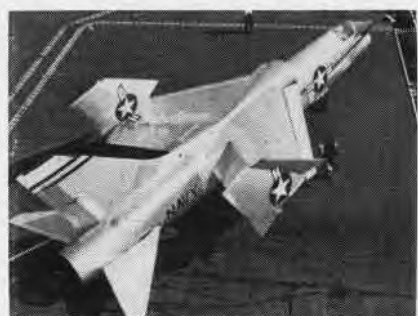
★ **BUILT FOR NAVAL STRIKING POWER** ★



A3D SKYWARRIOR IS EPITOME OF AIRPOWER AS IT COMES IN TO LAND ON THE NAVY'S ATTACK CARRIER FORRESTAL



ONE SKYWARRIOR AND TWO SKYHAWKS IN VEE FORMATION SHOW CONTRAST IN SIZE OF THE NEW CARRIER ATTACK AIRCRAFT



AN A3D, AN F4D, AND AN F8U, DEMONSTRATE NEW STYLES OF WING FOLDING WHILE SPOTTED ON DECK EDGE ELEVATORS



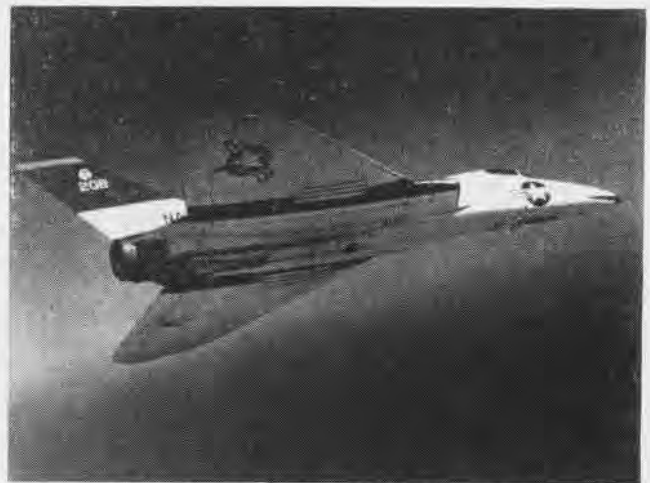
THE 1956 NAVAL AVIATION REVIEW

GIANT STRIDES toward increased striking power marked the forty-sixth year of naval aviation. At home and abroad, air elements rounded out the power of a naval force designed to preserve peace in the world. Serving the national interests on the international scene, naval forces built around air power again operated in common cause with our Allies in Europe and Asia

and demonstrated both the strength and the ability to function swiftly and effectively in any situation that might arise. Year 'round operations by versatile elements of mobile naval sea and air power in the Mediterranean and in the far reaches of the western Pacific, maintained a strong and modern first line of defense far across two wide oceans and far from our nation's shores.



THE F8U CRUSADER IS A THOUSAND MILE PER HOUR SPEEDSTER



MODIFIED DELTA, F5D SKYLANCER, MADE FIRST FLIGHT IN APRIL

MODERNIZATION and improvement of weapons, modification of long standing tactical concepts and the development of new battle techniques, adaptation of new arms and new weapons to naval uses, and particular effort toward increasing already potent capabilities for delivering atomic weapons, again proved productive means for increasing force capacity to hit fast and hard and with devastating effectiveness over wide impact areas.

A second *Forrestal*-class carrier joined the fleet and a third was launched. Five attack carriers completed conversion to bring the total number of angled decks in the fleet to fourteen. Several new aircraft of high capability went into operational use and the record performance of others almost ready gave promise of greater things to come. Fleet capabilities for air defense and for a diversified missile offensive were increased many fold by the assignment of *Sparrows*, *Petrels*, and *Sidewinders* to fleet squadrons, commissioning of a second *Terrier* missile cruiser, and continued integration of the *Regulus* system in ships to bring the number capable of operating this bombardment missile to a new high of eight attack carriers, four cruisers, and two submarines. The first helicopter assault carrier was added to the amphibious assault forces. Commissioning of air-

borne early warning wings and squadrons extended the ocean flanks of continental air defense lines. Assignment of a new turbo-prop seaplane to fleet logistic support forces with additional capabilities for operating as an aerial tanker, opened up new possibilities for extending the range of carrier aircraft on combat missions.

In antisubmarine warfare, significant advances were made in the development of search and attack helicopters and in the improvement of towed sonar gear. The long sought for instrumented helicopter was brought one step nearer to reality with the delivery of a prototype model for test and evaluation. Most significant of all was the development of an atomic depth charge with lethal destructive power over a wide impact area which put a potent weapon in the arsenal of both surface and air antisubmarine forces.

Progress in research assured continued increases in striking power in the years ahead. A nuclear powered guided missile cruiser of about 11,000 tons, and funds for the advance procurement of the power plant for a nuclear powered aircraft carrier, were included in the 1957 Shipbuilding Program. Construction of a prototype of the reactors to be used in these ships began. A study to determine the feasibility of adapting nuclear power to large seaplanes was



THE SLEEK ALL-WEATHER DEMON JOINED FLEET FORCES IN '56



SKYHAWK REPRESENTS NEW CONCEPT OF ATTACK PLANE DESIGN



THE F9F-8P COUGAR INCREASES FLEET PHOTO CAPABILITIES



COKE BOTTLE FUSELAGE IS GRUMMAN TIGER'S DISTINCTIVE MARK

initiated. Of particular significance was the beginning of work on the Fleet Ballistic Missile which will enable naval striking forces to hit any important land target in the world with an all-weather weapon difficult to counter.

In last year's roundup (NANews, January 1955), deadlines prevented inclusion of several late events which should be recorded. On 9 November 1955, the Chief of Naval Operations informed the Chief of the Bureau of Ships of his intention to equip each angled deck carrier with mirror landing systems and requested that equipment for twelve installations be procured during the fiscal years 1956 and 7. On the 17th, one solo flight in the T-34 basic trainer was authorized for all medical officers undergoing Flight Surgeon Training. The XRON-1 *Rotorcycle*, a one-man helicopter, made its first flight on the 23rd.

On 1 December, the USS *Wasb* completed conversion at the San Francisco Naval Shipyard, making the sixth angled-deck addition to fleet forces during 1955. On 20 December, two P2V *Neptunes* and two R5D *Skymasters* forged the first air link with the continent of Antarctica with a flight from Christchurch, New Zealand to McMurdo Sound. Beginning 22 December, naval aircraft flew missions for the relief of flood victims in northern California and western Nevada.

The first quarter of 1956 began, fittingly enough for the U.S. Navy, with the first operations of the first Forrestal class carrier. But unrest and friction in the countries bordering the Mediterranean sent United Nations truce observers to the Middle East and called for the Sixth Fleet to stage special operations and demonstrations in the eastern Mediterranean. Peace in the world was on unsteady footing.

January 3—First air operations aboard the USS *Forrestal*. Cdr. R. L. Werner, Commander, ATG 181, and Cdr. W. M. Harnish, commanding VF-21, piloting FJ-3 *Furies*, were the first to land aboard and be catapulted from the bow.

January 3—Airship AEW Squadron One, Cdr. L. J. Mack commanding, was commissioned at NAS LAKEHURST.

January 10—AEW Wing, Pacific, was commissioned at NAS BARBER'S POINT, Capt. E. C. Renfro commanding.

February 1—VAdm. A. M. Pride relieved VAdm. H. M. Martin as Commander, Air Force, Pacific Fleet.

February 6—Conversion of the seaplane tender USS *Albemarle* began to fit her for supporting the operations of heavy jet seaplanes.

February 10—The USS *Randolph* completed conversion at Norfolk which fitted her to operate modern aircraft.



RECORD HOLDER, F4D SKYRAY, WAS ADDED TO FLEET FORCES



SILHOUETTED AGAINST SKY, A3D PREPARES TO LAND ON CARRIER



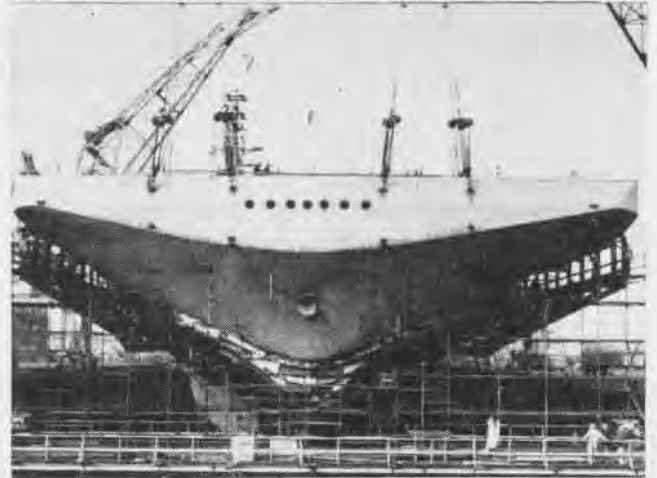
personnel. First squadron to be equipped was VMO-6.

March 31—Five A3D-1 aircraft were ferried from NAS PATUXENT to Heavy Attack Squadron One at NAS JACKSONVILLE, completing the first delivery to a fleet unit.

Tension in the Middle East was still high during the second quarter. At home, first flights of a new fighter, commissioning of a second guided missile cruiser and of a second Forrestal carrier, were significant events in the march toward greater versatility and power in the air. On the other end of the scale, the return of VP-50 from the Far East in June marked the last operations of the PBM.

A FIGHTING LADY GETS HER FACE LIFTED

USS TICONDEROGA BEFORE AND AFTER A HURRICANE BOW



FEBRUARY 21—Ground was broken at NAS LAKEHURST for the construction of a new Naval Ships Installation Test Facility intended to provide greater capabilities for testing carrier aircraft launching and recovery systems.

March 1—The USS *Essex* completed conversion at Puget Sound which fitted her with an angled deck, the eighth attack carrier to be so converted since the *Antietam*.

March 6—The Department of Defense announced that *Talos*, a surface-to-air guided missile developed by the Navy, would be used at land anti-air installations of the Continental Air Defense Command.

March 7—Fleet assignment of the F3H-2N *Banshee*, all-weather fighter, began with the delivery of the first six to Fighter Squadron 14 at NAS CECIL FIELD.

March 12—Attack Squadron 83, equipped with F7U-3M *Cutlass* aircraft and *Sparrow* I missiles, departed Norfolk aboard the USS *Intrepid* for duty in the Mediterranean—the first deployment of a missile squadron.

March 15—Capt. George C. Westervelt, USN(Ret), died. A Naval Constructor assigned to aviation in 1916, Capt. Westervelt was one of the designers of the NC trans-Atlantic flying boats, was in charge of aircraft construction during World War I, and from 1919 to 1927 was Manager of the Naval Aircraft Factory. He retired 1 June 1927 after 30 years of service.

March 20—First fleet delivery of the Kaman HO4C-1 helicopter, a single-engine, twin intermeshing rotor helicopter designed for observation purposes and the evacuation of

April 3—The Navy announced the operational assignment of *Petrel*, an air-to-surface guided missile designed for use by patrol aircraft against shipping. First squadron to be equipped was VP-24.

April 4—The Vought F8U-1 *Crusader*, Douglas A3D-1 *Skywarrior*, and Grumman F11F-1 *Tiger* were put through their first catapult launchings and arrested landings in carrier suitability trials on the USS *Forrestal*.

April 12—VAdm. H. D. Felt relieved VAdm. R. A. Ofstie as Commander, Sixth Fleet.

April 14—The USS *Saratoga*, CVA-60, second ship of the *Forrestal*-class and sixth ship of the United States Navy to bear the name, was commissioned at New York, Capt. Robert J. Stroh commanding.

April 16—The first F4D *Skyray* delivered to an operating unit was received by VC-3 at Moffett Field.

April 21—First flight of the F5D *Skylancer*. Piloted by Douglas test pilot R. O. Rahn, this multi-purpose carrier plane demonstrated high performance capability by exceeding the speed of sound on its first trial.

April 25—The Chief of Naval Operations announced that mirror landing systems would be installed in the near future at all principal Naval Air Stations for improvement of air traffic control and reduction of landing accidents.

April 26—The Naval Aircraft Factory at Philadelphia went out of existence and the Naval Air Engineering Facility (Ships Installations) was established in its place to do research, engineering, design and development, and



USS FRANKLIN D. ROOSEVELT, CVA-42, HAS NEW ANGLED DECK



COMMISSIONED IN 1956, USS SARATOGA BEARS A PROUD NAME

limited manufacturing, of devices and equipment for launching and recovering aircraft and guided missiles. Redesignation ceremonies on 1 June marked the passing of a name prominent in naval aviation since World War I.

May 29—VAdm. W. L. Rees relieved VAdm. F. W. McMahon as Commander, Air Force, Atlantic Fleet.

June 1—The USS *Franklin D. Roosevelt* completed conversion at Puget Sound, the first of the *Midway*-class carriers to be equipped with an angled deck.

June 15—Guided missile cruiser USS *Canberra*, second of her type in the U.S. Navy, was commissioned.

June 21—The Secretary of the Navy approved the name *Kitty Hawk* for CVA-63, fifth of the *Forrestal*-class.

June 25—Fleet Admiral Ernest J. King died. World War II leader of the United States Navy, Adm. King began his naval career in 1897 and his aviation career in 1927 when he qualified as a naval aviator in the rank of Captain. His aviation commands included: the USS *Wright*, AV-1, 1926, 1927-28; Aircraft Squadrons, Scouting Fleet, 1928; Assistant Chief of the Bureau of Aeronautics, 1928-29; NAS Norfolk, 1929-30; USS *Lexington*, CV-2, 1930-31; Chief of the Bureau of Aeronautics, 1933-36; Aircraft, Base Force, 1936-37; Aircraft, Scouting Force and Patrol Wing One, 1937; and Aircraft, Battle Force 1938-39.

June 27-28—The first annual Fleet Air Gunnery Meet was held at NAAS EL CENTRO, California. Six teams selected from Navy and Marine Corps shore-based fighter

units and composed of the squadron commander and three pilots competed with two firings each at 15,000 and 25,000 feet. Top team honors and the Earle Trophy went to VF-112 of AirPac, and individual honors to Ltjg. H. N. Wellman of VF-43 and AirLant.

June 28—Garrison Norton, succeeding James H. Smith, was sworn in as Assistant Secretary of the Navy for Air.

For the second straight year a reduction in the Navy-wide major damage accident rate was announced. A combat plane flew faster than 1000 miles per hour for the first time in history, a new aircraft became operational, and another Forrestal-class carrier was launched. Tension in the Mediterranean centered around control of the Suez and in the western Pacific flared briefly over an incident involving the loss of a Navy patrol plane and fourteen American lives.

July 2—Heavy Attack Wing Two, the first in the Pacific Fleet, was placed in commission at NAS NORTH ISLAND, with Capt. W. H. Weston in command.

July 7—Airborne Early Warning Squadron 12 and Maintenance Squadron Two were commissioned at NAS BARBER'S POINT for patrol duty along the Pacific Distant Early Warning Line of the Continental Air Defense System.

July 14—Departure from Norfolk of VA-46 on the *Randolph* for operations with Sixth Fleet, marked the initial overseas deployment of a *Sidewinder* missile unit.



SINCE CONVERSION, USS WASP WAS ASSIGNED TO ASW FORCES



RANDOLPH SPELLS AIR POWER IN THE MEDITERRANEAN TODAY



FIRST LANDING ON THETIS BAY (CVHA-1)



MARINE HELICOPTER IS DIRECTED ABOARD



KAMAN HOK-1 IS NEWEST MARINE TYPE

JULY 20—The USS *Thetis Bay*, first helicopter assault carrier, CVHA-1, was commissioned at San Francisco, Capt. T. W. South III, commanding. Formerly CVE-90, *Thetis Bay* was converted to operate helicopters and to accommodate 1,000 Marine combat troops to man them in the vertical envelopment tactics of a new type of amphibious assault.

July 25—Naval Air Station, Cubi Point commissioned. Situated on Subic Bay in the Philippines, the station supports fleet operations in the western Pacific.

July 31—An A3D *Skywarrior* manned by LCdrs. P. Harwood and A. Henson, and Lt. R. Miers, demonstrated the performance capabilities of new carrier jet attack planes with a 3,200 mile non-stop, non-refueling flight from Honolulu to Albuquerque, New Mexico, in five hours, 40 minutes, for an average speed of 570 miles per hour.

August 1—VAdm. W. V. Davis, Jr., relieved VAdm. T. S. Combs as Deputy Chief of Naval Operations (Air).

August 4—VAdm. C. R. Brown relieved VAdm. H. D. Felt as Commander Sixth Fleet.

August 15—The USS *Hornet* completed the angled deck conversion at Puget Sound.

August 15—The Avionics Division was established in the Research and Development Group of the Bureau of Aeronautics with Capt. W. E. Sweeney as Director.

August 21—An F8U-1 *Crusader*, piloted by Cdr. R. W.

Windsor, captured the Thompson Trophy with a new national speed record of 1015.428 mph over the 15-kilometer course at the Naval Ordnance Test Station, China Lake, California. This production model carrier fighter, equipped during its record performance with full armament of 20mm cannon and dummy ammunition, was the first operationally equipped jet plane in history to fly faster than 1000 miles per hour.

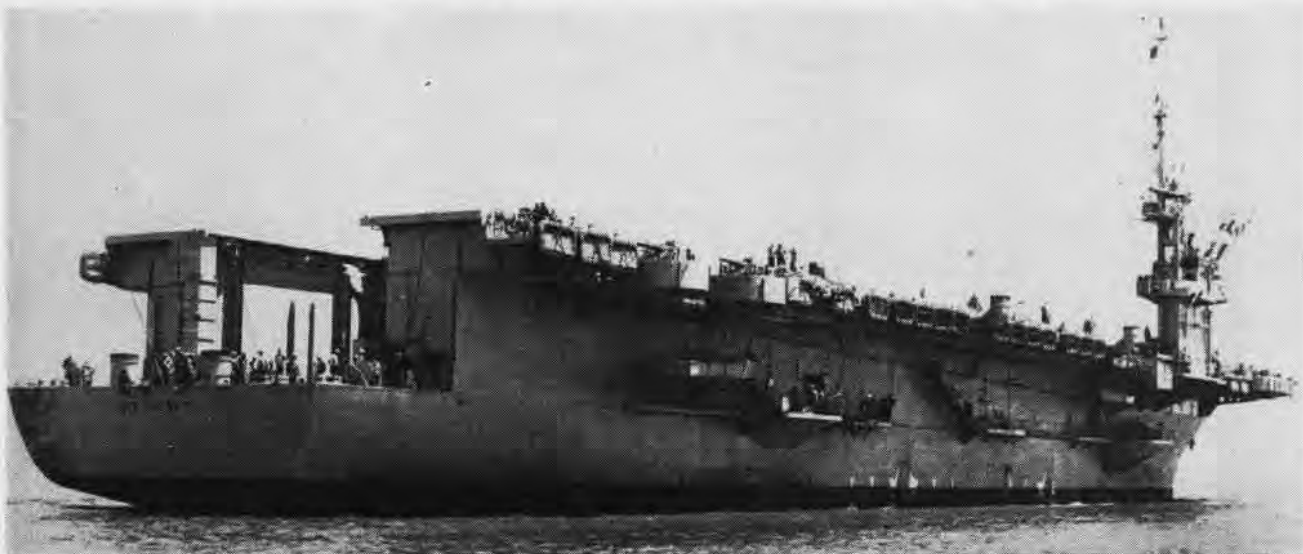
August 22—A P4M *Mercator*, while on night patrol out of Iwakuni, Japan, reported that it was under attack by aircraft over international waters 32 miles off the China coast, and was not heard from again. Search for the plane and its survivors by carrier and land-based air and by surface ships found plane wreckage and empty life rafts and the bodies of two crew members.

August 22—LCdr. Virgil Solomon set down the *Marianas Mars* on waters off NAS ALAMEDA after a flight from Honolulu and completed the last scheduled passenger run for *Mars* aircraft.

August 24—First air operations of the USS *Saratoga*. While operating at sea off the Virginia Capes, Cdr. W. E. Fly, piloting an F9F-8 *Cougar*, led a flight of 19 planes from Carrier Air Group One for the first landing aboard.

September 1—Admiral H. D. Felt relieved Admiral D. B. Duncan as Vice Chief of Naval Operations.

September 1—In the race for the North American



USS THETIS BAY, FIRST HELICOPTER ASSAULT CARRIER, WAS PLACED IN COMMISSION AT SAN FRANCISCO ON JULY 20, 1956



AN FJ-4 FURY IS SPOTTED ON THE USS FORRESTAL CATAPULT



THIS DRAMATIC PICTURE OF DECK OF FORRESTAL STARS A3D

Trophy, an event of the National Air Show, four FJ-3 Furies of VF-24 took off from the USS *Shangri-la* at sea off the Pacific coast of Mexico and flew non-stop 1,198 miles to Oklahoma City without refueling. Winner was Ltjg. D. K. Grosshuesch with a time of two hours, 13 minutes, 38.6 seconds for an average speed of 537.849 mph.

September 2—On the second day of the National Air Show, Ltjg. R. Carson, flying an F3H-2N *Demon*, of VF-124 captured the McDonnell Trophy with a non-stop, non-refueling flight from the USS *Shangri-la* off San Francisco to Oklahoma City, covering the 1,436 miles in two hours, 32 minutes, 13.45 seconds at 566.007 mph.

September 3—Two A3D *Skywarriors*, piloted by Capt. J. T. Blackburn, commanding HATWing-1, and Cdr. C. T. Frohne, took off from the USS *Shangri-la* off the Oregon coast, flew over the Air Show at Oklahoma City and continued on to Jacksonville, Fla., without refueling. In completing the 1,543.3 mile flight from the *Shangri-la* to Oklahoma City in two hours, 39.7 seconds at an average speed of 606.557 mph, Captain Blackburn was awarded the Douglas Trophy.

September 21—An F11F-1 *Tiger* piloted by Grumman test pilot Tom Attridge, shot itself down while conducting test firings off eastern Long Island by running into 20mm shells it had fired only seconds before.

September 27—The first A4D *Skyhawks* assigned to operating units were delivered to Attack Squadron 72 at Quonset

Point and All-weather Fighter Squadron 3 at Moffett Field.

September 29—CVA-61, third ship of the *Forrestal* class, was launched at Newport News and was christened by Mrs. A. W. Radford the USS *Ranger*, second carrier and seventh ship of the U. S. Navy to bear the name.

Against the background of a shooting war in the Middle East that required the evacuation of U.S. nationals and the logistic support of a United Nations police force in the Suez area by Sixth Fleet, the Navy announced the development of a new atomic antisubmarine weapon with a lethal range of several miles, and plans to build an 85,000 ton aircraft carrier equipped with an atomic power plant.

October 2—The carrier USS *Enterprise* was ordered stricken from the Navy list and put up for sale as scrap. Launched just 20 years before and commissioned 12 May 1938, she was in more action during World War II than any other carrier, was a pioneer in night combat operations, and was the recipient of both the Presidential Unit Citation and the Navy Unit Commendation. Decommissioned in the demobilization period following the war, she was laid up with the Reserve Fleet at Bayonne, New Jersey, and never returned to active service.

October 5—Three *Cougar* jets piloted by Cdrs. G. A. Robinson and D. Mitchie and Ens. R. K. Hess of Fighter Squadron 144, made a round trip transcontinental flight



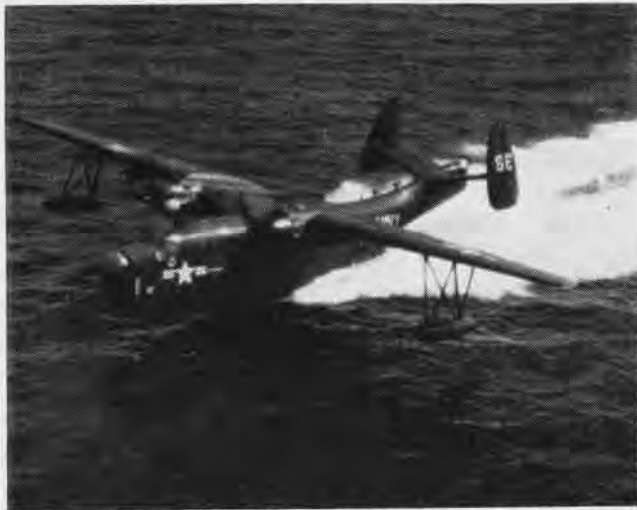
BOTH FLEETS NOW USE SPARROW SYSTEMS



TERRIERS ON FIRST MISSILE CRUISER



THIS COUGAR IS ARMED WITH SIDEWINDERS



MARINERS ENDED THEIR SERVICE WITH PATROL FORCES IN '56



CDR. WINDSOR, THOMPSON TROPHY WINNER, AND HIS CRUSADER

from Miramar, Calif., to Long Island, N. Y., and back again with refueling stops each way at Olathe, Kansas, in an elapsed time of 10 hours, 49 minutes, 11 seconds. Although better than the existing record of 11 hours, 18 minutes, 27 seconds, the flight was not officially observed and therefore not officially recognized.

October 11—An R6D of Air Transport Squadron Six on a scheduled MATS flight from Lakenheath, England to Lajes in the Azores, disappeared over the Atlantic with 50 passengers and a crew of 9 on board. Extensive search by ships and aircraft for the next 14 days found debris from the plane but no survivors.

October 23—The 1956 Harmon International Trophy for Aeronauts was presented to LCdr. Charles A. Mills by the President of the United States. The award cited his achievement in demonstrating and evaluating the all-weather capabilities of airships in ice-accumulation flights made in December 1955 near South Weymouth, Mass.

October 31—Seven Navy men landed in an R4D *Skytrain* on the ice at the South Pole—the first to stand at the spot since Capt. Robert F. Scott of the Royal Navy reached it in January 1912. The seven men were: R. Adm. G. J. Dufek, *Deepfreeze* expedition leader, Capt. D. L. Cordiner, Commanding VX-6, Capt. W. H. Hawkes, LCdr. C. Shinn, Lt. J. S. Swadener, Aviation Mechanic J. Strider, and Radioman W. Gumbie. The party remained at the pole for 49

minutes setting up navigational aids to assist the future delivery of materials and equipment for constructing a scientific observation station at the spot.

November 1—The attack carrier USS *Wasp* was redesignated an antisubmarine carrier, CVS-18.

November 2—The Navy announced award of a contract with Western Electric to design and furnish reactor components for a nuclear powered aircraft carrier at an estimated cost of \$13,157,000.

November 7—The Navy announced that CVA-64, the keel-laying of which is scheduled for 1957, would be named the USS *Constellation* after the famous 36-gun frigate authorized before the establishment of the Navy Department and completed at Baltimore in 1798.

November 8—A Navy Stratolab balloon, manned by LCdrs. M. D. Ross and M. L. Lewis, soared to 76,000 feet over the Black Hills of South Dakota in a flight designed to gather scientific data necessary to improved safety of flight at high altitudes. Best previous height reached by a manned balloon was 72,395 feet, a world record set by Army Captains O. A. Anderson and A. W. Stevens in 1935.

November 15—The USS *Hancock*, equipped with steam catapults in 1954, completed conversion at San Francisco which included installation of an angled deck, an enclosed weather bow, and mirror landing system. This was the fifth angled deck conversion to be completed during the year.



THE MARTIN MARS SEAPLANE RETIRES FROM ACTION AS HER ROLE IS TAKEN OVER BY THE FASTER CONVAIR R3Y-2 TRADEWIND

Death of VAdm. Ofstie Once Held Several Speed Records

On 18 November 1956, Vice Admiral Ralph A. Ofstie died at Bethesda Naval Hospital after a long illness. A prominent figure in Naval Aviation throughout his career, Admiral Ofstie qualified as a Naval Aviator on 8 June 1922 and within two short years was one of the Navy's top test and racing pilots. Holder of several records, in 1924 he accomplished the rare feat of establishing three world speed records in a single day.

His service in World War II began with duty as Naval Attache in London but soon shifted to the Pacific where he took command of the USS *Essex* and before the end of the war rose to carrier group command.

At the war's end he became Senior Naval Member of the United States Strategic Bombing Survey, Pacific, was head of the Naval Analysis Division, and in 1946 was assigned additional duty as Navy Member on the Joint Chiefs of Staff Evaluation Board for the Atomic Bomb Test.

During the Korean conflict he served as Chief of Staff to Commander Naval Forces, Far East, and commanded Carrier Task Force 77 in action against the aggressor. After a short tour of duty as Commander, First Fleet, he reported for duty as Deputy Chief of Naval Operations (Air) and in March 1955 took command of Sixth Fleet in the Mediterranean. In April 1956, illness forced him to relinquish his command.

Among VAdm. Ofstie's many decorations were the Navy Cross, the Distinguished Service Medal with Gold Star, and the Legion of Merit with three gold stars and Combat V.



CAPT. R. C. Needham, USS *Wasp* CO, congratulates Ltjg. R. J. Sullivan, of VF-153, for making the 30,000th landing aboard the carrier. Lt. D. Hegrat (L) was Sullivan's LSO.



CAPTAIN HILL STUDIES MR. LOW'S MODEL

Days of F4B-4 Recalled Research Engineer Builds Model

A research engineer in the missile research division of the Stanford Research Laboratories, Mr. Lawrence J. Low, recently showed Capt. Arthur S. Hill, CO of NAS MOFFETT FIELD, an F4B-4 model he has built.

Capt. Hill, a Naval Aviator for 26 years, who is now qualified to fly modern jet aircraft, flew the then modern F4B-4 in the early 1930's. The outstanding detail of the F4B-4 model was highly praised.

The F4B-4 was the Navy's 3000-lb. fighter-bomber of the 1930-35 era and it boasted a rate of climb of 1980 feet per minute—the F4D *Skyray* climbs in excess of 10,500 feet per minute—and a top speed of 187 mph.

Mr. Low has been building the F4B-4 model since 1953 when he was on active duty with the Navy as a lieutenant commander in the Bureau of Ordnance. Now the finished product has gone to the National Air Museum, a part of the Smithsonian Institution in Washington, D. C.



CDR. W. L. PACK, skipper of VA(AW)-33, NAS Atlantic City, congratulates E. D. Wagner, AD2, who shipped over for six years. The ceremony took place on Wagner's birthday.

Wright Trophy Presented First SecNav (Air) is Honored

Dr. Edward Pearson Warner, for the past ten years President of the Council of the International Civil Aviation Organization, an UN organization, was selected unanimously as the recipient of the Wright Brothers Memorial Trophy for 1956, according to Thomas G. Lanphier, Jr., President of the National Aeronautic Association. The trophy was presented December 17 on the anniversary of the Wright brothers' first flight.

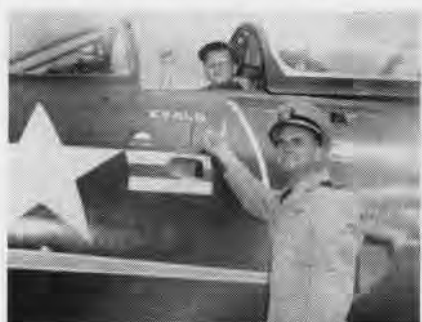
The trophy, administered by the NAA, has been awarded annually since 1948 "for significant public service of enduring value to aviation in the United States."

Dr. Warner was cited for continuous achievements over a broad range of aviation since 1917. As Chief Physicist of the National Advisory Committee for Aeronautics after WW I, he directed aerodynamic research at the Langley Aeronautical Laboratory and started the agency's first flight research and the construction of its first wind tunnel. He was a member of NACA from 1929 to 1945.

From 1926 to 1929, he was Assistant Secretary of the Navy for Aeronautics, the first to hold this position.

In 1939 he became a member of the Civil Aeronautics Authority and remained with it and its successor, the Civil Aeronautics Board, for more than six years. He was CAB vice chairman in 1941 and from 1943 to 1945.

Under Warner's leadership, ICAO has produced regional plans for the installation and operation of air navigation facilities over most of the world, and is cooperating in programs of technical assistance to other nations.



ATG-201 has returned to Cecil Field after a Far East deployment. During recent visit by Jax Cub Scouts, Ens. V. M. Onet, of VF-13, gives Cub Paul Harvey all-clear sign.



GRAMPAW PETTIBONE

Easy as Pie

The pilot of an F9F-6 on his third hop of the morning, a routine tactical training hop, cut the flight short because he and his wingman "felt pooped." He closed the power control to idle and proceeded to land. The airplane went farther down the runway than usual before touching down. The touchdown seemed normal, except that when the nose dropped immediately after touchdown, the pilot realized that he had no nose wheel.

The *Congar* slid straight and comfortably on the runway to a stop. On the way, the pilot opened the canopy. On stopping, he shut down the engine, removed his mask, smelled burning rubber, unhitched his straps and disconnects, and left the airplane.

In the pilot's words: "When I looked back at the plane to see what had happened to the nose wheel—no wheels at all! That was when I first realized I'd landed wheels up. Somewhat shook up, I was ushered into a dispensary truck. I was relieved to hear a corpsman radio in that the pilot was uninjured.

"Mental attitude that morning probably contributed to the accident. This was the sixth plane I had been in and out of. Three I had strapped myself into, started up, checked, shut down, unstrapped and disconnected from, clambered out of and downed. One had no UHF reception, another's speed brakes couldn't be raised, and the third had a near-dead battery. I would recommend to anyone in the same fix that he give up and take a shower instead of trying again."



Grampaw Pettibone Says:

Son, you said a mouthful! After downing a series of aircraft, a pilot's feeling of frustration and general mental attitude just ain't fittin' for flight. Anybody would wish he'd stood in bed.

Taking to the air in flying machines is a complicated business these days. Squadron ground personnel and gadget designers should try to make the pilot's job as simple and free of un-



necessary distractions as possible.

But great horned toadies! No pilot has any call to dope off completely. This daydreamer automatically reported his gear down and locked without feeling for the position of the landing gear handle or checking the gear indicator. And he didn't look for the runway paddle man who was frantically waving him off. The runway radio which might have gotten through to him wasn't functioning.

The pilot breakfasted at 0500 and, not being particularly hungry, ate nothing more for the eight hours preceding the accident. He'd had a full ration of sleep the night before, but prior to that he'd been short every other night for a week. It all added up



to his being somewhat lacking in food and sleep—and a pooped feeling that prompted him to shorten the hop and probably contributed to his failure to lower his gear.

Taxident

A Ltjg. made a normal landing following a scheduled transport flight in the Philippines. Passengers in his AD-5N were two other pilots.

After turning off the duty runway onto the taxiway, the pilot was advised by the tower operator that there was an obstruction on the taxiway and an open ditch paralleling the taxiway (recently dug for the installation of high intensity lighting).

In taxiing around the barricades surrounding an excavation, the pilot gave extra clearance to port and permitted the starboard wheel (on his blind side) to roll off the taxiway and into the ditch, the prop striking the runway.



Grampaw Pettibone Says:

Great balls of fire! The pilot had been warned of the obstruction and the ditch and *still* he managed to taxi into one or the other. He had high-priced qualified help aboard—two designated aviators who could have served as lookouts.

However, these naval aviators were so busily engaged in violating one of the most basic safety rules—removing safety belt and shoulder straps before the aircraft came to its final stop—that they assumed no responsibility for assisting the pilot.

It's still true that the two eyes in taxiing should be yours and—when available—two sets are a darn sight better than one.

Foot in the Dike

The pilot of an SNB was cleared for a straight-in approach at NAS OAKLAND on his night VFR return flight from Fresno. On final, the pilot allowed the aircraft to get too low and a sharp jolt was felt as the starboard main gear struck a dike seven feet above and 405 feet short of the runway. The wheel contacted the dike

18 inches from the top, damaging the starboard landing gear oleo strut.

A wave-off was taken and the pilot checked the port landing gear down, but the copilot could not see the starboard gear. Retardation of throttles gave a silent response on the horn check, indicating gear down and locked, so the pilot attempted a normal landing. The starboard gear collapsed and the aircraft swerved violently off the right side of the runway, collapsing the left gear and belly-bumping to a halt. Pilots and passengers were uninjured, but the Beech was worse for wear.



Grampaw Pettibone Says:

Jumpin Jehosophat! I'm constantly amazed at the way some pilots avoid getting the message.



I just wear a lot of good-luck charms and hope for the best

You'd think a severe jolt on a low final would give a definite clue that all was not hunky-dory. The thought occurred to this pilot, but the circumstances warranted more than the half-hearted investigation he made. Seems to me that in this case he'd want a wheels check from somebody *outside* the airplane if one wheel couldn't be seen from inside.

Forewarned is forearmed, and the damage could have been minimized. Further, there was no need for such a low, flat approach to a 6210-foot runway. It was the pilot's home field so he must have known about the slight obstruction on which he stubbed his undercarriage. It's a low-down shame.



MEMO FROM GRAMP:

A high-G pullout is like trying to make second base on a single or wearing an undersized girdle. It all depends on what happens in the stretch.



Paint Spreader

The AD-5W's approach to the landing was normal in all respects until just prior to touchdown. The aircraft stalled as the landing flare-out was commenced. The port wing tip struck the runway; application of power created torque that swerved the aircraft off to the left toward a stack of 10-gallon paint cans 150 feet from the runway. As the aircraft fell back to a level attitude, the right wheel buried itself in soft clay and twisted off.

Continuing on right wing tip, left wheel and tail wheel, the airplane crashed through the pile of paint cans, sheared off the radome and radar antenna and came to rest 290 feet beyond.

The aircraft accident board reported that the pilot's failure to maintain safe flying speed resulted in a stall with loss of directional heading and the resultant crash. Proper use of shoulder harness prevented possible injury.



Grampaw Pettibone Says:

The pilot who scattered the paint buckets was a commander with 100 hours in model and 3200 total flight hours. But from Cdr. to Ens., they all get in the AD stall/spin act. The picture is constantly improving, but there's still room for improvement.

All AD pilots would do well to review the special report on AD Stall/Spin in the April 1956 issue of Approach magazine as well as take another gander at the AD Accident Research Report (1 July 1951 to 1 January 1955) prepared by the U.S. Naval Aviation Safety Center at NAS Norfolk, Va.

Incidentally, the paint cans were positioned for restriping the runways. When this job was completed, the whole mess was removed.

Thrilled to Death

A NavCad with 166 total flight hours, of which six were in model, climbed into his T-28B one afternoon for a scheduled solo hop. He proceeded directly to the general vicinity of the family homestead, well outside the authorized training area. He obviously intended to give his parents a thrill.

He made a pass over his home at an estimated altitude of between 200 and 500 feet. Then he pumped his throttle to attract the attention of the home folks and wagged his wings at his father who was riding a tractor out in the field.

He was making a low-altitude slow roll when he crashed in an inverted attitude at an angle of 70 degrees and a speed of 170 knots. The airplane was demolished by the impact and resultant explosion and fire. The pilot suffered sudden death.



Grampaw Pettibone Says:

It was a costly thrill this NavCad gave his parents. Seems like every once in a while some dude has to learn his lesson the hard way. And I'm afraid this type of tragic accident won't be stopped until each pilot—new and old—is convinced that the rules were written for a reason, and for *everybody*.

Next time you're tempted to buzz the old homestead, just remember—you may be plowing your own furrow!

VP-45 MOVES WITH NO STRAIN



ALL ABOARD FOR THE FIRST LEG OF THE JOURNEY TO BERMUDA



VP-45 GEAR IS 'STOCKPILED' AS IT ARRIVES IN BERMUDA



MARLINS OF VP-45 OVER CANAL ZONE BEFORE THE 'BIG MOVE'

MOVING DAY for any family is cause for a large-size headache. When the "family" is a full-scale patrol squadron, Navy crews and their dependents, the attendant problems multiply and grow in proportion.

On 10 August 1956, VP-45, skippered by Cdr. E. W. Pollard, and based at Coco Solo, C. Z., received word that effective 1 September the squadron's permanent duty station was to be changed to Bermuda. At this time, VP-45 was deployed at Corpus Christi, indoctrinating college and university midshipmen in all aspects of seaplane operations.

During the six-week course, the squadron was responsible for setting up a ground school training program which would show the students the mission, need and capabilities of a seaplane squadron. Classroom instruction, covering courses in maintenance, aerology, flight principles, safety, ASW methods, were prepared and given by VP-45 pilots.

The ground work prepared the midshipmen for their indoctrination flight in the P5M-1 *Marlin*. During the flight, each student was allowed to take control of the aircraft to get the "feel" of the flying boat. Over 1400 flight hours were logged during the operations.

With their training program running smoothly, all departments started planning for the move. A liaison team, consisting of two officers and three enlisted men, was sent to Bermuda to evaluate the operational facilities and housing situation. The squadron used a ham radio as a quick means of communication with the advance party. Contacts were also made every other day, using normal naval communications channels.

The squadron returned to Coco Solo on 27 August. Plans had already begun to make the move as quick and efficient as possible. This involved planning airlifts for squadron personnel and their dependents, methods of shipping material to insure the squadron's operational readiness upon arrival at Bermuda. VP-45 set 19 September as the date it would begin operations at the new base.

THIS SOUNDS over-optimistic in view of the task ahead. Changing home port meant that all dependents had to be moved, all the equipment, and planes. Five *enccinte* squadron wives, with their other children, were sent to Bermuda in an R4Y on a special "Stork Lift." The beaching gear, engines, spare parts, even desks, file cabinets and all that make a squadron tick were packed and prepared for shipping.

Capt. J. G. Lang, commanding officer of the Bermuda Naval Station, did everything possible to assist the squadron in planning and carrying out the move. Personnel from each activity of the station cooperated in a "buddy" system to look after VP-45 personnel and dependents upon their arrival. Not only was each new arrival met by a "buddy," and taken to his new home, but he found his house stocked with enough groceries to last several days. This is the true Navy spirit in action.

Exactly as planned, on 19 September, the squadron aircraft and personnel were relocated in Bermuda on schedule. Patrol Squadron-45 was ready for operations immediately, a practical example of the mobility of our naval forces.

Sixth Fleet Visitors Greek Royalty See Navy Might

The Royal Family of Greece went to sea with the Sixth Fleet in late October to observe a demonstration of naval air power and anti-submarine warfare.

As guests of VAdm. C. R. Brown, Commander Sixth Fleet, Their Majesties King Paul and Queen Fredricka of the Hellenes, with His Royal Highness the Crown Prince and Her Royal Highness Princess Sophia, watched the special exercises from the flag bridge and flight deck of the USS *Coral Sea*.

A flight demonstration was provided by Air Group 10, of the *Coral Sea* and ATG-202, of the USS *Randolph*. Demonstrations included simulated atomic attacks, sonic booms, in-flight



ROYAL FAMILY WATCHES ASW OPERATIONS

refueling, and rocket, bombing, strafing, and napalm attacks on a towed spar.

The *Hugh Purvis* (DD-709) and the *H. R. Dickson* (DD-708) took part in the antisubmarine operation, using depth charges and hedgehogs.

Note to USMCR Pilots More Time Given for Shipping Over

Eligible Marine Reserve aviators have been given more time to submit applications for regular commissions. Reserve Officers, who were commissioned from the Naval Aviation program, now have until 31 May 1957 to ship over. The old deadline under the annual integration program was 1 January 1957.

Applicants must have an initial date of rank as second lieutenant between 5 June 1954 and 3 June 1955 inclusive, and must have been less than 25 years old when they completed flight training. Reservists must meet physical requirements, and be on active duty.

The aviators selected will receive

permanent appointments as second lieutenants in the Regular Corps with the same date of rank as their initial appointment.

Officers in a temporary grade above second lieutenant will be given a temporary appointment in their present grade with the same date of rank as that held in the Reserve Corps.

Trio Recall Hornet, CV-8 Were Together When Carrier Sunk

On the 14th anniversary of the day the USS *Hornet*, CV-8, was sunk off the Santa Cruz Islands 26 October 1942, three Navy chiefs, now members of VP-4 at NAF NAHA, Okinawa, met to drink a toast to a gallant ship and the shipmates in it.

James W. Jennings, AEC, Al S.



CHIEFS MEET ON THEIR ANNIVERSARY

Myers, ADC, and John C. Quinton, ADC, were aboard when the *Hornet* suffered the full wrath of the Japanese in the belief, quite rightly held, that she had launched the flight of Gen. Doolittle's raid on Tokyo.

All three chiefs were in the thick of the onslaught on the *Hornet*. Chief Jennings, then an AD1 with VT-6, was on the flight deck, forward, as a TBF trouble-shooter, when the word was passed to seek cover. He sought shelter near the forward 1.1 gun mount along with others, and from there watched much of the battle until a Japanese plane struck nearby. Jennings suffered severe concussions.

Chiefs Myers and Quinton, AMM2's attached to VF-72, were both working on an F4F. The job was almost complete when the attack came, but the forward elevator had been put out of commission, so the plane had to be left where it was. Between attacks, they assisted in fighting fire. They used empty foamite cans to haul water as all of the power had been knocked out.

After abandoning ship, the three were taken in other ships to a rest camp in New Caledonia. Here they parted and followed their separate careers. Almost 14 years later, they reported as CPO's to VP-4.

Together again, the veterans have found the bonds forged by fire, hold.

Fuel Puzzle on Randolph Ingenuity Solves the Problem

VF-62, operating aboard the USS *Randolph* with the Sixth Fleet in the Mediterranean, faced a puzzler.

The squadron required accurate fuel quantity readings in their FJ-3 aircraft, yet contaminants in the fuel were tending to drain to an area near one of the fuel quantity probes and shorting it out. The problem became



CHIEF WILLIAMS POINTS TO NEW DEVICE

so acute that on several instances a majority of squadron aircraft were in a down status owing to unreliable fuel quantity readings.

Chief Electrician O. Z. Williams and D. P. Kenny, AE1, reasoned that a rig could be built to keep both probes away from concentrations of contaminant. The chief decided to mount both probes in a battery by means of a bracket inserted through the bottom access of the fuel cell.

Aided by Kenny, Williams drew up plans for a simple bracket and R. H. Bariteau, AM2, constructed the first model. The rig eliminated the trouble.

Cdr. R. W. Drewelow, VF-62 skipper, declared, "What was a major headache for us was cured with a little initiative and imaginative know-how."

● Jet plane noise is becoming so intense that it can cause structural failure of the airplane's metal, according to researchers at the University of Southampton, England. Unconventional designs such as the delta wing, therefore, may be favored for future jets so noise can issue from extreme rear of the plane.



AN F2H-2 BANSHEE COMES IN FOR A LANDING ABOARD THE USS ESSEX, AFTER COMPLETION OF A COMBAT FLIGHT OVER KOREA

MCDONNELL *Aircraft Corporation*

BUILDER OF JET AIRCRAFT FOR NAVY IS SUBJECT OF FIFTH IN SERIES ON MANUFACTURERS

JETS ARE their business! Almost from the time of its foundation, this has been the case at the McDonnell Aircraft Corporation. The first production plane of McDonnell design, built for the Navy, was the FH-1 Phantom Jet. Later, continuing in the jet tradition, the company's carrier-based F2H *Banshee* proved its worth in Korean skies. In current production, the F3H-2 *Demon* is one of the most versatile planes in the Navy's air arm.

A little over 17 years ago, James S. McDonnell, Jr., founded the company which bears his name. On 6 July 1939,

the current president of McDonnell Aircraft opened his plant in rented quarters at the St. Louis Municipal Airport, with two employees.

McDonnell was no novice in the aeronautical field. A scientist and engineer, a pilot in his own right, he was chief project engineer for landplanes at the Glenn L. Martin Company for the five years preceding 1939.

The first months of his new venture were spent in equipping the 1900 square feet of plant space and assembling a nucleus of engineers. The company's first break came in 1940, when

the Army Air Force awarded McDonnell \$3000 for a pursuit airplane design submitted in competition. From that day, all work of the company has consisted of prime and sub-contracts on U. S. Government aircraft and parts.

It wasn't long before the McDonnell Company had its own plant at the St. Louis Airport, with increased floor space. Plant facilities have been growing ever since. During the early part of WW II until 1943, most of the company work consisted of sub-contracting for other firms. At this same time, Mr. McDonnell conducted an in-

tensive recruiting campaign for aeronautical experts, until he had rounded up a top-flight engineering staff.

In January 1943, the company received its first experimental contract for an aircraft of its own design from the Navy. The *FD-1 Phantom*, later designated the *FH-1*, was destined to write aviation history. The Navy gave the company a production contract for the aircraft in 1945. The *Phantom* was designed to incorporate the principles of jet propulsion for high speeds and to have at the same time the stability at relatively low speeds required for carrier-based operations.

On 21 July 1946, the *FH-1* made

nose and was so designed as to accommodate eight zero-length rocket launchers under the wings. With a maximum speed of 505 mph, the *FH-1* had a service ceiling of 43,000 feet, and a combat range of 690 miles. Sixty of this plane-type were delivered to the Navy, the last in 1948.

At the same time the Navy gave McDonnell a production contract for the *Phantom*, it also gave the company an experimental contract for the design, construction, and flight test development of the *XF2H-1 Banshee*, a carrier-based fighter. The prototype first flew on 11 January 1947. The following May, McDonnell received its

night fighter version, McDonnell produced a photographic reconnaissance model. The *F2H-2P* was the first Navy plane designed specifically for photo work. It is still one of the most successful and efficient photo planes in the Navy's air arm because of its range, stability, and altitude capabilities. The craft's elongated nose houses seven different types of cameras. The combination view-finder provides the pilot with unobstructed views of terrain below and ahead. Orientation and operation of all cameras are under the pilot's control.

The last of the *Banshee* series, the *F2H-4*, was delivered in October 1953.



PHANTOM ABOARD THE *FDR* MARKED NEW ERA IN NAVAL AVIATION



FIRST BANSHEE MODEL HAD A MAXIMUM SPEED OF OVER 630 MPH



THIS JET IS THE *F2H-3*, LONG-RANGE ALL-WEATHER BANSHEE



F2H-2P AND CAMERAS USED TO FULFILL ITS VARIED MISSIONS

several take-offs and landings aboard the *USS Franklin D. Roosevelt*. The event marked the first time an all-jet plane ever made a fly-off from a United States ship. These tests proved once and for all that carrier jet operations were feasible and pointed the way towards a new era in American Naval Aviation.

The *Phantom* was a single seat jet fighter. Equipped with a deck arrester hook, the aircraft was built around two Westinghouse *J-30-WE* axial-flow turbojet units. The plane had four 50 cal. machine guns mounted in the

first post-war production contract.

The first *Banshee* model, a single-seat fighter, was built around two Westinghouse *J-34* axial-flow turbojet engines. Four 20mm cannon were housed in the lower nose. Designed for carrier operations, its maximum speed was over 630 mph; ceiling approximately 48,000 feet, and range of about 1200 miles.

The *F2H-2* featured a lengthened fuselage, accommodating an additional fuel tank, and two wing-tip fuel tanks. All *F2H-2*'s can be equipped for probe-drogue in-flight refueling. Besides the

Banshees were in continuous production for six years. A total of 800 was supplied to the Navy and Marine Corps. These *F2H*'s proved useful during the Korean incident, and today continue to serve in the front line of the free world's defense.

During these years, the McDonnell company dealt not only in conventional aircraft but also in the field of helicopters. Under Navy contract, the company developed the world's first twin-engine, twin-rotor helicopter, the *XHJD-1 Whirlaway*, which was the largest in existence at that time.



THE F3H-2N DEMON IS ONE OF THE MOST VERSATILE PLANES IN THE NAVY'S AIR ARM

THIS TREMENDOUS five-and-a-half ton craft was used as a flying laboratory to test problems involved in rotary wing flight. Its cruising speed was over 100 mph.

In 1946, the company began work on the world's first ramjet helicopter, the *Little Henry*, developed for the Air Force. In 1951, work was started on another experimental helicopter for the Navy, the XHCH-1 Cargo Unloader. The aircraft is being developed for the rapid unloading and transport of equipment and supplies in forward areas of military operations.

Latest fighter of McDonnell design in production for the Navy is the F3H-2 *Demon*, a swept-wing carrier jet. The prototype flew for the first time on 7 August 1951.

The second production model is the F3H-2N all-weather fighter, built around an Allison J-71-A-2 engine with afterburner. In addition to four 20mm rapid firing cannon, this extremely versatile airplane carries unusually heavy loads of various external combinations of missiles, rockets, bombs,

fuel tanks, and miscellaneous stores, depending on the nature of the mission. Its adaptability to numerous tactical situations makes the *Demon* a formidable weapon now added to the Fleet.

Combining interceptor speed and fighter maneuverability with the payload of an attack bomber, the craft has a 45-degree swept-wing, designed for speeds beyond Mach 1. Its Hughes APG-51A radar assures all-weather and night operational ability. On 7 March 1956, the first deliveries were made to the Fleet.

The first flight of the F3H-2M, a potent missile-carrying version of the *Demon*, was made on 16 September 1955. The Naval Air Missile Test Center at Point Mugu, Calif., received the first delivery of production missile aircraft only six months later for research and development.

Successful performance of the *Demon* resulted in the Navy's placing an additional \$55,000,000 order for F3H-2's in March 1956, and production under this contract is scheduled to continue through March 1958.

No one at McDonnell is resting on the laurels achieved by the F3H-2N. These experts are thinking in terms of the future. The company has a Navy contract for the development and initial production of the F4H-1, a twin-jet supersonic attack fighter in the all-weather class. Further details of the aircraft have not been released.

World War II ushered in the beginning of the company's work in the field of guided missiles. In addition to carrying on experimental and development work, it produced for the Navy a light-weight, self-propelled, armor-piercing bomb which was guided by radio. Another product was a radio-controlled target drone. In April 1951, a separate missile engineering division was established to accommodate the company's increased activity in the field.

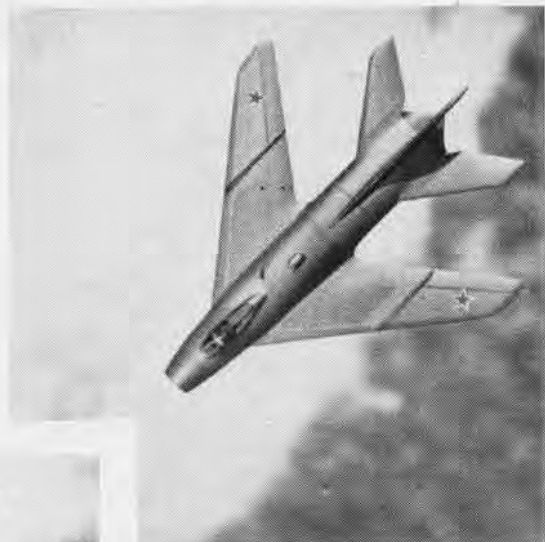
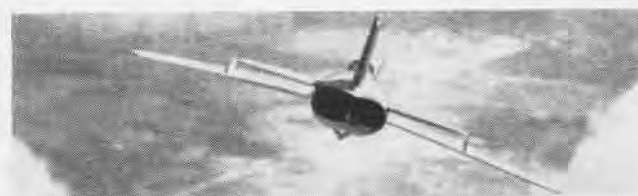
Current work involves two missile programs for the Navy, and two more for the Air Force. One successful guided missile being developed for Navy is the *Talos*, under the cognizance of



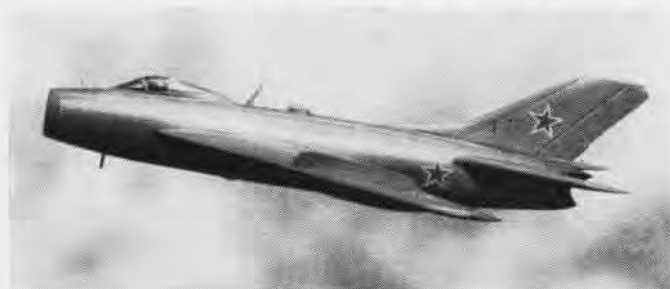
TALOS GUIDED MISSILE SLATED FOR CONAD

BUORD. Bendix and the Applied Physics Laboratory of Johns Hopkins University cooperated in the development of the *Talos*. It is a supersonic, anti-aircraft, surface-to-air guided missile.

During fiscal year 1956, the McDonnell Company employed a total of 16,436 personnel. Plant floor area amounted to 2,761,121 square feet. A new research department has been established to maintain the company's prestige in the development of aircraft and weapons systems. As for the future, Mr. McDonnell, chairman and president of the company, states: "More than ever, [the] company is exerting an intense effort to continue to make a valuable and economical contribution to the nation's defense."



USSR FARMER



The FARMER is a swept-wing, twin-jet operational fighter that shows its kinship to its forerunners, Fagot and Fresco. It can reach 40,000 feet about two minutes seven seconds after take-off and attain better than Mach 1 in level flight.

The wing is mid-mounted on the fuselage and swept at 52° as is the horizontal stabilizer. Both wing and tail are tapered to blunt tips with a definite 'bite' in the trailing edge of the tail. The vertical tail section is large, angular, and swept fore and aft, extending well aft the after fuselage.

The nose intake is round, but the fuselage flattens after the cockpit to house two jet engines. A sharp, nose probe located in the bottom of the intake, and a ventral fairing aft complete the recognition picture of the Farmer.

COLUMBUS HAS PILOT WITH A PAST

IN ITS ROSTER of flying officers, NAS COLUMBUS has discovered an "old bold pilot." Cdr. W. L. (Sam) Clifford, Aviation Maintenance Officer by assignment, lays claim to a parcel of unique achievements in a clan where few brothers are prone to gasp over a roll of five aces.

Parachutist of note, famed ex-barnstormer, Sam is now serving in his TAR (Training and Administration of Reserves) assignment flying acceptance checks on a new batch of FJ-2's when he's not hung with an airlift in one of the station's R5D's. Sam's flying career, covering a span of 25 years and over 15,000 hours, started at age 16.

His first connection with the birdman business was as manager of a small airport at Athol, Mass. A plan to raise money by the local flying club involved the hiring of a barnstorming aerial group known as Howard Dutton's Sky Devils. And Sam thought it might bring in a few more customers if a local boy made a parachute jump.

"Howard Dutton wouldn't let me jump from one of his planes because I wasn't covered in his insurance. I went ahead and made the jump on my own," he reminisced.

After that, Clifford joined the Sky Devils as a jumper. In all, he made more than 200 exhibition parachute jumps. He learned to fly and soon



WITH DUTTON'S SKY DEVILS IN THIRTIES

became expert enough to fly as part of the show.

In one of the more spectacular stunts, Clifford and another pilot would zoom over the field and cut the engine of a Piper Cub. Clifford then would climb out of the plane onto the wing struts, reach up and spin the propeller by hand to start it. "The pilot used to leave the switch off the

first few times to make it look like the engine wouldn't start again," Sam said.

In another trick, a plane would be slowed down and a parachute released. The plane descended under the opened chute. "The only trouble was that we had no way to spill the chute when we hit the ground and it would pull the plane right over on its back. We'd patch up the plane and move on to the next show."

In 1942, he joined the Navy and won his wings at Corpus Christi. After a session as instructor in "Yellow Perils," he was assigned duty as a transport pilot. When the war ended, he was in the Admiralty Islands.

Next, Clifford was sent to Patuxent River, where he flew two years as a transport pilot and a year as a test pilot. Here he was introduced to jets.

When Korea exploded, Sam was in Honolulu. He flew medical teams to the fighting area, and later transported VIP's. This job took him to such places as Arabia, India, Formosa, and Japan. For a young man who liked to travel, this was the life!

Before coming to Columbus in 1954, Clifford was again stationed at Corpus, attached to the Acceptance-Transfer Unit. His duties took him to California where his flying job was evaluating new Hytro anti-skid brakes and the Lear automatic pilot for the Navy. One of the tests for the brakes was landing an R5D at a gross weight of 69,000 pounds with the brakes clamped on before the plane touched down. The plane stopped in 1400 feet without a skid. This is the kind of expertness that only experience gives.

And now, at Columbus, Cdr. Sam Clifford is imparting the knowledge he has gained from his years and hours of experience, to the Weekend Warriors.



PROP OR JET, IT'S ALL THE SAME TO SAM

1957 Model Plane Contest NAS Willow Grove to Host Meet

The Academy of Model Aeronautics has announced that the Navy, host to the annual Model Airplane Championship Contests, has confirmed the period from 29 July through 4 August as the dates of the 1957 event.

The contests are scheduled to be held at NAS WILLOW GROVE. More than 1500 top model aeronauts are expected to compete for national honors. The Navy is planning an air show and "open house" on the last two days of the competition. The *Blue Angels* will be the main attraction.

More than 400 awards will be presented to the winners of 72 events.

Two Sidewinder Contracts Philco, GE Awarded Missile Work

Two new contracts for the production of guidance and control units for the Navy's *Sidewinder* guided missile have been awarded to the Philco Corporation and the General Electric Company.

RAdm. F. S. Withington, Chief of BUORD, states that the contracts include both Navy and Air Force requirements for the air-to-air missiles. The *Sidewinder*, developed at NOTS CHINA LAKE, is unique in its simplicity and low cost.

An attack squadron with the Sixth Fleet and a fighter squadron with the Seventh Fleet have already been equipped with these guided missiles.

FASRon-11 Aids Orphans Bluejackets Pinch-Hit for Santa

Personnel of FASRon-11, Atsugi, and the Community Center Baptist Church, Halifax, N. C., joined forces to bring a bit of joy into the hearts of children of the Chusen Gakuen Orphanage, near Ebina, Japan.

Three big boxes of clothing, collected by the church members, and 23 drums of fuel oil, purchased by the squadron, were presented to orphanage director, Mr. Masemi Katouda.

Aware that many children were facing the winter without proper footwear, FASRon-11 wives collected foot sizes of the small-fry, and purchased new shoes for each child.

During the weeks preceding Christmas, toys were collected for the Orphanage Christmas party, sponsored by the personnel of FASRon-11.



MANEUVERS ARE PRACTICED DAILY. FORMATION PICTURES IN THIS ARTICLE WERE TAKEN BY HARRY BURNS OF GRUMMAN AIRCRAFT

A DAY AT HOME WITH THE ANGELS

SPECTATORS' gasps of amazement, trepidation, and admiration are clearly audible to each other in the stark silence following the screaming jet blasts of the maneuvering *Blue Angels* at any of their exhibitions. Even to aviators, who can, from experience, understand the hazards of such wingtip to wingtip precision, the compact, 500 mph formation work done by these Naval Aviators is equally as amazing as to the layman.

How does a Naval Aviator, even as highly trained as they are, acquire the ability and confidence to be a *Blue Angel*? And especially, how can a man step into the shoes of such leaders as Zeke Cormier, Ray Hawkins, Johnny Magda, Dusty Rhodes, R. A. Clark and Butch Voris? Out of hundreds of good pilots, how would he be selected? A

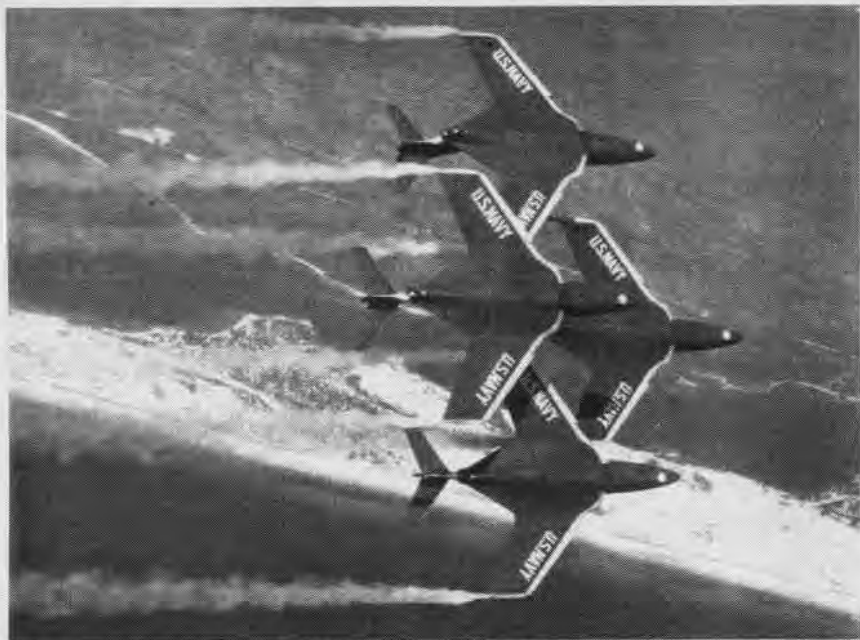
short visit to the home of the *Blue Angels*, at Pensacola, brought forth some of the answers.

Except for the first leader, Butch Voris, the normal method of selection of a new leader has been in accordance with the wishes of the team members. He was chosen from pilots they had been stationed with, flown with, been acquainted with, and known by reputation. However, in the case of the new leader, Cdr. E. B. (Ed) Holley, the selection was made from a number of willing candidates recommended by various activities. He was known by Cdr. Zeke Cormier, his predecessor, personally, and by reputation. All men being considered for the job are first approached to find out their desires in the matter. Even though it is not sea duty, it is, just about the same, since

about two-thirds of the time, the team is away from home.

Breaking in a leader is usually a gradual process. It is dictated by his experience and recent assignments. If he has done a lot of formation flying recently, he doesn't need so much preparation. But of prime importance to qualify a leader, is practice in each position of the four-plane formation. In gaining this experience, he acquires an idea of the problems of each of his team members, and can conduct his leadership accordingly.

Other team members are given a choice of position. It is done by a system of personal preference or by trial (without error, since one error could really louse up the team). Some pilots can fly more smoothly on the left, and certain others on the right.



MOST PRACTICE IS DONE AT ALTITUDE, BUT IS AS PRECISE AS AT ANY PERFORMANCE

THE SLOT or "tail end Charlie" position is, of course, different, and it is quite difficult to fly.

An aerodynamic phenomenon known as 'proximity effect' is the toughest thing to control in tight formations such as the *Blue Angels* fly. Air speeds of between 400 and 500 mph cause an air build-up ahead of the wings, fuselage and tail surfaces. These build-ups tend to push other planes out of the way, and out of formation, actually causing inadvertent wing movements of planes in the formation. In the familiar diamond formation, the leader is affected by build-ups from all members of the team, whereas other members are affected by only one or two of the others. By constant practice, the leader is eventually able to anticipate in which direction the proximity effect is going to come from in each maneuver, and in what sequence the effects will arrive. Thus, he can guard against them.

Zeke Cormier explained that, to break in a new member, leader or otherwise, it is necessary for him to first get the maneuvers down pat, solo or with another member, and gradually work into the diamond and echelon. "Of course," he said, "this is the only flight exhibition team in the world to land four planes at one time. This can't be practiced solo."

Ed Holley told how he felt about it.

"I've flown a lot of jets and like them, but this is the first time I've flown this close to the ground except on takeoff and landing. I realize that to have people see us and to witness how the Navy training teaches a pilot to control a plane in a precise manner, that we have to get down to where they can see us. But it sure gave me a start, on the first few flights, every time I got inverted and the ground seemed so doggone close.

"Pilots don't realize how close the *Angels* fly until they've experienced it. Naval Aviators are taught two types

of formation—parade and cruise. Parade formation is flown with the wingman 45 degrees bearing aft of beam, ten feet below the plane in front, with the wingtip two feet to the right or left. In cruise formation, the wingmen hold 60 degrees bearing, with a 20 foot stepdown and 'slag' *i.e.* being free to change sides to maintain position on the lead plane. The *Blue Angels* fly the same basic rules, using a parade formation."

Zeke Cormier had a few more comments to make. "You can tell within a foot whether a man is in position. We use a two-to-four foot tolerance, but air currents, turbulence, proximity effect, smoothness of lead (it may be a good or bad day for the leader), sometimes louse up the tolerance. Confidence in your plane, yourself and the other team members is all-important. Just as with students in basic training, worrying about self, plane or traffic has much effect on whether it is a good or bad formation."

Zeke feels that the team, in the last year, has had a closer feeling and a better appreciation of individual and collective confidence than at any time since he has known it. He further feels that this team spirit will be something that will be appreciated by his successor and future members of the *Angels*. "The team spirit is a refinement of, and more easily recognized as the spirit prevailing through the entire Navy."

A veteran *Angel*, Lt. Ed McKellar, started with Ray Hawkins as leader. He said: "I thought there was nobody



CDR. ED HOLLEY, NEW LEADER, AND ZEKE CORMIER DISCUSS PROBLEMS OF LEADERSHIP

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like him. It's a great team and I'm proud to have served on it. You know how the Navy works. You don't stay on the team long enough to know just how each new member operates, just get a good idea, and then a transfer. But you're on long enough to get the spirit and become imbued with it. For my money, it's not long enough, but, as I said, you know the Navy. And I wouldn't have any other life."

Another veteran, Lt. Nello Pierozzi, was in sick bay at the time of our visit. During rehearsal of a new opening maneuver, where four planes come down from four different directions and cross over in the center of the field at minimum altitude, he had to pull his controls extra hard to avoid another member of the team. Closing rate was 1000 mph. Result, a strained muscle in his back. But he was raring to get back to work.

Lt. Bill Gureck said that the new leader is fast smoothing out the rough spots. "The boys like Ed fine. He's very conscientious, and has drawn from his experience as a combat pilot to check small deviations of newly assigned wingmen, although he is still working on the specialized maneuvers flown by the team.

"The crew feels that he will be an excellent leader and is 100% behind him. The maintenance men have confidence in him and the pilots echo the sentiment. And equally, the pilots have confidence in the maintenance men. In the work-worn palms of these men lie the lives of the pilots."

An example of team spirit and recip-



TIGHT ECHELON TURN SNAPPED FROM T2V FLOWN BY LT. BRUCE BAGWELL, TEAM PIO

rocal feeling came when a leading Chief of the group said: "Excuse me, Mr. Gureck, how much money do we have in the Rec. (recreation) Fund?"

"Not very much," said Lt. Gureck, "but I think we should do something for the boys."

"That," said the Chief, "is something I agree on. How about a party? We've been working pretty hard."

Lt. Gureck agreed. "I'll tell the Skipper I talked to you and I'm sure he will agree."

There is no doubt as to the mutual feeling of respect and confidence be-

tween crew and pilots. One of Ed Holley's first projects is to try to get a better per diem deal for the men. He feels that the present system under which they are working, due to a technicality, is inequitable.

Ltjg. Robert L. Rasmussen had been flying with the *Angels* for about a week—a try-out period. He said: "The most startling thing I faced when first flying on wing was the actual distance the aircraft in diamond are separated. I used to watch them and thought it was an optical illusion, they looked so close. Now I know it's no illusion. I think now I can do it. I think it's no feat of superior stunt pilots, but that any average Naval Aviator, with fighter background, can do it with practice and the driving desire. I intend to practice until I get it."

Dave Scheur, Grumman Aircraft representative with the team, has seen the show hundreds of times. He said: "It still feels the same as when I first saw it in 1951, when Butch Voris reorganized the team after Korea. Two original members were on it, coming from VF-191, Pat Murphy and Ray Hawkins."

And so the short visit went. The answers to our questions were there, similar, and yet different. But they all added up to hard work, background and experience, confidence in self, team members and planes, and lots and lots of practice and training.



THE MECHANICS HAVE TO KNOW THEIR BUSINESS, KEEP PLANES IN TOP CONDITION

SHIP

NEWS

Emphasis Put on Safety Special Training at Cecil Field

Ten members of the NAS CECIL FIELD Security Police Force have completed a special six-week training course. Conducted under the supervision of the air base, with an assist from the Florida Highway Patrol, the blue-jackets were indoctrinated in all phases of police work.

Lt. J. W. Hagans, of the Florida Highway Patrol, participated with Cecil's Chief of Police, R. J. Scent, ABC, in lecturing the men during the training course.

During morning sessions, the men were given field training which covered exercises in first aid, traffic control, accident investigation and pistol qualification. Classroom instruction covered preparation of forms, conducting interviews and interrogation, public relations, traffic laws, and pertinent articles of the UCMJ.

Safety was the keynote of the training. The men learned that it is much more worthwhile to prevent a mishap than to investigate one.

IFR-IQ?

Interpret NOTAM code "QEEOS
22154Z UFN"

Answer on page 40

Awards for Marine NCO's Swagger Sticks to Class Honor Men

The top Marine in each class of the Staff Non-Commissioned Officers Leadership School at Cherry Point is being given a swagger stick as an indication of his achievement.

Sergeants major of MAW-2, MCAS CHERRY POINT, and Force Aviation Headquarters Group, originated the idea and unanimously decided to finance the program themselves.

The swagger stick is symbolic of the staff non-commissioned officer ranks. To date, under the program, winners have been: SSgt. W. T. Roberts II, H&MS-24; TSgt. L. A. Blois, VMF-122; MSgt. H. L. Golden, H&HS, FAHG.

New Airfield Dedicated Adm. Clarke Opens Texas Facility

The new Alice-Orange Grove, Texas, Naval Auxiliary Landing Field has been officially dedicated. RAdm. R. S. Clarke, Chief of Naval Air Advanced Training, officially opened the field when he set a TV-2 jet down on the 8,000-foot runway to snap a red ribbon held across the strip.

After a speech by RAdm. Clarke, Capt. G. F. Rice, commanding officer of NAAS KINGSVILLE, read the orders placing LCdr. G. V. Warren in command of the field. Kingsville is the parent-base for the new facility.

The landing field will be used by jet students from Kingsville, Beeville, and Corpus Christi to practice landings and flame-out approaches.

Night Flying at Whidbey Begins First Time in 11 Years

Extensive night seaplane operations commenced this fall in the Whidbey Island area for the first time in 11 years.

Prior to a few weeks ago, the rows of lighted buoys and the roars of the big patrol boats had not been apparent in Crescent Harbor since 1945, when the seaplane facilities of NAS OAK HARBOR were deactivated.

Now, after a few exploratory flights to determine that there were no hidden hazards to night landing in the area, VP-50 has begun a full schedule of night operations with the view of checking out all pilots in night procedures in the local area.

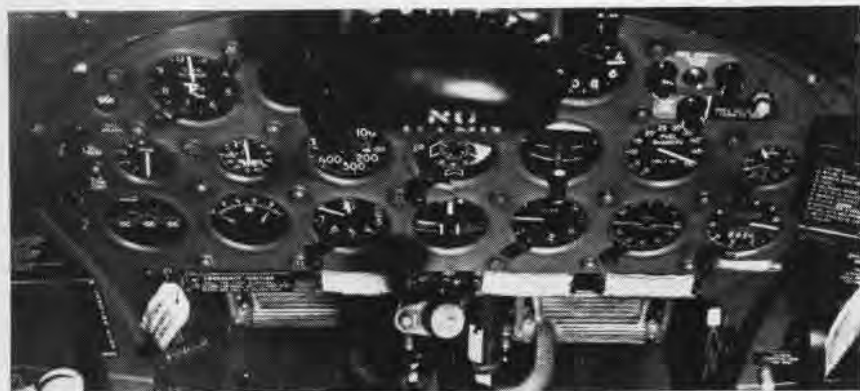
Marines to the Rescue Aid Lost Fort Bragg Soldiers

Three flying Marines rescued four Fort Bragg soldiers who became lost in a North Carolina wilderness during Exercise *Foxfire*. The five-hour search and rescue helicopter operation brought an end to two days of wandering for the 82d Reconnaissance Company soldiers.

The HRS 'copter, from HMR-262, MCAF NEW RIVER, was manned by 1/Lt. H. H. Kehs, 2/Lt. A. W. Cole, and Cpl. P. A. Larocca.

Using its hoist, the helicopter lifted the soldiers one at a time through the 100-ft. high trees and dense undergrowth, and later lowered them to awaiting ground searchers on a road near the scene of rescue.

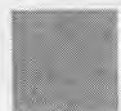
COLOR CONTRAST IN PANELS



COCKPIT PANELS WILL BE PAINTED MEDIUM GRAY DURING AIRCRAFT O&R OVERHAULS

COLOR is used very practically these days. Certain new production aircraft are coming off the line with gray or light green instrument panels. Black instruments against a gray panel make for reading ease.

Tests by the Air Crew Equipment Laboratory, Naval Air Material Center, proved the value of contrast. Eleven pilots flew F9F-6 *Cougars* with instrument panels painted with varying shades. Light color backgrounds proved a complete success.



Aircraft No. 70



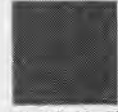
Aircraft No. 71



Aircraft No. 74



Aircraft No. 72



Aircraft No. 73

PAINT ON PLANE 72 WAS PILOTS' CHOICE



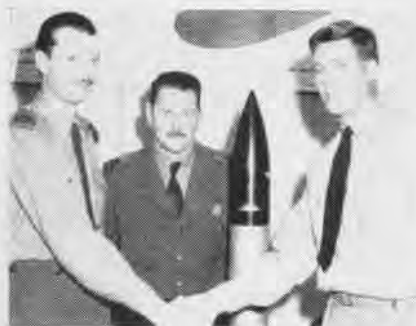
BEGINNING with these four, the Navy League will provide each new Naval Aviator with his first wings of gold. At NAS Pensacola, Vice Admiral A. K. Doyle pinned wings on pilots Hennessey, Waybam, Eden and Barringer.



ADM. ARLEIGH Burke, center, made a brief tour of the Naval Air Engineering Facility (Ship Installations), Philadelphia, Pa., and reviewed the development projects designed to speed up new equipment for the Fleet.



ERNEST M. DUMAS, A.A., shows a skyraider of VA(AW)-33, Atlantic City, to his father, G. D. Dumas, Naval aviator, No. 198. Ernest has entered the AOC Program and will soon start flight training at NAS Pensacola, Fla.



REPRESENTATIVES of two Americas exchange hand clasps at Aviation Officers School, NATTC Jax: (L to R) Lts. Halfdan Hansen, Hugh Frontrought, Argentine Navy; and Lt. John Arnold, of the Royal Canadian Navy.



MISS O'HARA CHRISTENS MODEL CARRIER

'Carrier' Commissioned

Christened the USS Recruiter

The Recruiting Service at Los Angeles commissioned its own carrier with Hollywood stars attending. Christened by Maureen O'Hara, the USS *Recruiter* was officially re-commissioned with Dan Dailey, John Wayne, John Ford, Adm. J. D. Price, Ret., and Cdr. C. E. Dunston, O-in-C NRS and ONOP Los ANGELES present.

The model ship was built at NAS NORTH ISLAND in 1947, with the name USS *North Island*. She is complete in all details, with generators and compressors. The model carrier has a compressed air catapult which will actually launch aircraft models from her flight deck.

Recruiters are sure that the model carrier will attract many young men who might be interested in making the Navy their life career.

- New type hard glass electron tubes, built for U.S. military aircraft, function unflinchingly at high altitudes for 1000 hours at temperatures of 572 degrees fahrenheit.

- The engines of a new U.S. jet bomber, flying at only 375 mph develop more horsepower than 400 automobiles of 200 hp each.



LTJG. EDWARD Davis, USN, exchanges pointers with Lt. Satoru Matsuda and Lt. Yoshitomo Nishimura of the Japanese Navy who are taking an ordnance course at NATTC Jax. Davis is going to NAS Iwakuni, Japan.

Heliport on Dry Tortugas

Polio Victim Rushed to Key West

Helicopter Anti-Submarine Squadron Five, NAS KEY WEST, lays claim to a mercy heliport at Fort Jefferson on Garden Key in the Dry Tortugas Islands. Fort Jefferson, 60 miles west of Key West, stands at the northern entrance to the Gulf of Mexico, and three mercy trips have been made from there in the last few months.

The most recent trip was the night 'copter lift of a 23-year-old Ens. Richard R. Schnier who had become ill aboard the USS *Pascagoula* (PC-847) operating out of New Orleans. Stricken with polio, it was necessary to get him to the Naval Hospital at Key West as fast as possible.

The *Pascagoula* anchored off Dry Tortugas and sent the patient by boat to the landing area. There Ens. Schnier was picked up by a helicopter flown by Cdr. R. W. Luke, CO of HS-5, and Ltjg. D. S. Jones. Shortly he was resting comfortably in an "iron lung."

Drydock Days at College

Kearsarge Men Are Busy at School

It has been said that too much time in drydock is bad for ships and sailing men. But to 46 men of the crew of the attack carrier, USS *Kearsarge*, now in drydock at Bremerton, Washington, the seven-month period is a great opportunity. They are attending Olympic College, Tacoma University, or the University of Washington under the Navy's tuition aid program.

Under this system, the naval district allocates money to the college to pay three-fourths of a man's tuition. *Kearsarge* sailors are studying college and pre-college level English, algebra, typing, sociology and several other subjects.

The program is being used by men in various stages of educational achievement. Many had already started college before entering the service; some are preparing for college entrance; six of them, already graduates of colleges or universities, are working toward higher degrees.

'FABULOUS FIFTEEN' BACK AFTER CRUISE



A VF-153 BANSHEE IS TAXIED FORWARD FOR PARKING ON WASP WASP PLOWS THROUGH PACIFIC WATERS WITH CVG-15 ABOARD

AFTER ITS fifth cruise in the western Pacific, Carrier Air Group 15 returned to NAS MOFFETT FIELD. Fabulous Fifteen, under the command of Cdr. William A. Shryock, was deployed in April 1956 aboard the USS *Wasp* (CVA-18).

The air group consisted of VF-152 and VF-153 under the command of Cdr. R. G. Nester and Cdr. L. W. Abbott respectively; VA-155 commanded by Cdr. Jack B. Jones; and VMA-223 under the command of Maj. V. E. Allen from MCAS EL TORO.

The air group has had an illustrious career. It was first commissioned in April 1943. Within five short months, CVG-15 was aboard the USS *Hornet* on its way to making history as a hard fighting outfit in the Pacific war. In 1944, the group was transferred to the USS *Essex* from which they launched their first combat sortie against the Japanese-held Marcus in *Hellcats*, *Hell-divers* and *Avengers*. In the months that followed, the group assaulted Japanese positions on Wake Island, the Marianas, the Bonins and Majuro. CVG-15 aircraft provided air cover for the landings on Saipan, Guam, Tinian, Peleliu and the Philippine Islands.

When Adm. Marc Mitcher's TF-58 intercepted Japanese Adm. Ozawa's fleet west of Saipan on June 19, 1944, CVG-15 accounted for its share of the 405 planes the Japanese lost in the Marianas Turkey Shoot. Six weeks later, eight planes of CVG-15 joined

eight from the USS *Lexington* to destroy 78 Japanese aircraft in one hour during an attack against an airfield in the southern Philippines.

CVG-15 led the first attacks by carrier-based aircraft against Formosa and Okinawa. At the Battle of Cape Egano (Philippines), the group helped to destroy four aircraft carriers and nearly all of the remaining ships of the Japanese force sent to turn back the Philippine invasion forces.

The Korean War brought CVG-15 back into commission in April 1951 under Cdr. R. F. Farrington. During their first Korean tour, the group chalked up almost 6000 sorties. Ten million pounds of bombs accounted for over 3000 rail cuts, destruction or damage to 46 locomotives, 5000 trucks, 900 rail cars and over 100 bridges. This action won the group the Korean Presidential Unit Citation.

The second tour in the Korean theater began in January 1952. CVG-15 was composed of reserve squadrons from Colorado, Oregon and New York. During their Operational Readiness Inspection prior to proceeding to Korea, the air group was awarded the highest mark in proficiency presented to any air group in the previous three years of the Korean War.

Arriving in Korean waters, CVG-15 set more new records. In 55 consecutive days, the group flew over 300 sorties. On 15 June 1952, they flew 184 sorties in support of ground forces engaged in the Battle of Anchor Hill—

a new one-day record. It was during this period, while attached to CVG-15, that Lt. Guy P. Bordelon became the only non-jet ace of the Navy in the Korean war.

The air group returned to Moffett Field in September 1953 to begin a new training cycle. It deployed again in March 1954 for the Orient and returned to Moffett Field in March 1955.

The most recent deployment carried the air group back to the Orient with stops at Hawaii and Guam. CVG-15 highlighted its visit to Guam with an Armed Forces Day flying exhibition.

The air group took part in another celebration on July 25 when it saluted the commissioning of the new Cubi Point Naval Air Station in the Philippines. On hand for the commissioning and aerial display were Adm. Arthur W. Radford and Philippine President Magsaysay.

Between task force operations, the men of the air group paid visits to Manila, Hong Kong, Yokosuka, Sasebo and Kobe. Wherever they went, they bought everything from Hong Kong bicycles to Japanese china and silk.

Now, after more than six months away, the 300 officers and men of CVG-15 have returned to their favorite port of call, NAS MOFFETT FIELD. VMA-223 has returned to El Toro. Encounters with typhoons and stops at the ports of the Orient will become part of the legend of CVG-15. The future holds a new training cycle in preparation for a future deployment.



FOUR FOOTED GUARDS

EIGHTY POUNDS or so of snarling, fanged fury charging straight towards a man will make him drop everything and run. This is no defense, however. The only sure defense against a well trained guard dog is to be somewhere else, anywhere but in the area patrolled by one of these dogs.

Certain areas of NAS MIRAMAR are so guarded. Twenty-three German shepherd dogs are currently serving there, protecting more than \$2,000,000 worth of government motor vehicles and other equipment, against theft and vandalism. Weekdays, the dogs stand watch from 1800 to 0600. Weekends, they are on watch 24 hours a day, replacing 18 men otherwise needed.

In 1948, the Naval Air Station at

Miramar, plagued with thievery in the Motor Pool area, began the guard dog experiment, with three guard dogs—loaned by civilians—and three trainers. Pilferage was soon reduced to zero.

Required to meet certain rigid standards, the dogs are trained under the supervision of C. Wilcox, AB2, and his seven assistants, some of whom have attended the military Dog Training School, Fort Carson, Colorado.

Obedience by the dogs, and trust in their trainers are essential, as is patience on the part of the dog trainers, on a 24 hour-a-day basis.

Though these dogs can be friendly, they are trained to attack viciously anything and anybody who doesn't belong in the area that they are guarding.



PROWLERS ARE GREETED BY THIS FELLOW!



HE'S BEING TRAINED TO ATTACK A MAN



TO KEEP DOGS ALERT AND SHARP, THEY ARE GIVEN 'AGITATION' FOUR TIMES WEEKLY



WHILE AT Johnsville, BARTU officers on annual active duty cruise examine world's largest human centrifuge at the Development Center.



RADM. J. S. RUSSELL, Chief of BuAer (center) welcomes Cdr. A. L. Hockins, CO of BARTU-776 and Cdr. E. M. Yoder, CO of BARTU-873.

BARTU'S TOUR BUAER FACILITIES

GO WEST, young man, go West," advised Horace Greeley, a famous nineteenth century American journalist. Nearly 100 years later, in October, the situation reversed, and 44 young men from California came to Washington, D. C. Navy air transportation took the place of covered wagons. Wealth was not their quest.

The group was composed of members of five Bureau of Aeronautics Reserve Training Units. BARTU's represented were 776, 777, 778, 779 from NAS LOS ALAMITOS, and 873 from NAS OAKLAND. They were in Wash-

ington for a 14-day active duty training tour at BUAER.

The men were of various ages, walks of life, and rank, but they all had several things in common. They were Naval Reserve officers, aeronautical experts, and a potential source of manpower to the Bureau of Aeronautics.

Organized in 1953, the mission of the BARTU is to provide an adequately trained force of Reserve personnel to BUAER and its facilities available for mobilization in time of national emergency.

When the officers checked in BUAER

on Monday morning, 15 October, they found a battery of Bureau personnel on hand to greet them. Heading the list was RADM. J. S. Russell, Chief of the Bureau. After welcoming them aboard, he said, "By its very nature of assigning Reserve officers with your professional qualifications to the technical billets required by the Bureau of Aeronautics, the BARTU program has become the backbone of Bureau mobilization requirements."

Capt. H. R. Browning, BUAER Naval Air Reserve Assistant and coordinator of the BARTU program, stated



THE BARTU TOUR members assemble on the flight line at NAS Norfolk. While at the air station they toured the Overhaul and Repair

Department. The Reservists also had an opportunity to visit a patrol squadron, Operations, and the USS Saratoga, moored nearby.



LCDR. J. W. SUGDEN, Patuxent Electronics Test, discusses the intricacies of the F3D to Reservists who are Douglas Aircraft employees.



HEAD OF Patuxent Repair Shop, LCdr. C. E. Hines, shows Cdr. B. W. Simmons and LCdr. A. J. Zavatero, BARTU-873, engine repair problems.

the purposes and aims of the tour in Washington. With him was LCdr. R. C. Weekly, Reserve Program Officer, who acted as guide, teacher, and father-confessor to the Reservists throughout the entire two-week cruise.

LCdr. Weekly warned them that "Anyone who stops to tie his shoelace will miss the whole show." And he wasn't joking. The officers had a mighty tight schedule ahead.

From the 15th through the 18th, the BARTU officers underwent a rapid, but thorough orientation course of the Bureau. They listened to Assistant Chiefs and Division Directors discuss the various projects and problems encountered in each division and activity.

One of the speakers was Mr. J. S. Eberdt, Assistant Director of BUAER

Plans. He is a man who knows about the BARTU program personally. A captain in the Reserves, he is skipper of BARTU-661, based at NARTU ANACOSTIA. His unit won the Noel Davis Trophy this fall as the outstanding outfit of its type.

After the indoctrination at BUAER, the Reservists were taken on several short trips within the Washington area, to tour Bureau field activities.

On Friday, the 19th, the officers were airlifted from NARTU ANACOSTIA to NAS NORFOLK. During the RON trip, they toured the O&R Department at the station, visited a patrol squadron and Operations. But the highlight of the tour was a visit to the USS *Saratoga*, moored nearby.

The next week the Reservists found

the pace even swifter. On Monday, they left Washington for a tour of NADMC JOHNSVILLE, Pa. The first stop was at the Naval Air Material Center, Mustin Field, Philadelphia. This is where the Navy scientists test materials to be used in aircraft and airborne equipment. After receiving the red-carpet treatment from this facility and a guided tour, the BARTU group left for NAS WILLOW GROVE, and from there Tuesday morning, to the Naval Air Development Center, Johnsville. Here they had a chance to see first hand the Navy's contribution to research and development in the field of aeronautics. Basic research at the center covers engineering, electronics, armament, aviation medicine, photograpy, instruments, and air warfare.



ALL ABOARD for the Norfolk O&R department. Mechanized shuttle does all the work, while officers sit back and enjoy their guided tour.



BARTU OFFICERS inspect a P5M while visiting a Norfolk-based patrol squadron. These Reservists are experts in field of aeronautics.



RESERVISTS WATCH birdie during first day at BuAer. With them in front row, Capt. Browning (2nd left) and LCdr. Weekly (far right).



THIS PIECE of equipment, on display at the Armament Test Division, NATC Patuxent River, interests these members of the BARTU group.

LATER THAT day, the group was flown to Patuxent River on an RON flight, for a tour of the Naval Air Test Center. During their stay, they had an opportunity to learn the factory to fleet processing of naval aircraft. The center tests and evaluates aircraft which are under consideration as new additions to the Navy's air arm. While at Pax River, the officers visited Service Test, Electronics Test, and Armament Test Divisions. They also inspected the steam catapult which is in operational use at NATC PATUXENT.

Back in Washington on Thursday, the 25th, the Reservists visited the David Taylor Model Basin, at Carderock, Md., a BuSHIPS laboratory. They spent the day touring the facility's wind tunnels, and towing basin. The next day was spent at BUAER for a critique and summary of the 14-day active duty cruise. On Saturday, the BARTU members were airlifted back to their parent stations.

In case of rapid mobilization, these BARTU officers are ready and able to take over their jobs at BUAER or its facilities. They are aeronautical specialists who know BUAER's organization, its mission and its methods.

Any member of the Naval Reserve, who feels that his background qualifies him, may apply for assignment to a BARTU. If BUAER can make use of his talents, then he will be assigned a mobilization billet to which he will be ordered in case of national emergency. Drill periods and the annual active duty training cruise are designed to familiarize members with Bureau func-

tions, so that they will have an overall concept of the requirements of their billets. As of 1 January 1957, 24 paid drills are authorized annually. Previously there were only twelve.

BUAER has the responsibility for providing technical assistance for the screening and training of BARTU personnel. Military and administrative control is provided by CNARESTRA through the naval air station in his command to which the unit is attached. The station is responsible for providing logistic support and training.

THERE ARE at present 20 BARTU's, although in its organizational setup, there is authorization for 30. Each

unit is composed of officer and enlisted personnel who have qualifications for specific mobilization billets in the Bureau or its field activities. The Reserve units consist of 33 officers and seven enlisted men as regular members, with additional officers as associate members.

Another BARTU tour at BUAER is being planned. It is slated for the latter part of April. CNARESTRA has the responsibility for deciding which units will participate. Capt. Browning, Naval Air Reserve Assistant, hopes that by using a rotation system among the units, all BARTU groups will have an opportunity to take their 14-day active duty training at the Bureau.



RADM. J. S. RUSSELL presents the coveted Noel Davis Trophy to Reservist Capt. Jesse S. Eberdt, skipper of BARTU-661 at NARTU Anacostia. Eberdt is the Assistant Director of Plans at BuAer.

Aero Duty for Marines Training Offered USMC Enlistees

Marine Corps recruiters can now offer aviation training to prospective recruits.

The recruits, enlisting under this new program, are guaranteed that after completion of recruit training and individual combat training they will be assigned to an aviation school. However, each individual has the option of voluntarily requesting assignment to other duties.

Among the courses offered in aviation are jet mechanic, helicopter mechanic, air launched missile technician, and air traffic controller.

Cool Courage Rewarded Ltjg. Lockhart of VP-711 Honored

For outstanding professional skill and cool courage during an attack on his VP-9 patrol plane by hostile jet fighters over the northern Bering Sea area on June 22, 1955, Ltjg. David M. Lockhart now of VP-711, NAS DENVER, was recently awarded the Air Medal.

During the sudden attack, several crew members were wounded, and the left wing and engine of the patrol bomber set on fire. Ltjg. Lockhart not only aided his plane commander in combating the fire but handled the voice distress communication and supervised preparations for ditching. His action contributed greatly to the success of a crash landing on St. Lawrence Island under foul weather conditions.

Ltjg. Lockhart joined VP-711 after his release to inactive duty.



USS SARATOGA'S only pair of twins, build model boats in Sara's bobby shop. James and John Dignam, YN3, come from Philadelphia. John works in the Legal Office, and Jim in the ship's Engineering Department Office.

Brothers in Same Outfit Sergeant and Corporal in MAG-24

"Brothers, Brothers" might well be the theme song of two new members of Marine Aircraft Group-24 at Cherry Point, N. C. They are SSgt. Lewis R. Williams and Corp. Robert H. Williams.

"Both of us checked in from the Triple Three at Camp Fugi, Japan," says Lewis. "The Triple Three is the Third Battalion, Third Marines and Third Division."

Robert, a corporal in the supply section of VMF-531 says, "Lew may be a staff sergeant, but if he gives me too much trouble, I just remind him that I used to box in tournaments."



BROTHERS PLEASED TO SERVE TOGETHER

Lewis, non-commissioned Officer-in-Charge of the Logistics and Embarkation section of the MAG says they get along as two brothers should.

"After all, he has been taking orders from me all his life. There is no need to stop now." — Lewis is the elder.

Army Medics to Corry Officers Undergo Flight Training

The first Army officers ever to undergo flight training in the Instructors' Basic Training Group have reported aboard NAAS CORRY FIELD. They are LCol. R. B. Austin, III, and Capt. Henry Tyminski, Army Medical Corps.

Both veterans of WW II, the Army doctors entered IBTG with 31 Navy flight surgeons. They expect to receive their flight surgeon's wings after six weeks of concentrated training.

If the doctors successfully complete the course, they will be the first Army officers to receive Navy wings in the Basic Training Command.



HARRIS WON'T TRADE HIS 'COPTER DUTY

'Ti' Boasts a Hero Four-Time Commendation Winner

John Harris, AE2, a helicopter crewman of HS-2 aboard the *Ticonderoga*, is a four-time winner of a Naval commendation.

The commendations were for fighting a helicopter fire at Floyd Bennett Field, making helicopter equipment at the Jacksonville O&R department, rescue work in the Pennsylvania and Connecticut flood disaster areas, and saving the life of a downed *Ticonderoga* pilot in the Mediterranean.

What does Harris think about helicopter duty on a carrier? "It's my first carrier cruise experience in helicopter work, and I wouldn't trade it. Never a dull moment!"

Veteran Pilot Qualifies Is Ship's Company Officer on Sara

A veteran Navy pilot with over 5000 total flight hours to his credit, LCDr. P. O. Harwell recently became the first ship's company officer to complete the necessary landings to qualify aboard the USS *Saratoga*, CVA-60.

Flying a twin-engine TF-1, a transport version of the SF-1, a transport version of the SF-1, Cdr. Harwell shot six touch-and-go landings on the carrier's four-acre flight deck while the vessel was at anchor in Guantanamo Bay, Cuba. The following day, when the ship was underway, he became fully qualified by making six arrested landings in less than half an hour.

Cdr. Harwell began accumulating his flight time over 14 years ago when he entered the Navy as an aviation cadet. He served in WW II and the Korean conflict. Before Korea he saw service on the USS *Franklin D. Roosevelt* and the USS *Midway*.

SKYRAY MEETS THE MARINES



TWO OF VMF-115'S SKYRAYS PRACTICE FORMATION FLIGHT OVER THE MOJAVE DESERT. F4D'S GROSS WEIGHT IS 19,000 POUNDS

FIRST MARINE squadron to "indoctrinate" the F4D *Skyray* into fleet operations is VMF-115. The squadron took advantage of a three week deployment to MCAAS MOJAVE to check all its pilots out in the speedy, all-weather interceptor. Combat readiness and instrument proficiency for all hands, AND the new plane, was the goal set by LCol. R. H. "Smoky" Spanjer, CO.

Home base of VMF-115 is MCAS EL TORO. It is a part of MAG-33, commanded by Col. G. F. Britt. Col. Britt was enthusiastic over the combat potential of the F4D after several



CONGENIAL LCOL. 'SMOKY' SPANJER, CO

familiarization flights in the hot bird.

Since the squadron deployment, the planes have been grounded until recently for field modifications. Trouble developed with the fuel cell backing board and afterburner malfunctioning which required changes. The *Skyrays* are now back in the blue with modifications completed.

The *Skyray*, built by Douglas Aircraft, has a wingspan of 33 feet, six inches, and is 50' long. It is powered by a P&W J-57 turbojet, rated at 10,000 lbs. thrust, after-burner equipped. Speed is in excess of 750 mph.



OFFICERS AND MEN OF VMF-115 'WATCH THE BIRDIE' IN THIS TEAM PORTRAIT AFTER SKYRAY INDOCTRINATION AT MCAAS MOJAVE



ELECTRIC'S CANBERRA HAS BEEN CONVERTED INTO A FLYING TEST BED FOR THE NAPIER SCORPION AIRCRAFT ROCKET ENGINE

BRITAIN'S RESEARCH AIRCRAFT

At the Farnborough air show, the Canberra, equipped with Scorpion rocket engines, made its first appearance. Scorpions can be lit and extinguished at will. After a speed run, the Canberra performed an

upward roll assisted by the thrust of the Scorpions.

The Rolls-Royce Tyne turboprop made its debut in the nose of a Lincoln. In a fly-past, with other engines feathered, the Tyne furnished all the power.



TYNE TURBOPROPS FOR VICKERS VANGUARD



TYNE TURBOPROP, MOUNTED IN NOSE OF A LINCOLN TEST BED, DEVELOPS 4470 EHP



'THIS IS A DRILL.' CREW MEMBERS ON BOARD SARATOGA RECEIVE INSTRUCTIONS IN PROPER HANDLING OF FIRE FIGHTING EQUIPMENT

SARATOGA DAMAGE CONTROL DRILL

GENERAL QUARTERS, all hands man your battle stations!" These words send the crew on the double to their GQ stations during training periods on board the USS *Saratoga* (CVA-60).

During her shake-down cruise in the Caribbean, the giant warship devoted a great deal of time to training. Typical of the many drills conducted was the "repair party."

Damage control is nothing new to Navy ships. Well-trained DC parties on the famed WW II *Saratoga* (CV-3)

By Dick Craddick, JO1



PERSONNEL ASSEMBLE THEIR EQUIPMENT

kept that carrier afloat after a devastating Kamikaze attack. Many other ships also owed their survival of Kamikaze attacks to well trained, efficient DC officers and men.

Responsibility for this vital operation is vested in a tightly-knit, rigidly-controlled organization, headed by the

DC officer. "DC Central," located in a well protected area, is the nerve center for a network of repair teams.

These teams, situated at vantage spots throughout the ship, send back reports by means of a telephone talker. The central determines the condition of the ship and what action should be taken to correct a potentially dangerous situation.

Officers and men of the *Saratoga* take pride in their DC system. They know that indecision or delay in an emergency may mean their lives.



SWITCHBOARD OPERATOR IS A KEY MAN



A 'NERVE CENTER' FOR THE REPAIR TEAMS

RADAR LABORATORY ON WINGS

RADAR HAS given new dimensions to detection, and an Airborne Early Warning airplane carries potent equipment for spotting ships and planes. AEW equipment not only tracks such planes or ships, it can be used to vector in interceptors or bombers to stop them.

But when it comes to spotting a guided missile-carrying submarine with only a snorkel showing, the task of detection is vastly more complicated and the sub may easily scoot under the AEW line. A snorkel is lost on a sea-cluttered scope.

Sea clutter is the return of radar signals from the surface of the sea. It is similar to ground clutter, which makes the radar signals from such targets as aircraft and missiles difficult to pinpoint.

The Wave Propagation Branch, headed by D. L. Ringwalt, at Naval Research Laboratory, is trying to find a way to eliminate sea clutter or at least diminish it. To do this, NRL designed instrumentation for an R5D.

The plane configuration makes for enormous drag. The flying laboratory takes off at a weight of about 72,000 pounds, has an 8-hour range, and a cruising speed of about 135 knots.

After adjustment and calibration of the radar systems, and a series of tests,



EQUIPMENT MAZE FILLS CABIN OF R5D

the plane and its crew spent six weeks operating out of Bermuda. Sea clutter was the enemy.

A year ago, the plane returned to Bermuda for two more weeks of action. One month later, ground clutter in the Baltimore-Annapolis area was studied. Then in March, 1956, the R5D operated in the Bahamas for ten days.

There, another highly technical ex-



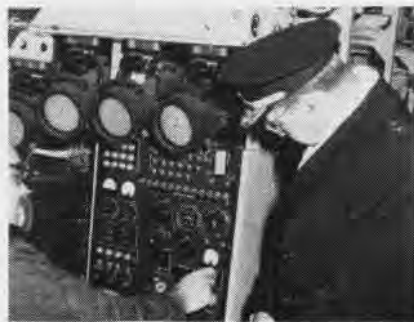
THE AIRBORNE RADAR LABORATORY, CONVERTED R5D, WAS READY IN JANUARY 1955

periment held the interest of the scientists aboard. They call it "tropospheric scatter propagation," wherein the radar signals bounce off the troposphere, back to earth, and reach beyond the curvature of the earth.

In August and September, the plane worked out of Thule, Greenland. Again the object was ground clutter.

Equipment installed on the R5D includes four radar systems, operated synchronously from a centralized control. Associated recording and calibrating apparatus as well as extensive meteorological instrumentation, almost completely fill the plane's huge cargo compartment. The radars operate on frequencies ranging from one to ten kMc.

Antennas, transmitters, and the "front ends" of the receivers are car-



D. L. RINGWALT WITH RADM. F. R. FURTH

ried in the four bulbous nacelles, two mounted under each wing. Modulators, amplifiers, video control and recording instruments are in the cabin.

Outputs of the two receivers on each radar are photographed on an oscilloscope by a frame-by-frame camera and a continuous film camera. Also, a pulse-to-pulse record is fed to another oscilloscope. When photographed by a continuous film camera, this record appears as a sequence of horizontal lines whose lengths correspond to the video amplitude.

Meteorological-probing devices are mounted in a 15-foot mast which may be hydraulically raised and lowered in flight. The equipment may be used to measure wet and dry bulb temperatures, refractive index, rain drop size and distribution, electric fields, total water content of the air, and total pressures. With the mast extended, the measurements are made in air only slightly disturbed by the aircraft.

Much has been learned by these airborne experiments on how to filter out ground and sea clutter so that a small target can be readily identified and pinpointed. But, as in all such highly technical work, it is a slow process to gain the objectives. Studies in troposphere scatter propagation, radio ducts, atmospheric scattering, and clutter are continuing with the winged laboratory.

LET'S LOOK AT THE RECORD

Awards to Anacostia NARTU Groups Win Recognition

The Naval Air Reserve Training Unit, Anacostia, won the CNATRA Trophy as the NARTU which had improved most during the past year.

Attack Squadron 662, commanded by LCdr. Lawrence Koegel, and BARTU-661, skippered by Capt. J. S. Eberdt, each won the Noel Davis Trophy as outstanding units of their type.

NARTU ANACOSTIA, commanded by Capt. L. E. Harmon, has 24 flying and support units with 2000 personnel.

VP-741 is Given Trophy Under SecNav Makes Presentation

When Patrol Squadron 741 of NARTU JACKSONVILLE received the Noel Davis trophy, Under Secretary of the Navy, Thomas S. Gates, Jr., paid tribute to their "proficiency and their great example."

The squadron, commanded by Cdr. Charles W. Rogers, was named the best reserve patrol squadron in the Navy. Personnel are all from the Jacksonville area. The trophy is symbolic of their first-place standing.

Secretary Gates reviewed some of the history of VP-741, pointing out that it was one of the first reserve units mobilized when the Korean conflict broke out. He recalled that the squadron had won the Noel Davis trophy in 1949. On active duty in 1952, the squadron received the Battle Efficiency

Pennant in competition with all other Atlantic Fleet patrol squadrons.

"This squadron has demonstrated its proficiency in peace and its proficiency in war," Gates said.

Weekend Warrior First Now Flying Solely in T28B Trojan

Pensacola's Weekend Warrior Squadron, Auxiliary Air Unit 825, claims a first in Naval Aviation: it is the first auxiliary air unit to fly solely in the T-28B Trojan trainer.

The Trojan with its 1425-hp engine is almost a service type aircraft. It climbs readily to an altitude of from 10,000 to 20,000 feet and can descend at approximately 4,000 feet per minute when jet penetration is practiced.

Under its commanding officer, Cdr. Rubin Meierhenry, AAU-825 musters one Sunday each month at NAAS CORRY FIELD for drill and flight training. It is composed of 28 officers, four chiefs and four petty officers.

VA-831 Has Record Check Post-check Turn-around in F9F-7

The Reserve "Weekend Warriors" of VA-831, NAS NEW YORK, are proud of their check crews. During their annual training duty period, the squadron converted from FG's to F9F-7's. Four days after being introduced to the Cougars, a post-check turn-around was made in seven and three-quarter hours.

The first four days of the cruise were devoted to ground school for all hands, followed by two days of servicing and flying the TV. The remainder of the cruise was spent getting acquainted with the new Cougar.



'MARINE of the Month' of MCAS El Toro, MSgt. J. N. Terry and his family were guests of Disneyland as an award. The happy family is shown riding in a teacup during visit.



COL. WILLIAM A. Cloman, CO of MAG-15, MCAS El Toro, welcomes home Maj. V. E. Allen, skipper of VMA-223. The squadron completed 1552 carrier landings during the six-month Pacific cruise on board the Wasp.

Marine Scores High Sets Gunnery Record at El Centro

During training at the Fleet Air Gunnery Unit, NAAS EL CENTRO, 1/Lt. W. P. Hutchins, USMC, completed the F9F-5 air-to-air gunnery course with the record average for the FAGU course of 46.7 per cent hits.

A member of VMF-314, Lt. Hutchins flew a total of 35 gunnery flights, and scored 2288 hits for 4896 rounds fired. His high hop was 95 hits for 117 rounds, or 81.2 per cent, and this is believed to be a record for the F9F-5 at 25,000 ft. under competitive conditions of two runs with four guns loaded. Under competitive rules at 15,000 ft., the Marine made 109 hits for 140 rounds, an average of 77.8 per cent. This is the highest number of hits yet recorded under the new FXP-2 competition rules at FAGU, a definite feather in Hutchins' cap.

Hutchins, a 1953 graduate of the Naval Academy, was a member of the VMF-314 team which participated in the 1956 Fleet Air Gunnery Meet.



MR. GATES CONGRATULATES THE SKIPPER

Award for Ream Field Wins Quarterly Safety Honor

RAdm. W. M. Nation, Commander Naval Air Bases Eleven and Twelve, has commended NAAS REAM FIELD for its safety record. The station boasted the best air safety record in the entire 11th Naval District for the quarter ending 31 September 1956.

During October, Operations handled 15,249 landings and takeoffs, and again there were no aircraft mishaps.



THIS PROUD AJ is again a part of the Navy's air power, thanks to the skill and ingenuity of NAS Norfolk's Overhaul and Repair Dept.



REPAIR AND assembly crew deserves credit for fine job on AJ, (l to r) Masturzo, Ewell, Caraco, Parsons, Everton, Koch, Sawyer, and Roach.

O&R MAKES PLANES GOOD AS NEW

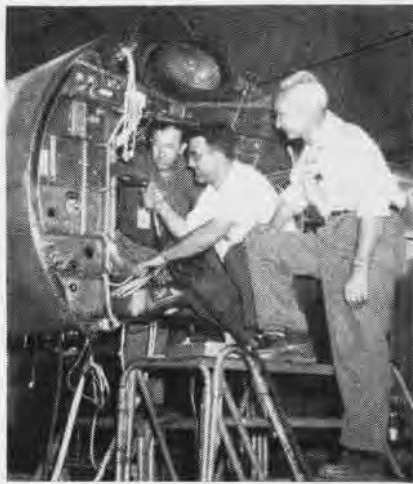


SOME MINOR alterations were necessary to get a perfect fit of the two grafted sections.

THE AJ-1 *Savage*, BuNo 4161, arrived for repairs at NAS NORFOLK, loaded on a flat car, literally in pieces. Its forward half had suffered near strike damage when the port landing gear failed to lock for landing.

But this AJ was badly needed by a fleet squadron about to be deployed.

In an all-out effort to meet this need, O&R people telescoped a year's repair job into seven months. They grafted a nose section from another plane onto 4161, and did it in record time. They synchronized hundreds of parts shared by the two sections. They fitted miles of wiring and tubing. Many hours of work later, the task was done and the AJ joined the fleet, thanks to O&R skill and perseverance.



WALTER KOCH (r) who planned the grafting, watches rewiring of the starboard nacelle.



THIS IS the way the *Savage* looked upon its arrival at Norfolk O&R. The crew escaped injury, but the AJ seemed a wreck beyond repair.



THOUGH THE wing assembly received relatively little damage, the entire wiring system, about seven miles of wire, had to be replaced.

STATIONS HAIL GCA TOTALS

WHEN IT LOOKS as if you can reach up and touch the base of the overcast and the tower operators have to squint to see each other; when the birds decide walking is safer, that's the cue for Ground Control Approach to take over. Many pilots owe their lives to these famed electronic guides. Recently two activities celebrated milestones in the use of GCA.

Out west, at NAAS KINGSVILLE, Texas, GCA Unit 24 completed its 75,000th approach on October 30. The unit includes Air Controlmen, Electronics Technicians, and Enginemen.

The 75,000th approach was made at Site 55 of the unit. NavCad M. J. Zeringue, flying an S2F *Tracker*, had the honor of being the pilot. K. C. Collins, ACAN, was the controller for the ground control approach.

According to LCdr. I. L. Puckett, GCA Officer attached to Operations, 8,703 approaches have been successfully completed within the past six months. These approaches have been done with 70 to 80% normal complement of operators handling the two pieces of equipment located approximately 25 miles apart. LCdr. Puckett also contends that GCA Unit 24 has handled 26% more runs than any other unit in the Navy.

Down east, on November 2, as the 1700-acre installation at Quonset zipped up for the weekend, the GCA unit brought in its 60,000th plane.



A TRACKER MAKES 75,000TH GCA LANDING



K. C. COLLINS, ACAN, OPERATES EQUIPMENT

Quonset's GCA is manned by 15 enlisted men and three officers. LCdr. H. S. Durfee is officer-in-charge.

Back in 1941 East Boston airport and Quonset started experimenting with ways to bring aircraft down in foul weather safely. The standard method by range approach worked in normal weather, but once the elements piled up on him, a pilot had to feel his way in and develop an emergency sixth sense.

What the Navy came up with was Ground Control Approach. Fifty-eight Navy and Marine installations from Port Lyautey, Morocco, to Atsugi, Japan, are programmed to use it.

GCA is an electronic technician's dream—a Martian combo of radar

screens, lights and buttons. It is also one of the engineering feats of our time and a boon to pilots.

The real advantage of GCA is that the operators down on the field know when a pilot is veering off course. They spot him on radar scopes and tell him when he's moving off. Old hands at GCA say that even experienced fliers prefer coming in with GCA in foul weather. At such times, pilots need all the assistance that is available.

GCA units throughout the Navy and Marine Corps are manned by air controllmen, graduates of an eight-week course at Olathe, Kansas. Aircraft carriers have basically the same set-up. These sea-going units are called Carrier Control Approach. There, it is tied in closely with the Combat Intelligence Center.

In 1954, when the 50,000th controlled approach at Quonset was completed, they made it an occasion. Now the men at GCA feel that just reward is the flyer's recognition that they kept him on the beam when going off might have meant death.

Piasecki's New Property Takes over Bellanca in Delaware

Piasecki Aircraft Corporation has acquired the Aviation Division of the Bellanca Corporation and its airport near New Castle, Delaware. It is located in Latitude 39° 39' 45" North and Longitude 75° 15' 30" West and was known as Bellanca Airport.

The name of the airport has now been changed to Piasecki Airport.



CAPT. B. E. CLOSE, QUONSET CO, GIVES ENGRAVED LIGHTERS TO PILOTS AND CONTROLLERS

Aid to Administration Designed for Maintenance Units

Aircraft Maintenance Department officials at NAS NIAGARA have devised a watch quarter and station bill which shows at a glance the assignment and status of every Bluejacket in the department.

The board measures nine feet by four feet by three-eighths inches. Personnel liberty cards divide the board into three sections. The liberty card racks are made of 24ST aluminum with card slats and a plexiglas cover and lock to secure the cards. Paper name tabs of personnel are fitted into metal plates.

The bill shows the name, rate and allowance of department personnel. In addition, emergency stations including



BOARD HAS PROVED HIGHLY SATISFACTORY

fire, rescue salvage, landing force, cleaning and special detail assignments are also plainly marked.

The board facilitates assignments on a rate availability basis.

Mirror May Cut FCL Phase NAAS Barin Tests Use of Indicator

The Mirror Landing System as a means of shortening student pilots' time in completing the Carrier Qualification phase of Basic Training is being tested at Barin Field, Alabama.

Under the old syllabus, fledgling Naval Aviators must make about 75 Field Carrier Landings before they are ready to make their first landing aboard a carrier. Additional training ashore in mirror landings is considered necessary before any shipboard landings can be made with the Optical Glide Path Indicator system.

Successful use of the system pres-

ently undergoing evaluation at Barin Field will appreciably cut this time. Pilot trainees will make a part of their FCL's with the Mirror Landing System instead of under the complete tutelage of a Landing Signal Officer.

Lt. Dale Shover, an LSO at Barin Field, is largely responsible for building and testing the mirror system equipment. Optimistic impressions have been reflected by the pilots who have been "flying the mirror."

HR2S-1W Tested for Navy New Early Warning Helicopter

Under test and development for the Navy, the HR2S-1W was flown for the first time at the Sikorsky Aircraft plant.

The Navy hopes to use the 'copter



HR2S-1W WILL INCREASE RADAR COVERAGE

to extend fleet unit early-warning coverage beyond that of shipboard search radar. In most cases, this type of craft could detect a low-flying enemy plane more than twice as far away as a shipboard radar.

Based aboard an escort carrier or any

ship large enough to accommodate a landing platform, the Sikorsky helicopter could be sent aloft at any time for increased radar coverage.

The forward fuselage section is built around a large, mushroom-shaped radome. It houses the AN/APS-20E radar, developed by General Electric.

New Life at Seaplane Base VP-50 Goes to NAS Whidbey Island

The seaplane base at Whidbey Island has seen very few seaplanes during the past 11 years. In July, the base got a new lease on life with the arrival of VP-50 and its ten P5M *Marlins*.

VP-50 was based at Alameda until its reassignment to Whidbey Island. Its skipper is Cdr. William D. Harrington.

For the past 11 years, the seaplane base may not have hosted many seaplanes, yet it has always been in use. It is the site of the Naval Air Station's administration building, the infirmary, commissary, photo lab, and the transportation department's garage.

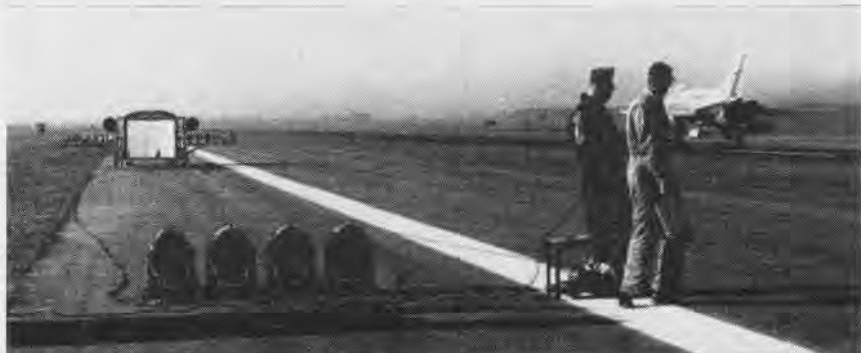
Since the arrival of VP-50, the base is humming with activity. The arrival of the *Marlins* has put the seaplane base back in its own element.

VX-2 Aids Recruiters 'Little Ferdie' to New England

"Little Ferdie," a radio controlled model airplane belonging to VX-2, Chincoteague, Va., was a feature attraction at the Eastern States Exposition in West Springfield, Mass.

Sponsored by the Springfield Navy recruiters, "Little Ferdie" was seen by thousands of people at the fair, and also appeared on TV.

The daily performances of the drone model were the center of attraction at the New England fair.



THIS F4D SKYRAY, of CVG-6, based at NAS Oceana, comes in for a perfect landing as it uses the mirror landing system. The system is now in full operational use at the air station. Watching the three-point landing, accomplished with mirrors, are the LSO and his coordinator.

New System Developed Aid to Air-Ground Communication

Development of an air-to-ground loudspeaker system, capable of being dropped from aircraft at altitudes up to 60,000 feet was described at a National Electronics Conference.

The device is more effective than any existing airborne system. It is designed to deliver a three to five-minute tape recorded message to a ground area during the final phase of its parachute-braked descent.

The system was developed at the Cook Research Laboratories. It consists of a lightweight magnetic tape playback unit, a 500-watt battery-powered audio amplifier and horn assembly, a pressure initiated control system, and a three-stage parachute arrangement.

The loudspeaker system is housed in a three-section, separable, bomb-shaped container. The complete gear is 118 inches long, 18 inches in diameter, and weighs about 850 pounds.

New Contract for T2V-1 More Two-Place Trainers Ordered

The Navy awarded Lockheed a \$70,000,000 contract for the T2V-1 *Sea Star* jet training plane. This order will extend *Sea Star* production through 1958.

Now undergoing test at NATC PATUXENT RIVER, the T2V-1 is scheduled to enter service in January with the Naval Air Training Command.

The *Sea Star*, capable of being used both on carriers and land bases, is in the 600 mph class. "Boundary layer control" is standard equipment.

New Interphone Hook-up A Safety Aid on West Coast

Direct interphone communication between the air control towers at NAS ALAMEDA, NAS MOFFETT FIELD, San Francisco International, and Oakland International airports went into operation in early October.

The system was recommended to CNO by Capt. Frank Turner, as Chief of Staff, Naval Air Bases, 12th Naval District. The new hook-up is designed to eliminate costly delays in arrivals and departures of all aircraft in the San Francisco area.

CAA officials have endorsed this speedy communications system, which will increase safety of air operations in this high-density area.

The material on the opposite page is the first in a series giving approved popular names and identification of military aircraft. It is offered for your ready reference file. Future lists will also be on page 39.

New Propeller Designed Features Hollow Aluminum Blades

Hamilton Standard, division of United Aircraft, has designed a new hollow aluminum aircraft propeller blade.

Under development for six years, the new blade can be made in a variety of sizes. After extrusion, flattening, and twisting, it is partially filled with a cured synthetic sponge compound for additional support. An exterior coating of nickel plate to protect it from erosion and abrasion damage is the final step.

Complete protection from corrosion is given by a new process of anodizing both the internal and external surfaces of the blade. Further protection is given by using a bonding and protective agent before introducing the blade's synthetic sponge filler by using chromates as drying agents in the sponge itself.

Because of the lightweight blades, the propeller hubs can be lighter. The propeller can absorb an enormous amount of horsepower per pound.



MULTIPLE flares signal a warning wave-off to VF-101 pilot during demonstration of new night warning system at Cecil Field. The gear was developed by Lt. M. K. Morris, R. N. Gillette, AOC, members of VF-101.

Temco Awarded Contract To Build Rocket-Propelled Target

Temco Aircraft Corporation was awarded a Navy contract to produce a small, high-performance missile target that "looks" as large as a fighter on radar scopes.

Designed to meet the needs of present-day fleet training and missile evaluation, the rocket-propelled XKDT-1 will be capable of operating at sonic speeds and at altitudes of more than 50,000 feet. The swept-wing craft can be launched from carrier-based aircraft equipped to launch air-to-air missiles.

Containing its own guidance system, and able to maintain a constant course during its more than eight minutes of powered flight, the target will be comparable to present day air-to-air missiles in size and weight.

Terms of the contract call for an extensive test program of the target at NAMTC POINT MUGU, California.

HMR-363 on Thetis Bay Participates in Shakedown Cruise

Helicopters of HMR-363, based at MCAF SANTA ANA, took part in the newly-converted USS *Thetis Bay's* shakedown cruise. It was the first operational squadron to work with the *Thetis Bay* since it was commissioned as a helicopter attack carrier.

The carrier element of HMR-363 was commanded by Maj. F. A. Shook, Jr., and made 331 landings during the cruise. Maj. G. W. Ross is skipper of the squadron.

The ship (CVHA-1) is the only helicopter carrier in naval service at present. Her home port is Long Beach.

Nuclear Powered Carrier Reactor Components Contract Made

Westinghouse Electric Corporation has been awarded a Navy contract to design and furnish reactor compartment components for a nuclear powered aircraft carrier. Equipment to be procured for the Navy under the contract will be purchased by Westinghouse from industrial sources, using competitive bidding as practicable. The nuclear propulsion plant is being developed by the Atomic Energy Commission in cooperation with the Navy.

The aircraft carrier, which will be propelled by eight pressurized water type nuclear reactors, will be in the 1958 fiscal year ship program.



● F-102 Machete ● F-101 Voodoo ● P2V-7 Neptune ● F-104 Starfighter ● F4D Skyray ●

MASTER LIST OF MILITARY AIRCRAFT

NAME	AIR FORCE	ARMY	NAVY	MANUFACTURER	NAME	AIR FORCE	ARMY	NAVY	MANUFACTURER
Airacobra	F-39			Bell	Cornell	PT-19-			
Airacomet	F-59			Bell		23-26			Fairchild
Airarocket	XS-1, 2			Bell	Coronado			PB2Y	Cons. Vultee
Albatross	SA-16		UF-1	Grumman	Corsair			F4U,	
Argus (British)	UC-61		GK	Fairchild				FG,	
Army Mule		H-25		Vertol				F2G,	Chance
Baltimore	A-30			Martin	Cougar			F3A	Vought
Banshee			F2H	McDonnell	Crewmaker	AT-15		F9F-6, 8	Grumman
Bearcat			F8F	Grumman	Crusader			F8U	Boeing
Beaver	L-20	L-20		DeHavilland				F7U	Chance
Bermuda	A-34		SB-2	Brewster	Cutlass				Vought
Bird Dog	L-19	L-19	OE	Cessna					Chance
Black Widow	F-61			Northrop	Dakota (Br.)	C-47-			Vought
Black Hawk	F-87			Curtiss		48-49-53		R4D	Douglas
Bob Cat	AT-17,					A-24		SBD	Douglas
	UC-78,							F3H	McDonnell
	T-50			Cessna	Dauntless				
Bolo	B-18			Douglas	Demon	B-66			
Boston	A-20,				Destroyer	B-23			
	F-70		BD	Douglas	Dragon			J2F	Douglas
Caravan	C-76			Curtiss	Duck	F-75			Grumman
Catalina	OA-10				Eagle				Fisher Body
			PBY,	Cons. Vultee	Excalibur			JR2S	Vought-
Commando	C-46		PFN,	Curtiss	Expeditor	C-45		JRB	Sikorsky
Conestoga	C-93		PB2B	Budd	Fireball			FR	Beech
Constellation	C-69,		R5C	Lockheed	Flying				Ryan
	C-121		RB-1		Schoolroom	T-29			
Constitution			R7V	Lockheed	Fortress	B-17			Convair
			R6V	Lockheed	Forwarder	UC-61		GK	Boeing
									Fairchild

● B-52 Stratofortress ● A4D Skyhawk ● FJ-4 Fury ● F11F-1 Tiger ● A3D Skywarrior ●



LETTERS

SIRS:

Whose blue pencil slipped in the article "Well Done, Big E" in the December 1956 issue of NANews? Two errors in one caption are a new high. Of course, YBOMBS may have been the enemy's secret weapon, but certainly the Battle of the Eastern Solomons took place in 1942, not 1952.

But still the article was well done, and the *Big E* deserved commemoration.

J. CLARK

Falls Church, Va.

¶ In the publication of this article, we came to understand thoroughly how the term "printer's devil" came into being. In the galley and first page proofs, the caption was correct. "YBOMBS" was simply "BOMBS" and the date was 1942.

But we are philosophical, and perhaps two errors in one caption only help us to deserve the praise of one reader who recently wrote in—"You get out a real crazy magazine. Keep up the good work."

SIRS:

I have seen quite a few numbers of the magazine, and wish to congratulate you on the eye-catching and dynamic photos, plus the clever and attractive writeups. The magazine is lively as a lightning flash, and intriguing as tomorrow.

(REV.) JOHN M. SCOTT, S.J.

Prairie du Chien, Wisconsin

SIRS:

While looking through your excellent publication recently, I came upon an item on page 31 of the October issue which stated that logistic support was supplied from Itazuke to Atsugi daily by Marine R5B transports.

Although not wishing to put undue stress on the bonds that bind our brother services, I feel that this misinformation should not go unchallenged. Actually, it is R5D's from VR-23 which make the almost daily run from Atsugi to Itazuke. VR-23 is a part of Fleet Logistic Air Wing Pacific, and furnishes logistic support to Naval units throughout the Far East, both ashore and afloat.

A. HODGEMAN, AD1

¶ Hodgeman, you are right. Our misinformation came from a source here in Washington which shall remain nameless for the same reason as that given in the first sentence of paragraph two of your letter. However, the Marines do fly unscheduled logistic flights in the area, as required by service exigencies, using R4Q's.

SIRS:

On page 29 of NANews, October 1956, there appears an article entitled "Morale High on *Kearsarge*." In the article, the *Kearsarge* posted a "Can You Top This?" record of ten successive sailings without an absentee.

The *Princeton* set a higher record by 22 consecutive sailings without an absentee commencing with sailing from San Diego in January 1956 through its entire WestPac deployment and return to ConUS in August 1956.

W. E. GALLAHER, CAPT.

CO, USS PRINCETON

¶ Makes you wonder what ship has had the most—we can't stop here!

Marlin Lands in River Finds a Haven in Bad Weather

An example of mobile seaplane operations occurred at 0156, October 23, 1956, when a P5M-2 *Marlin* landed on Cape Fear River, near Wilmington, N. C.

Piloted by Lt. J. L. Oglesby of VP-49, the aircraft was returning from a training mission over the Atlantic. The *Marlin's* home base seadrome at Norfolk was closed by heavy clouds. CAA officials notified Oglesby that the south Atlantic Seaboard was almost entirely weathered in.

Flying south, Oglesby found an eight-mile "hole" in the weather over Wilmington, N. C. After notifying the Coast Guard Cutter *Mendota* to clear a section of the Cape Fear river nearby, the P5M-2 put down for a routine landing.

The next day the plane took off from the channel and returned home to its seadrome base at Norfolk.

IFR-IQ?

According to OpNav Air Traffic Control Procedures Section it means: "Ground Controlled Approach System out of service on the 22nd at 1514 Greenwich Meridian Time until further notice." The NOTAM code can be found in Supplementary Flight Information Document, and should be posted at or near the NOTAM file in each Flight Operations Office.

CONTENTS

Naval Aviation 1956.....	1
VP-45	12
McDonnell Aircraft.....	14
USSR Farmer.....	17
Blue Angels	19
Carrier Air Group 15.....	24
Guard Dogs	25
BARTU Tour	26
Skyray Meets Marines.....	30
Britain's Research Aircraft	31
Damage Control Drill.....	32
Airborne Radar Laboratory	33
O&R Makes Planes New....	35
GCA Milestones.....	36
Military Aircraft.....	39

● COVER

Formation of FJ-3 Furies cut through the air over the supercarrier USS *Forrestal* during operations off the coast of Florida.

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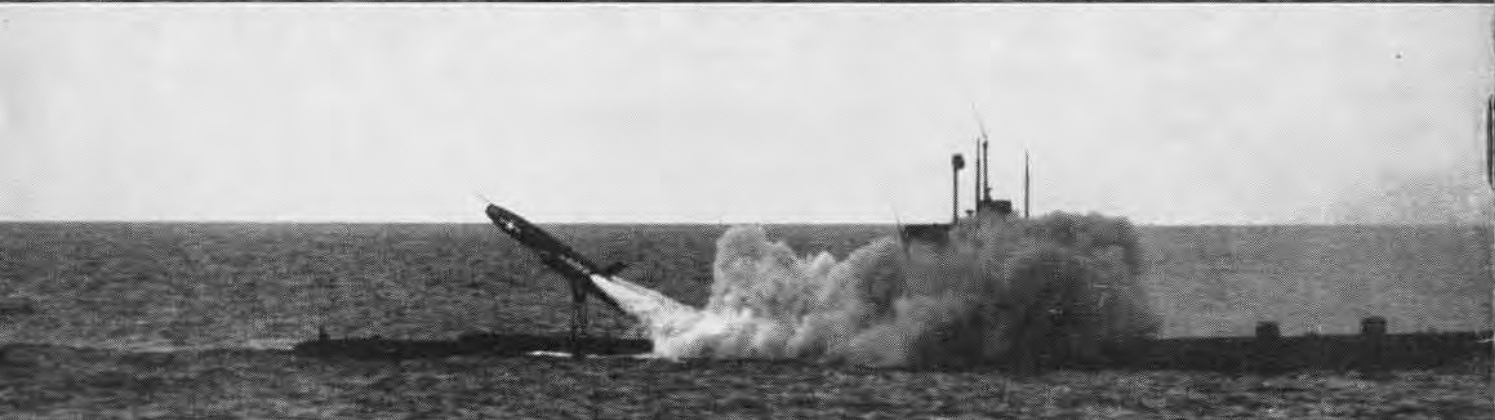
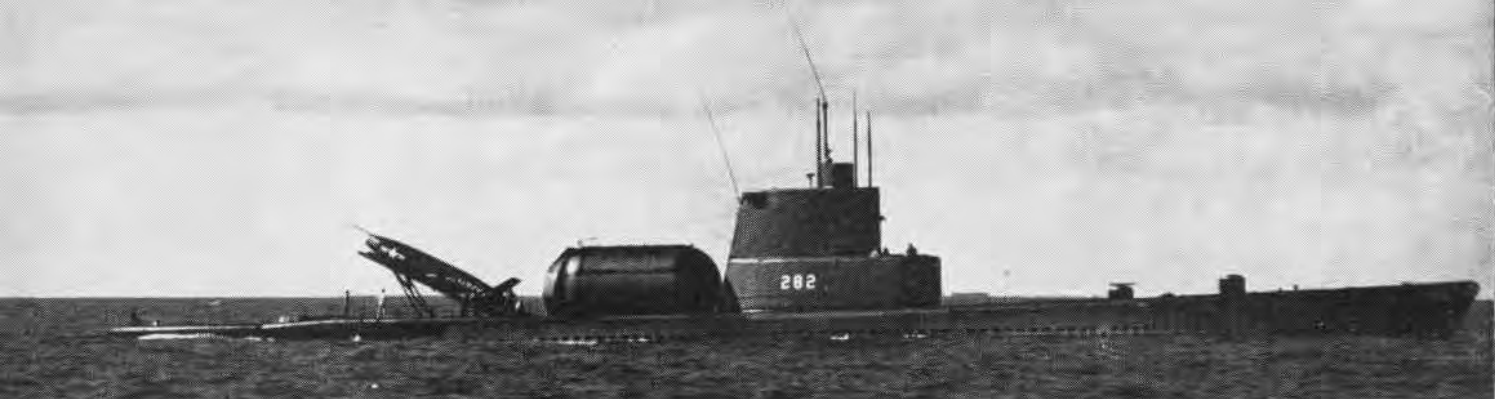
LT. R. E. WALKER, USN

UP IN THE AIR FOR OVER SIX YEARS

Five pilots of VR-1 have each amassed over 10,000 hours at the controls of Navy aircraft. All together, their log books show over 57,000 hours. Cdr. F. R. Chase, with 21 years of service has 10,800; Maj. E. F. White, 27 years, shows 11,900; LCDr. J. M. Panetta, 20 years, 10,500; LCDr. R. M. Hurt, 14 years, 13,300; and Lt. R. E. Walker, 26 years, has 10,500. A little calculation will show that Bob Hurt, the 'boot' of the quintet and the only one not a 'Mustang,' has an almost unbelievable average of almost 100 hours per month during his 14 years of service. This means that nearly one tenth of his service has been at aircraft controls.

Blanco White has flown 82 different types of planes and he, along with Charlie Chase, Joe Panetta and Mickey Walker were Enlisted Naval Aviation Pilots when flying wires and fabric comprised up-to-date aircraft. Around the picture are, starting at the upper left, clockwise, J2F-4, R4D-8, JRM-1, R5D, Caproni Triplane, F3D, PBX-1, F9F-5, AGB-1, TG-1, OSC-1, SU-1, N2C-1, XN3N-1, XF3F-1, R7V-1, XBG-1, F4B-4, SC-1, X2FA-1, SO3C, PBX-5, and an SBD. Each type has been flown by one or more of the five officers. Pilots with over 10,000 hours are not too uncommon, but to find five in one squadron is rather unusual.

DOES YOUR SQUADRON HAVE A STORY TO TELL?



GET OFF TO A FLYING START

NAVAL AVIATION
NEWS



A Regulus guided missile is shown being fired from the submarine USS Tunny. No pilot is aboard the missile, but frequently the missiles are controlled by a chase plane. The best in training is needed for this type of job. Naval Aviators get the best. You may be qualified to start this vital and interesting life. Visit the nearest Naval Air Station or Navy Recruiting office and find out. Prepare yourself to meet the challenge of tomorrow's exciting world.