

The Sixth Decade

1960–1969

The year 1961 marked the golden anniversary of Naval Aviation. It was a year filled with many nostalgic memories of past glories and also a year in which Naval Aviation attained new stature as an effective fighting force. One nuclear-powered and two conventionally powered attack carriers joined the operating forces, perhaps the greatest array of carrier-air might added during peacetime to any fleet in a single year. Before the decade was out, two more attack carriers had been commissioned and another was taking form on the ways. Four new amphibious assault ships, and others built to exploit the unique capabilities of helicopters in vertical assault and replenishment, joined the fleet. New high-performance aircraft went into operation. Vertical and short-takeoff-and-landing aircraft were developed; one went into service. New types of missiles appeared and such old standbys as Sparrows and Sidewinders were given new capabilities. On the other side of the ledger, the blimp and the flying boat, long-familiar figures in Naval Aviation, became victims of the relentless march of technology.

Efforts to conquer space began in earnest as manned orbital flight became a reality and a series of successes culminated in the first manned lunar landing. More than half the nation's astronauts had Navy backgrounds—Naval Aviators made the first American suborbital and orbital flights. Navy flight surgeons joined in the study of physiological effects of space flight. A Navy space surveillance system helped forge the necessary links for a continuous watch on space. Satellites developed by Navy scientists expanded our knowledge of space, and a Navy satellite navigation system gave to all nations an accurate means of traveling the earth's oceans. Carriers or amphibious assault ships, were at sea in both oceans during all orbiting periods to cover an emergency landing, and were always on station to recover the astronauts and their spacecraft upon their return to earth.

Support of the space program was responsible for a number of organizational adjustments within the Navy Department as well as for formation of a Recovery Force command in the fleet. Broader and more basic changes in departmental structure resulted from a

series of high-level studies directed toward clarifying lines of authority and responsibility. The bureau system was abolished, and material support was centralized under a strengthened Material Command placed under direct control of the Chief of Naval Operations. New impetus was given to the project manager concept and other changes radiated outward to the operating forces and the shore establishment.

In other respects, the Navy's traditional role in controlling the sea remained unchanged. Revival of the old technique of naval blockade during the Cuban missile crisis found a modern Navy fully capable of performing it. Operating forces were near at hand to give aid to the stricken when hurricanes, typhoons, and earthquakes struck in widely distant points. The round-the-world cruise of a nuclear-powered task force and operations in the Indian Ocean carried the flag into many foreign ports. Crises in Africa, the Middle East, over Berlin and the threat of war in Caribbean nations, found naval forces ready to evacuate American nationals and by their presence to reaffirm the Navy's role in keeping the peace. In Southeast Asia, the nation responded to aggressive actions with retaliatory air strikes. As retaliation developed into war and the nation's commitment increased, the burden of the Navy's air war was carried by aircraft of the Seventh Fleet. The requirement for sustained naval action and support of operations ashore posed major problems for logistic planners and force commanders alike, as the action became progressively heavier despite repeated attempts to halt the fighting and to settle differences at the conference table.

1960

1 January Electronics Countermeasures Squadrons were redesignated Fleet Air Reconnaissance Squadrons, without change of their VQ letter designation.

15 January The Naval Weather Service Division was transferred from the Office of DCNO (Operations & Readiness) to the staff of the Vice Chief of Naval Operations, and an Office of the U.S. Naval Weather

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Service was set up as a field activity under the management control of the Chief of Naval Operations. The responsibilities of the new office included management control of the integrated Fleet Weather Central system and technical direction of meteorological matters within the shore establishment and the operating forces.

26 January The first of two giant unmanned balloons was launched from *Valley Forge*, at sea south of the Virgin Islands. Almost as high as a 50-story building and with a cubic capacity greater than that of the rigid airship *Akron*, the balloons carried 2,500 pounds, including 800 pounds of emulsion sheets to record cosmic-ray activity. The first balloon achieved an altitude of 116,000 feet and remained aloft 8 hours, while the second reached 113,000 feet and made a flight of



Valley Forge prepares to launch Skyhook balloon 1046721

26½ hours. The balloons were tracked by early warning aircraft from the carrier and shore bases, and the instruments were recovered by a destroyer. The project was under the joint sponsorship of the National Science Foundation (NSF) and the Office of Naval Research (NRL).

25 February A Navy R6D transport, carrying members of the Navy Band and a team of antisubmarine specialists, collided with a Brazilian airliner over Sugar Loaf Mountain, Rio de Janeiro. The accident took the lives of all 26 persons on board the airliner and all but 3 of the 38 Navy men on board the R6D.

29 February The Department of Defense announced that two new developments in airborne mine countermeasures had been successfully demonstrated to Navy and Defense officials by the Navy Mine Defense Laboratory and the Navy Air Mine Defense Development Unit at Panama City, Fla. The first was air-portable minesweeping gear that enabled a helicopter to become a self-sufficient aerial minesweeper; the second was equipment for transferring the minesweeping-gear towline from a surface minesweeper to a helicopter, from one helicopter to another, or from a helicopter to a surface minesweeper.

29 February Navy and Marine Corps personnel from Port Lyautey were flown to the Agadir area of Morocco to aid inhabitants of the city razed by a severe earthquake. Before rescue and relief operations were over, a Navy-wide effort brought food and clothing to the stricken people from Reserve and other units as far away as Seattle, Wash.

1 March A ZPG-3W airship of ZW-1 returned to NAS Lakehurst, N.J., from an Air Defense Command barrier patrol over the North Atlantic after having been on station for 49.3 hours and 58 hours in the air. This new record for continuous patrol more than doubled the best time logged by its predecessor, the smaller ZPG-2W.

18 March On the first firing test of Project Hydra, conducted at Naval Missile Center, Point Mugu, a 150-pound rocket was successfully ignited underwater and launched into the air. The test demonstrated the feasibility of launching rockets while floating upright in the water and gave promise of eliminating the cost of launching pad construction and allowing greater freedom in the choice of launching sites.

25 March In the first launch of a guided missile from a nuclear powered submarine, *Halibut* (SSGN 587), fired a Regulus I during training exercises off Oahu, Hawaii.

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26 March Elements of MAW-1 participating in Exercise Blue Star established an operational jet airstrip on the south shore of Taiwan within 72 hours of the amphibious landing. The 3,400-foot strip was surfaced with expeditionary airfield matting, equipped with MOREST arresting gear, portable TACAN equipment, portable mirror landing system, lower control system, and supported by a portable fuel tank farm. A4D aircraft operated from the strip with the assistance of JATO, and F4Ds and F8Us used afterburners for takeoff.

1 April CVSG-53 and -59, each composed of one HS and two VS squadrons, were established at NAS North Island, Calif. This marked the beginning of a reorganization of antisubmarine aviation which called for the formation of nine CVSGs and for the assignment of an additional replacement CVSG and a patrol squadron in each fleet to perform functions paralleling those being carried out by the previously established replacement carrier air groups.

13 April The navigation satellite Transit 1B was placed into orbit by a Thor-Able-Star rocket launched from Cape Canaveral, Fla. Designed by the Applied Physics Laboratory, the satellite emitted a radio signal at a precise frequency. Surface receiving stations used a measurement of the signal's doppler shift to determine their position with high accuracy. Among other experiments performed in connection with this launch,



Ground antenna for the navigation satellite 1105433

an uninstrumented satellite, mounted pickaback, was successfully separated and placed in its own orbit. Thereby, the feasibility of launching multiple satellites with a single vehicle was demonstrated.

19 April The Secretary of the Navy established the Naval Space Surveillance Facility, Dahlgren, Va.

1 May Seventeen Basic Training Groups of the Naval Air Training Command were redesignated training squadrons (VT) and established as separate units, each under a commanding officer.

3 June Test launchings of Bullpup air-to-surface missiles from a Marine Corps HUS-1 helicopter were successfully completed at Naval Air Test Center, Patuxent River, Md.

10 June Seven helicopters of HS-4 from *Yorktown* rescued 53 merchant seamen from the British freighter *Shun Lee* which was breaking up on Pratas Reef, 500 miles northwest of Manila, Philippines. Under storm conditions in the wake of Typhoon Mary, the helicopter took 25 men from the wreck and 28 more from Pratas Island inside the reef.

21 June *Norfolk* (DL 1), from a position off Key West, Fla., fired an antisubmarine rocket missile (ASROC) in a public demonstration, marking the completion of a two-month technical evaluation. This missile featured a rocket-powered airframe carrying a homing torpedo, or alternatively, a depth charge.

22 June The navigation satellite Transit 2A was placed into orbit by a Thor-Able-Star rocket launched from Cape Canaveral, Fla. A Naval Research Laboratory Sol Rad I (Solar radiation) satellite, mounted pickaback, was also placed in orbit. In addition to further developing the Doppler navigation techniques, Transit 2A confirmed the practicability of using satellites for precise geodetic survey, provided critical measurements of the effect of the ionosphere on electromagnetic waves, and provided measurements of high frequency cosmic noise requested by the Canadian Government. The 2A had an operating life of 2½ years.

1 July The first Carrier On-board Delivery squadron, VRC-40 was established at NAS Norfolk, Commander John H. Crawford commanding.

1 July In a successful demonstration of the operating capabilities of a drone helicopter designed for use in antisubmarine warfare from destroyers, an experimental DSN-1 made an at-sea landing aboard *Mitscher* (DL 2), off the coast of Long Island, N.Y. Although the

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drone was manned by a safety pilot, the helicopter was flown by remote control from shore and maneuvered around the ship and into position for a landing before the pilot took command and made the final let down.

1 July To support the operations of the Pacific Missile Range, Calif., a Pacific Missile Range Facility was established at Eniwetok, Marshall Islands.

9 July *Wasp* sailed from Guantanamo Bay for the coast of Africa to support UN attempts to quiet disorders in the newly independent states of the Congo. By the time of her departure in early August, the carrier had supplied a quarter of a million gallons of gasoline in support of the UN airlift.

18 July The Navy terminated the Corvus air-to-surface missile program in order to permit increased emphasis upon other weapons systems offering a wider scope of employment.

20 July A Polaris ballistic missile was launched for the first time from *George Washington* (SSBN 598) while submerged at sea off Cape Canaveral, Fla. The missile broke clear of the water, ignited in the air and streaked more than 1,000 miles toward its target down the Atlantic Missile Range.

21 July The Navy announced that a contract for the development of the Missileer aircraft for launching the Eagle long-range air-to-air guided missile was being issued to the Douglas Aircraft Corporation.

1 August The Naval Air Rocket Test Station, Lake Denmark, N.J., was disestablished and the land was turned over to the Army for incorporation in Picatinny Arsenal. Navy liquid rocket development projects were transferred to other activities, primarily the Naval Ordnance Test Station, China Lake, Calif.; the Naval Propellant Plant, Indian Head, Md.; and the Naval Weapons Laboratory, Dahlgren, Va.

2 August A Naval Research Laboratory Aerobee rocket, instrumented to study the ultraviolet spectrum of the sun, was launched at the White Sands Missile Range, N. Mex., and soared over 90 miles into the atmosphere. As the rocket returned to earth, its nose cone separated from the main section and was parachuted to the ground.

11 August In the first recovery of an object after it had been in orbit, a Navy HRS-3 helicopter operating from *Haiti Victory* (T-AK-238) off the Pacific Missile

Range, Calif., recovered the instrumented capsule discharged by *Discoverer XIII* on its 17th pass around the earth. The capsule was located about 330 miles northwest of Honolulu, Hawaii, by Air Force planes which directed the ship toward the spot. Recovery was made less than three hours after the capsule hit the water.

2 September Captain Holden C. Richardson, Naval Aviator No. 13, died at Bethesda, Md. A man of many attainments, Captain Richardson was the Navy's first engineering test pilot, helped develop the Navy's first catapults, was one of the designers of the NC boats supervised their construction and piloted one of them on the transatlantic attempt, was a pioneer designer of flying boat hulls, and one of the original members of NACA.

5 September An F4H-1 Phantom II, piloted by Lieutenant Colonel Thomas H. Miller, USMC, set a new world record of 500 kilometers over the triangular course at Edwards AFB, Calif., with a speed of 1,216.78 mph.

19 September The NASA Nuclear Emulsion Recovery Vehicle (NERV) was launched from the Naval Missile Facility, Point Arguello, Calif., by an Argo D-8 rocket. The instrumented capsule reached an altitude of 1,260 miles and landed 1,300 miles down range where it was recovered by Navy ships.

25 September An F4H-1 Phantom II, piloted by Commander John F. Davis, averaged 1,390.21 mph for 100 kilometers over a closed circuit course, bettering the existing world record for the distance by more than 200 mph.

20 October The Department of Defense announced establishment, under Navy management, of an Army-Navy-Air Force program to develop the prototype of an operational vertical takeoff and landing aircraft for the purpose of testing its suitability for air transport service.

10 November The Secretary of Defense directed that the Navy Space Surveillance System and the Air Force Space Track System, each performing similar services over different sections of the surveillance network, be placed under the control of the North American Air Defense Command (NORAD) for military functions.

15 November The Polaris Fleet Ballistic Missile Weapon System became operational as *George Washington* (SSBN 598) departed Charleston, S.C., with a load of 16 A-1 tactical missiles.

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17 November At the request of the threatened countries, President Eisenhower ordered a naval patrol of Central American waters to intercept and prevent any Communist-led invasion of Guatemala and Nicaragua from the sea. The patrol was carried out by a carrier and destroyer force which remained in the area until recalled on 7 December.

13 December An A3J Vigilante piloted by Commander Leroy A. Heath, with Lieutenant Henry L. Monroe as bombardier-navigator, climbed to 91,450.8 feet over Edwards AFB, Calif., while carrying a payload of 1,000 kilograms. This performance established a new world altitude record with payload and surpassed the existing record by over four miles.



Cdr. L. A. Heath and Lt. H. L. Monroe flew A3J to above 91,000 feet NH 69962

19 December Fire broke out on the hangar deck of *Constellation* in the last stages of construction at the New York Naval Shipyard. Fifty civilian workers died in the blaze.

22 December Helicopters of HS-3 and HU-2 from *Valley Forge* rescued 27 men from the oiler SS *Pine Ridge* as she was breaking up in heavy seas 100 miles off Cape Hatteras, N.C.

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31 January A Marine Corps helicopter of HMR(L)-262 made an at sea recovery of a Mercury capsule, bearing the chimpanzee Ham, after it had completed a 15-minute flight reaching 155 miles high and 420 miles down range. The capsule was launched by a Redstone rocket from Cape Canaveral, Fla., in a preliminary test for manned space flight.

1 February The Space Surveillance System, with headquarters at the Naval Weapons Laboratory, Dahlgren, Va., was established, Captain David G. Woosley commanding. By this action, the system which had been functioning as an experimental research project since 1959, became an operational command.

21 February The navigation satellite Transit 3B, carrying Lofti (low frequency transionospheric satellite) pickaback, was put into orbit by a Thor-Able-Star rocket, fired from Cape Canaveral, Fla. Improper burning of the second stage and its failure to separate from the payload prevented achievement of the planned orbital path. Despite this, during the Transit's 39 days in orbit, prototype navigational messages containing ephemerides and time signals were inputted into its memory and reported back thereby providing the first complete demonstration of all features of the navigation satellite system.

6 March The Secretary of Defense established Defense policies and responsibilities for development of satellites, antisatellites, space probes and supporting systems. Each Military Department was authorized "to conduct preliminary research to develop new ways of using space technology to perform its assigned function." Although research, development, test and engineering of Department of Defense space development programs and projects were to be the responsibility of the Air Force, provisions were made for granting exceptions thereby leaving the door ajar to the possibility of the Navy developing a unique space capability.

10 April C-130BL Hercules of VX-6, piloted by Commander Loyd E. Newcomer and carrying a double crew of 16 and a special crew of five, landed at Christchurch, New Zealand, completing the emergency evacuation from Byrd Station, Antarctica, of Leonid Kuperov, a Soviet exchange scientist who was suffering from an acute abdominal condition. The round trip flight out of Christchurch was the first to pierce the winter isolation of the Antarctic Continent.

21 April The Office of the Pacific Missile Range Representative, Kaneohe, Hawaii, was redesignated

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and established as the Pacific Missile Range Facility, Hawaiian Area, to serve as the mid-Pacific headquarters for missile and satellite tracking stations located in the Hawaiian and Central Pacific areas.

29 April *Kitty Hawk*, the first of a new class of attack carriers equipped with Terrier anti-air missiles, was commissioned at Philadelphia, Pa., Naval Shipyard, Captain William F. Bringle commanding.

4 May A world record balloon altitude of 113,739.9 feet was reached in a two-place open gondola Stratolab flight by Commander Malcolm D. Ross and Lieutenant Commander Victor A. Prather (MC). Launched from *Antietam* off the mouth of the

Mississippi, the balloon, which was the largest ever employed on manned flight, reached its maximum altitude 2 hours and 36 minutes after takeoff 136 miles south of Mobile, Ala. This achievement was marred by the death of Lieutenant Commander Prather, who fell from the sling of the recovery helicopter and died on board the carrier about an hour after being pulled from the water.

5 May Commander Alan B. Shepard, Jr., USN, became the first American to go into space as he completed a flight reaching 116 miles high and 302 miles down range from Cape Canaveral, Fla. His space capsule, *Freedom 7*, was launched by a Redstone rocket and recovered at sea by an HUS-1 helicopter of HMR(L)-262 which transported it and Commander Shepard to *Lake Champlain*.



Kitty Hawk, first carriers of new class 1069225

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Shepard's recovery completes first U.S. manned space flight NH69954

17 May An HSS-2 helicopter flown by Commander Patrick L. Sullivan and Lieutenant Beverly W. Witherspoon, set a new world class speed record of 192.9 mph for 3 kilometers at Bradley Field, Windsor Locks, Conn.

24 May Three F4H Phantom II fighters competing for the Bendix Trophy bettered the existing record for transcontinental flight from Los Angeles to New York. The winning team of Lieutenant Richard F. Gordon, pilot, and Lieutenant (jg) Bobbie R. Young, RIO, averaged 870 mph on the 2,421.4 mile flight and set a new record of 2 hours, 47 minutes.

24 May Commander Patrick L. Sullivan and Lieutenant Beverly W. Witherspoon, flying an HSS-2 helicopter set another new world class speed record with a mark of 174.9 mph over a 100-kilometer course between Milford and Westbrook, Conn.

1 June Ships of the Second Fleet, including *Intrepid*, *Shangri-La*, and *Randolph*, were ordered to stand by off southern Hispaniola when a general uprising seemed about to follow the assassination of President Trujillo of the Dominican Republic.

21 June The Secretary of the Navy approved plans for terminating the lighter-than-air program that would disestablish all operational units by November, put eight of the 10 remaining airships in storage and deactivate the Overhaul and Repair shop at Lakehurst, N.J.

29 June The navigation satellite Transit 4A was put into a nearly circular orbit at about 500 miles by a Thor-Able-Star rocket fired from Cape Canaveral. Although Greb and Injun satellites riding pickaback did not separate from each other, both operated satisfactorily. Transit 4A was the first space vehicle to be equipped with a nuclear powered generator.

10 July The first NATOPS (Naval Air Training and Operating Procedures Standardization) Manual was promulgated with the distribution of the HSS-1 manual. This manual prescribed standard operating proce-



Sullivan and Witherspoon NH 69959

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dures and flight instructions which were peculiar to the HSS-1 and complemented the more technical information contained in the HSS-1 Flight Manual (or handbook). As the NATOPS system developed, NATOPS Flight Manuals were issued which consolidated flight and operating instructions with the handbook information, the first being that for the F9F-8T dated 15 December 1963. Further publications included the NATOPS Manual, which contained generalized instructions covering air operations, and other manuals dealing with such subjects as carrier operations, air refueling, instrument flight, and landing signal officer procedures.

18 July The first of a series of 10 unguided rocket launches was made at Naval Missile Center, Point Mugu, Calif., to develop an economical research rocket using a standard booster. Called Sparro-air, the rocket was designed and built at Point Mugu by combining two Sparrow air-to-air missile rocket motors. It was launched from an F4D Skyray to an altitude of 64 miles.

21 July Captain Virgil I. Grissom, USAF, the second American man-in-space, completed a 15 minute, 118 mile high flight 303 miles down the Atlantic Missile Range. Premature blowoff of the hatch cover caused flooding of the capsule and made its recovery impossible, but Grissom was picked up from the water by a second helicopter and delivered safely to *Randolph*.

3 August The Director of Defense Research and Engineering approved revisions to the tri-Service Vertical Take-Off and Landing (VTOL) program whereby administrative responsibility for a tilting wing aircraft (later developed as the XC-142) was transferred from the Navy to the Air Force but with the three services continuing to share the cost equally.

26 August *Iwo Jima* was commissioned at Bremerton, Wash., Captain T. D. Harris commanding. First of the amphibious assault ships to be designed and built as such, the new ship was 602 feet overall, of 17,000 tons standard displacement, and equipped to operate a helicopter squadron and an embarked detachment of Marine combat troops in the "vertical envelopment" concept of amphibious assault.

28 August The Naval Ordnance Test Station, China Lake, Calif., reported on tests of Snakeye I mechanical retardation devices which were being developed to permit low altitude bombing with the MK 80 family of low drag bombs. Four designs of retarders (two made

by Douglas and two by NOTS) had been tested in flight, on the station's rocket powered test sled, or in the wind tunnel. One of Douglas' designs had shown sufficient promise that a contract had been issued for a number of experimental and prototype units.

28 August Lieutenant Hunt Hardisty, pilot, and Lieutenant Earl H. DeEsch, RIO, flew an F4H Phantom II over the 3-kilometer course at Holloman AFB, N. Mex., and averaged 902.769 mph for a new low altitude world speed record.

11 September Task Force 135, commanded by Rear Admiral F. J. Brush, composed of *Shangri-La* and *Antietam*, two destroyers, an attack transport and two fleet tugs, was ordered to the Galveston-Freeport area of Texas for disaster relief operations in the wake of Hurricane Carla.

1 October In response to the call of the president as a result of renewed tension over the divided city of Berlin, units of the Naval Reserve, including five patrol and 13 carrier antisubmarine squadrons of the Naval Air Reserve, reported for active duty.

16 October The Astronautics Operations Division, Op-54, with mission, functions and personnel, was transferred from the Office of DCNO (Air) to Op-76 of the Office of DCNO (Development).

23 October The Polaris A-2 was fired from underwater for the first time as *Ethan Allen* (SSBN 608) fired it 1,500 miles down the Atlantic Missile Range.

31 October Fleet Airship Wing One and ZP-1 and ZP-3, the last operating units of the LTA branch of Naval Aviation, were disestablished at NAS Lakehurst, N.J.

6 November *Antietam* left British Honduras for Pensacola after 4 days of relief operations following hurricane Hattie. Helicopters, from VT-8 and HMR(L)-264, carried over 57 tons of food, water and medical supplies and transported medical and other relief personnel to the people in Belize, Stann Creek and other points hit by the hurricane.

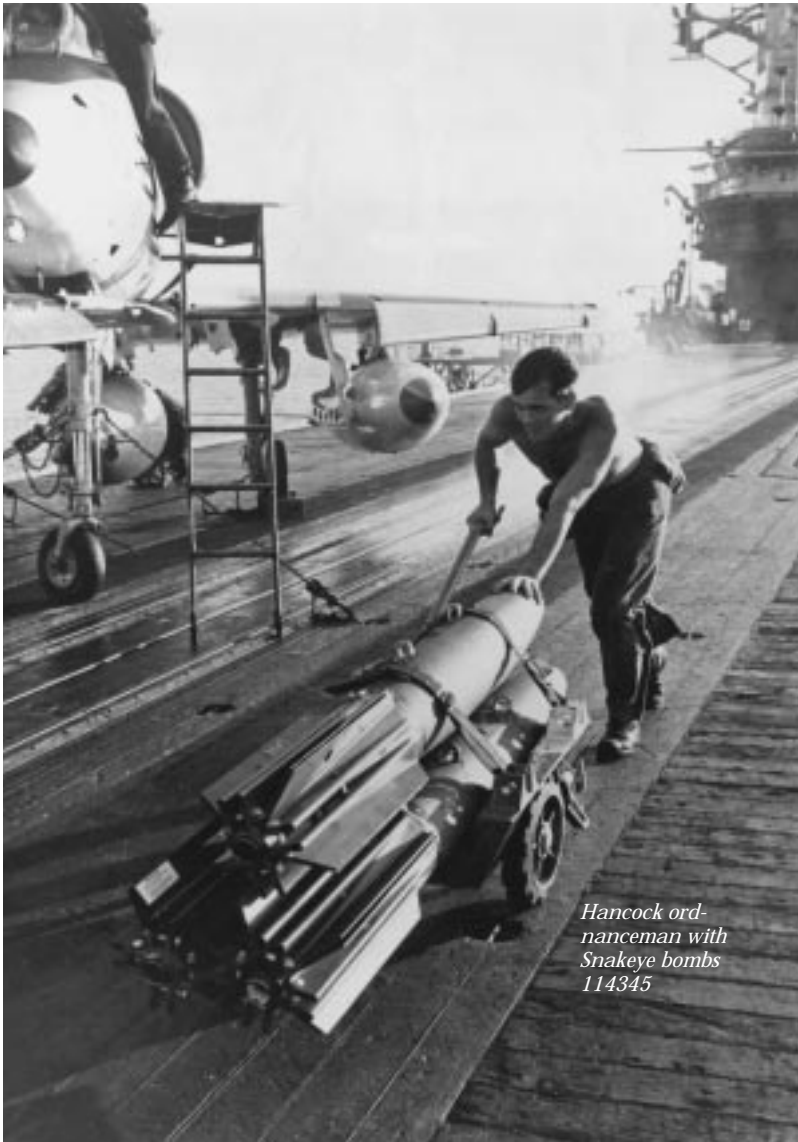
22 November Lieutenant Colonel Robert B. Robinson, USMC, flying an F4H-1 Phantom II, set a world speed record, averaging 1606.3 mph in two runs over the 15 to 25-kilometer course at Edwards AFB, Calif.

25 November The nuclear-powered *Enterprise* was commissioned at Newport News, Va., Captain Vincent P. DePoix commanding.

1961—Continued



*Iwo Jima built
as amphibious
assault ship
NH 69957*



*Hancock ord-
nanceman with
Snakeye bombs
114345*



*Skyburner pilot R. B. Robinson stands alongside F4H
with which he set 1606.3 mph record NH69958*

1961—Continued



Enterprise, first nuclear-powered aircraft carrier, with planes spotted on flight deck 1063056

1 December An HSS-2 helicopter, flown by Captain Bruce K. Lloyd and Commander Don J. Roulstone, laid claim to three new world speed records over a course along Long Island Sound between Milford and Westbrook, Conn., with performances of 182.8 mph, 179.5 mph, and 175.3 mph for 100, 500, and 1,000 kilometers, respectively.

5 December Commander George W. Ellis piloted an F4H Phantom II on another world record, surpassing the existing record for altitude sustained in horizontal flight with a height of 66,443.8 feet over Edwards AFB, Calif.

6 December In a joint Navy-Air Force ceremony, new wings were pinned on America's first astronauts, Commander Alan B. Shepard, Jr., USN, and Captain Virgil I. Grissom, USAF. The new designs displayed a



B. Lloyd and E. Roulstone NH 69961

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shooting star superimposed on the traditional aviator wings of the respective services.

8 December The landing field at NAS Anacostia, Washington, D.C., was closed at 0500 hours, all approach procedures were terminated and air traffic facilities ceased operation. Thus, ended the career of a station unique for the variety of its operations and services, and in terms of continuous operations, the fourth oldest in the U.S. Navy.

14 December Installation of the Pilot Landing Aid Television system (PLAT) was completed on *Coral Sea*, the first carrier to have the system installed for operational use. Designed to provide a video tape of every landing, the system was useful for instructional purposes and in the analysis of landing accidents making it a valuable tool in the promotion of safety. By early 1963, all attack carriers had been equipped with PLAT and plans were underway for its installation in antisubmarine carriers and at shore stations.

30 December An HSS-2 helicopter flown by Commander Patrick L. Sullivan and Captain David A. Spurlock, USMC, at Windsor Locks, Conn., bettered its old three-kilometer world record at 199.01 mph.

1962

1 January Three new Fleet Air Commands were established under Commander, Naval Air Force Atlantic, one with headquarters at Keflavik, Iceland, one at Bermuda and the other in the Azores.

17 January First air operations were conducted by *Enterprise* as Commander George Talley made an arrested landing and catapult launch in an F8U Crusader. Although three TF Traders of VR-40 had taken off from her deck on 30 October 1961 to transport VIPs to the mainland after observing sea trials, Commander Talley's flights marked the start of *Enterprise* fleet operations.

23 January The last of 18 F8U-2N Crusaders VMF(AW)-451, arrived at Atsugi, Japan, from MCAS El Toro, Calif., completing the first transpacific flight by a Marine Corps jet fighter squadron. Stops were made at Kaneohe, Hawaii, Wake Island, and Guam and air refueling was provided by GV-1 tankers. The flight was led by Lieutenant Colonel Charles E. Crew, commanding officer of the squadron.

24 January Two Navy F4H Phantom II fighters, designated F-110A by the Air Force, arrived at Langley AFB, Va., for use in orientation courses preliminary to the assignment of Phantom's to units of the Air Force Tactical Air Command.

26 January To overcome deficiencies disclosed during operation of ships equipped with surface-to-air missiles, the Chief of the Bureau of Naval Weapons designated an Assistant Chief for Surface Missile Systems who was to head a special task force and direct all aspects of surface missiles within the Bureau and to act with the Chief of Naval Personnel and the Bureau of Ships on matters involving these Bureaus.

5 February An HSS-2 Sea King became the first helicopter to exceed 200 mph in an officially sanctioned trial. Piloted by Lieutenant R. W. Crafton, USN, and Captain Louis K. Keck, USMC, over a course along the Connecticut shore from Milford to New Haven, the antisubmarine helicopter broke the world record for 15 to 25 kilometers with a speed of 210.65 mph.



L. K. Keck and R.W. Crafton NH69960

1962—Continued

8 February A detachment of VP-11 at NAS Argentia, New Foundland, began ice reconnaissance flights over the Gulf of St. Lawrence to aid in evaluating satellite readings of ice formations transmitted by Tiros 4 which was put into orbit the same day.

20 February Lieutenant Colonel John H. Glenn, USMC, in Mercury spacecraft *Friendship 7*, was launched from Cape Canaveral, Fla., by an Atlas rocket. His three turns about the earth were the first U.S. manned orbital flights. He was recovered some 166 miles east of Grand Turk Island in the Bahamas by *Noa* (DD 841) and then delivered by helicopter to *Randolph*.



Glenn begins orbital flight NASA62MA6-112

Navy men on first astronaut team:



Shepard (NH69953)



Glenn (NH69952)



Carpenter (NH69951)



Schirra made six orbits NASA62MA7-24

1962—Continued

21 February The F4H-1 Phantom II established new world records for climb to 3,000 and 6,000 meters with times of 34.52 and 48.78 seconds. Lieutenant Commander John W. Young and Commander David M. Longton piloted the plane on its respective record flights at NAS Brunswick, Maine.

1 March New world climb records to 9,000 and 12,000 meters were established at NAS Brunswick, Maine, when an F4H-1 piloted by Lieutenant Colonel William C. McGraw, USMC, reached those altitudes from a standing start in 61.62 and 77.15 seconds, respectively.



McGraw, Longton, Nordberg and Young set five F4H time-to-climb records at NAS Brunswick 711031

3 March The F4H-1 continued its assault on time-to-climb records at NAS Brunswick, Maine, as Lieutenant Commander Del W. Nordberg piloted the Phantom II to an altitude of 15,000 meters in 114.54 seconds.

31 March Lieutenant Commander F. Taylor Brown piloted the F4H-1 Phantom II at NAS Point Mugu, Calif., to a new world time-to-climb record for 20,000 meters with a time of 178.5 seconds.

3 April Lieutenant Commander John W. Young piloted the F4H-1 to its seventh world time-to-climb record by reaching 25,000 meters in 230.44 seconds at NAS Point Mugu, Calif.



F4H-1 completed time-to-climb record sweep in project high jump 1143454

1962—Continued

12 April The F4H-1 made a clean sweep of world time-to-climb records as Lieutenant Commander Del W. Nordberg piloted a Phantom II at Point Mugu, Calif., on a climb to 30,000 meters in 371.43 seconds. Speed attained was better than 3 miles per minute, straight up.

30 April The Naval Air Research and Development Activities Command was disestablished and responsibility for overall management and coordination of the aeronautical research and development activities in the Third and Fourth Naval Districts was returned to the Bureau of Naval Weapons.

10 May A Sparrow III fired from an F4H-1 scored a direct hit in a head-on attack on a Regulus II missile while both were at supersonic speed. The interception, made in the test range of the Naval Air Missile Center at Point Mugu, Calif., was the first successful head-on attack made by an air-launched weapon on a surface launched guided missile.

22 May The Navy's first space satellite command, the Navy Astronautics Group, was established at the Pacific Missile Range Headquarters, Point Mugu, Calif., under command of Commander James C. Quillen, Jr. In addition to its other duties, the new command was given responsibility for operating the Transit Navigational System being developed by the Navy for the Department of Defense.

24 May Lieutenant Commander M. Scott Carpenter in *Aurora 7* was launched into orbit from Cape Canaveral, Fla., on the second U.S. manned orbital flight. Upon completing three orbits he returned to earth, landing in the Atlantic 200 miles beyond the planned impact area. He was located by a Navy P2V, assisted by para-rescue men, dropped from an Air Force RC-54 and, after almost three hours in the water, picked up by an HSS helicopter from *Intrepid* and returned safely to the carrier. His capsule was retrieved by *John R. Pierce* (DD 753).

29 May Vice Admiral Patrick N. L. Bellinger, USN (Ret.), died in Clifton Forge, Va. His long and distinguished career as Naval Aviator No. 8 began on 26 November 1912 when he reported for flight training at Annapolis, Md., and ended with his retirement 1 October 1947 while serving on the General Board. As one of the pioneers in Naval Aviation, he conducted many experiments, scored a number of "firsts" and made several record flights.

1 June The final report on the titanium alloy sheet rolling program was issued by the Materials Advisory Board of the National Research Council, thereby terminating this program as a formally organized effort. Achievements of the program during the six years included acquiring metallurgical and engineering data for a number of titanium alloys and familiarizing the aerospace industry with their properties and methods of fabrication. High strength, heat-treated sheet alloys developed under this program were soon utilized in a number of aircraft including the A-7, later models of the F-4, the Air Force SR-71 and in deep submergence vehicles used in oceanographic research. The success of this effort also led to the establishment of a similar refractory metal sheet rolling program to develop metals for use at extremely high temperatures.



A-7 attack plane carries bombs and missiles NH69970

26 June The 1,500-mile-range Polaris A-2 missile became operational as *Ethan Allan* (SSBN 608) departed Charleston, S.C. carrying 16 of the A-2 missiles.

29 June A Polaris missile was fired 1,400 miles down range from Cape Canaveral, Fla., carrying the new bullet-nose shape to be used in the A-3 advanced Polaris. The first flight model of the A-3 was successfully fired from the same base on 7 August 1962.

1 July The commands Fleet Air Patuxent and Naval Air Bases, Potomac River Naval Command were established and assigned as additional duty to Commander Naval Air Test Center, Patuxent River, Md.

1 August Squadrons of the Naval Air Reserve that had been called up in October 1961, were released to inactive duty, reducing the strength of the naval air operating forces by 18 squadrons and 3,995 officers and men.

1962—Continued

31 August The passing of an era was marked at NAS Lakehurst, N.J., by the last flight of a Navy airship. The flight also marked the end of a year's service by the two airships kept in operation after the discontinuance of the lighter-than-air program for use as airborne aerodynamics and research laboratories in the development of VTOL/STOL aircraft and ASW search systems. Pilots on the last flight were Commanders Walter D. Ashe and Robert Shannon and the passengers included lighter-than-air stalwarts Vice Admiral Charles E. Rosendahl, USN (Ret.), and Captain Fred N. Klein, USN (Ret.). Many lighter-than-air men from many parts of the country were on hand to observe and to lend a hand in docking the airship after its last flight. This ended a 45-year LTA saga that began with the DN-1, the Navy's first airship.

12 September A Grumman Albatross, UF-2G, piloted by Lieutenant Commander Donald E. Moore, climbed to 29,460 feet over Floyd Bennett Field, N.Y., and set a new world altitude record for amphibians carrying a 1,000 kilogram load. On the same day, Lieutenant Commander Fred A. W. Franke, Jr., piloted the Albatross to a new record for amphibians with a 2,000 kilogram load with a climb to 27,380 feet.

15 September Lieutenant Commander Richard A. Hoffman, piloting a Grumman Albatross, UF-2G, set a new world 5,000 kilometer speed record for amphibians carrying a 1,000 kilogram load with a speed of 151.4 mph on a course from Floyd Bennett Field to Plattsburgh, N.Y., to Dupree, S. Dak., and return to Floyd Bennett Field, N.Y.

17 September Nine pilots selected to join the nation's astronauts were introduced to the public at Houston, Tex. The three Navy men on the new team were: Lieutenant Commander James A. Lovell, Jr., Lieutenant Commander John W. Young, and Lieutenant Charles Conrad, Jr.

18 September A joint Army-Navy-Air Force regulation was issued establishing a uniform system of designating military aircraft similar to that previously in use by the Air Force. By it, all existing aircraft were redesignated using a letter, dash, number, and letter to indicate in that order, the basic mission or type of aircraft, its place in the series of that type, and its place in the series of changes in its basic design. Under the system, the Crusader, formerly designated F8U-2, became the F-8C indicating the third change (C) in the eighth (8) of the fighter (F) series. Provision was also made for indicating status of the aircraft and modifica-

tions of its basic mission by prefix letters. Thus the YF8U-1P became the YRF-8A symbolizing a prototype (Y) of the photoreconnaissance (R) modification of the F-8A aircraft.

3 October *Sigma 7*, piloted by Commander Walter M. Schirra, USN, was launched into orbit by a Mercury-Atlas rocket from Cape Canaveral, Fla., and after nearly six orbits and a flight of over 160,000 miles, landed in the Pacific, 275 miles northeast of Midway Island. Helicopters dropped UDT men near the capsule and it and Commander Schirra were hoisted aboard *Kearsarge*.



Schirra emerges from Mercury 8 on recovery ship Kearsarge NH69950



Response to space stimuli is studied 110522

1962—Continued

8 October To strengthen the air defense of the southeastern United States, VF-41, equipped with F-4B Phantoms, was transferred from NAS Oceana, Va., to NAS Key West, Fla., for duty with the U.S. Air Force in the North American Air Defense Command (NORAD).

16 October The Chief of Naval Operations directed that a few helicopters be converted to aerial minesweepers for use in a mine countermeasures development and training program and eventual assignment to fleet squadrons. The RH-46A (HRB-1) was initially designated for this conversion but the RH-3A (HSS-2) was later substituted.

17 October VMA-225 completed a two-way crossing of the Atlantic between MCAS Cherry Point, N.C., and NS Rota, Spain. Lieutenant Colonel Edwin A. Harper, USMC, led the flight of 16 A-4C Skyhawks (A4D) which left Cherry Point on the 8th, flew to Bermuda and directly to Rota. After a brief layover, the flight returned to Cherry Point by way of Lajes in the Azores and Bermuda. Refueling on both east and west flights was provided by 10 Marine KC-130F Hercules tankers of VMGR-252.

19 October As operational units began moving to patrol stations in Florida to counter the threat posed by missiles and bombers in Cuba, all aircraft and squadrons not required for air defense, reconnaissance and antisubmarine patrol were relocated to prevent overcrowding.

23 October VFP-62, which had been flying photo reconnaissance over the missile sites in Cuba since the 15th, flew the first low-level photo mission over Cuban territory. For its outstanding accomplishment during this crisis, in the period 15 October-26 November 1962, this squadron was awarded the Navy Unit Commendation which was presented personally by the president on 26 November 1962.

24 October As the president imposed a blockade of Cuba which he had announced in his TV broadcast two days earlier, ships of the blockading force were in position at sea, *Enterprise*, *Independence*, *Essex* and *Randolph*, and shore-based aircraft were in the air, patrolling their assigned sectors. On the same day the service tours of all officers and enlisted men were extended indefinitely.

31 October The geodetic satellite Anna, developed for the Department of Defense under Bureau of Naval Weapons management, was placed into orbit from Cape Canaveral, Fla. The Anna satellite contained

three independent sets of instrumentation to validate geodetic measurements taken by several organizations participating in the Anna worldwide geodetic research and mapping program.

5 November Two Marine Corps helicopter squadrons began, as additional duty, a transition training program in which some 500 Marine aviators qualified in fixed-wing aircraft would be trained to operate helicopters. The need for the special program arose from the increased proportion of helicopters in the Marine Corps, coupled with an overall shortage of pilots and the inability of the Naval Air Training Command to absorb the additional training load within the time schedule allotted.

20 November As agreement was reached over the removal of missiles and bombers from Cuba, the naval blockade was discontinued and the ships at sea resumed their normal operations. Next day, the extensions of service ordered in October were cancelled.

30 November The Bureau of Naval Weapons issued a contract to the Bell Aerosystems Co., for construction and flight test of two VTOL research aircraft with dual tandem-ducted propellers. Thereby the tri-service VTOL program was expanded to include a tilting duct craft to be developed under Navy administration in addition to the tilting wing XC-142 and the tilting engine X-19A both of which were administered by the Air Force.

1 December Two new commands, Fleet Air Caribbean and Naval Air Bases, Tenth Naval District, were established and assigned as additional duty to Commander, Caribbean Sea Frontier.

14 December The Naval Air Material Center at NAS Lakehurst, N.J., was renamed Naval Air Engineering Center.

18 December Transit 5A, a prototype of the Navy's operational navigation satellite, was launched into a polar orbit by a four-stage Blue Scout rocket fired at the Naval Missile Facility, Point Arguello, Calif. The satellite's radio failed after 20 hours in orbit and prevented its utilization for navigation purposes. However, certain secondary experiments were successful.

19 December An E-2A piloted by Lieutenant Commander Lee M. Ramsey was catapulted off *Enterprise* in the first shipboard test of nose-tow gear designed to replace the catapult bridle and reduce launching intervals. Minutes later the second nose-tow launch was made by an A-6A.



E-2A is used for early warning and to control tactical aircraft 1143451

1963

7-13 January Helicopters from NAS Port Lyautey, Morocco, NS Rota, Spain and *Springfield* (CLG 7) flew rescue and relief missions in the flooded areas of Beth and Sebou Rivers in Morocco. Over 45,000 pounds of food, medicines and emergency supplies were flown in and some 320 marooned persons were lifted to safety.

29 January A Walleye television glide bomb, released from a YA-4B, made a direct impact on its target at the Naval Ordnance Test Station, China Lake, Calif., in the first demonstration of its automatic homing feature.

9 February The Secretary of the Navy approved with minor modification the recommendations of his Advisory Committee on the Review of the Management of the Department of the Navy, commonly known as the Dillon Board for its chairman John H. Dillon. With this approval, he set into motion a series of changes in lines of authority and responsibility that would be implemented during the year, most of which were outlined in a General Order issued on 1 July 1963.

22 February An LC-130F Hercules of VX-6 made the longest flight in Antarctic history covering territory



Walleye, a missile that sees 1112651

1963—Continued

never before seen by man. The plane which was piloted by Commander William H. Everett and carried Rear Admiral James R. Reedy among its passengers, made the 3,470 mile flight from McMurdo Station, south beyond the South Pole to the Shackleton Mountain Range and then southeastward to the pole of inaccessibility and returned to McMurdo in 10 hours and 40 minutes.

25 February The transmitter in the Navy-developed Solar Radiation I satellite was restarted after 22 months of silence. Launched 22 June 1960 with Transit 2A in the first of the pickaback firings, the 42-pound satellite provided detailed data on solar storms for eight months and was turned off on signal from earth on 18 April 1961 when magnetic drag reduced the satellite's spin to a level too low for useful scanning of the sun.

8 March The Department of Defense and National Aeronautics and Space Administration (NASA) announced an agreement establishing working arrangements concerning the nonmilitary applications of the Transit navigation satellite system. Under it NASA assumed responsibility for determining the suitability of Transit equipment for nonmilitary purposes, while the Navy retained its responsibility for overall technical direction and for research and development as necessary to meet and support military requirements.

1 April To bring their title in line with their functions, Replacement Air Groups (RAG) were redesignated Combat Readiness Air Groups (CRAG).

8 May The Air Force announced that two squadrons of A-1E Skyraiders would be added to the 1st Air Commando Group at Hurlburt AFB, Fla. This decision followed field tests of two Skyraiders loaned by the Navy in mid-1962 and led to a further decision, announced by the Secretary of the Air Force in May 1964, that 75 Skyraiders would be sent to Vietnam as replacements for B-26 and T-28 aircraft employed there by the 1st Air Commando Wing.

16 May *Kearsage* recovered Major L. Gordon Cooper, USAF, and his *Faith 7* capsule, 80 miles southeast of Midway, after his 22-orbit flight.

13 June Lieutenant Commanders Randall K. Billings and Robert S. Chew, Jr., of NATC Patuxent River, Md., piloting an F-4A Phantom II and an F-8D Crusader aircraft, made the first fully automatic carrier landings with production equipment on board *Midway* off the California coast. The landings, made "hands off" with

both flight controls and throttles operated automatically by signals from the ship, highlighted almost 10 years of research and development and followed by almost 6 years the first such carrier landing made with test equipment.

20 June The last student training flight in the P-5 Marlin by VT-31 at NAS Corpus Christi, Tex., marked the end of the seaplane in the flight training program. The pilot and instructor was Lieutenant Phillip H. Flood; the student was Ensign Arnold J. Hupp.

29 June FAW-10 was established at NAS Moffett Field, Calif., Captain John B. Honan commanding.

1 July General Order No. 5 set forth new policies and principles governing the organization and administration of the Navy and directed their progressive implementation. It redefined the principal parts of the Navy, adding a Naval Military Support Establishment as a fourth part under a Chief of Naval Material, responsible directly to the Secretary of the Navy and with command responsibilities over the four material bureaus and major project managers and an overall task of providing material support to the operating forces of the Fleet and the Marine Corps.

1 August VMF (AW) squadrons equipped with F-4B aircraft were redesignated VMFA squadrons.

2 August Shortly after midnight, an F-3B Demon piloted by Lieutenant Roger Bellnap, launched the first of a series of five planned space probes designed to measure the ultraviolet radiation of the stars. The probe, a two-stage solid-propellant Sparroair, was launched from a nearly vertical altitude at 30,000 feet over the Pacific Missile Range and reached a peak altitude of 66 miles.

23-24 August In a joint Weather Bureau-Navy project titled Stormfury, a Navy A-3B Skywarrior piloted by Commander John F. Barlow of VAH-11 seeded Hurricane Beulah with silver iodide particles in an experiment to determine whether the energy patterns of large storms could be changed. Although the second day seedings appeared to have some effect, results were considered too indefinite to draw firm conclusions.

6 September Five SH-3A helicopters of HS-9 based at NAS Quonset Point, R.I., rescued 28 workmen from two Texas Towers oilwell platforms shaken by gales and heavy seas off Cape Cod, Mass.

18 September To provide the continuing action necessary for effective management of the inactive air-

1963—Continued

craft inventory, an informal Review Board was established with representation from CNO, the Bureau of Naval Weapons, the Aviation Supply Office, and the storage facility at Litchfield Park, Arizona, to review the inventory at least every six months for the purpose of recommending the retention or disposal of specific models.

18 October The selection of 14 men for a new astronautic team was announced by NASA. Among those chosen were five naval aviators: Lieutenant Commander Richard F. Gordon, Jr., Lieutenant Commander Roger B. Chaffee, Lieutenant Alan L. Bean, Lieutenant Eugene A. Cernan, and Captain Clifton C. Williams, USMC.

25 October Navy ships and aircraft began departing from Port-au-Prince after nearly two weeks of relief operations in Haiti, laid waste by Hurricane Flora. Four Navy ships, including the carrier *Lake Champlain* and the amphibious assault ship *Thetis Bay*, aided by Navy and Marine Corps cargo aircraft from east coast stations, delivered nearly 375 tons of food, clothing and medical supplies donated by relief agencies, and provided other assistance to the stricken populace.

26 October The long range A-3 Polaris missile was launched for the first time from *Andrew Jackson* (SSBN 619), a submerged submarine, cruising about 30 miles off Cape Canaveral, Fla.

8 November During 8, 21 and 22 November, Lieutenant James H. Flatley III, and his crew members, Lieutenant Commander Smokey Stovall and ADJ1 Ed Brennan, made 21 full-stop landings and takeoffs in a C-130F Hercules on board *Forrestal*. From this test the Navy concluded that the C-130 could carry 25,000 pounds of cargo and personnel 2,500 miles and land on a carrier. However, the C-130 was considered too risky for use in routine COD operations.

30 November The Secretary of Defense approved use of funds effective 1 July 1964, for the purpose of placing Naval Aviation Observers in the same pay status as pilots.

2 December The Chief of Naval Material reported to the Secretary of the Navy for duty as his assistant for Naval Material Support and assumed supervision and command of the four material bureaus—Naval Weapons, Ships, Supplies and Accounts, and Yards and Docks.

6 December Transit 5BN-2 was launched into polar orbit by a Thor-Able-Star rocket from Vandenberg AFB, Calif. This, the first navigation satellite to become operational, provided data for use by surface and submarine forces.

20 December Carrier Air Groups (CVG), were redesignated Carrier Air Wings (CVW).

21 December *Saratoga* began receiving weather pictures from the Tiros 8 weather satellite while moored at Mayport, Fla. This was the start of an operational investigation of shipborne readout equipment in which *Saratoga* continued to receive test readings from Tiros, in port and at sea, through May 1964 and from the experimental weather satellite Nimbus in September 1964.

1964

1 January Fleet Air Wings, Pacific was established with Rear Admiral David J. Welsh in command.

1 January The last three seaplane tenders under Commander, Naval Air, Atlantic (COMNAVAIRLANT), *Duxbury Bay*, *Greenwich Bay* and *Valcour*, were transferred to Cruiser-Destroyer Force Atlantic. Although the employment of these ships as seaplane tenders had been secondary to their use as flagships for Commander, Middle East Force, for several years, this transfer was the final step in the phaseout of patrol seaplanes in the Atlantic Fleet.

15 January The commands Fleet Air Southwest Pacific and Fleet Air Japan were disestablished.

15 January Carrier Divisions 15, 17, and 19 were designated Antisubmarine Warfare Groups 1, 3, and 5 respectively and transferred from Commander, Naval Air, Pacific (COMNAVAIRPAC) to Commander, Antisubmarine Warfare Force, Pacific (COMASWFORPAC) for administrative control. Mission of the new groups was to develop antisubmarine carrier group tactics, doctrine and operating procedures including coordination with patrol aircraft operations.

17 February An Office of Antisubmarine Warfare Programs was established under the Chief of Naval Operations to exercise centralized supervision and coordination of all antisubmarine warfare planning, programming and appraising.

28 February A helicopter piloted by Commander Dale W. Fisher of HU-1 made the first landing on the deck of the combat store ship *Mars* (AFS 1) during her

1964—Continued

shakedown cruise off San Diego. Although the concept of vertical replenishment at sea had been discussed and tested as early as 1959 and helicopter platforms had been installed on certain logistics ships since then, commissioning of *Mars* provided the first real opportunity to incorporate the helicopter into the fleet logistic support system.

9 March A ceremony was held at the David Taylor Model Basin Aerodynamics Laboratory commemorating the 50th anniversary of its establishment. Originally set up at the Washington Navy Yard, the Laboratory was moved to its present location at Carderock, Md., in 1944. Captain Walter S. Diehl, USN (Ret.), an aerodynamics authority of world repute, attended the ceremony and received a citation for his outstanding contributions to the work of the Laboratory.

13 March Instructions were issued to redesignate all Heavy Attack Squadrons, VAH, upon assignment of RA-5C aircraft, as Reconnaissance Attack Squadrons, RVAH.

23 March Two Marine helicopter crews of VMO-1 rescued 11 sick, injured and wounded members of a road engineering party that had survived attacks by hostile Indians in the dense jungle of the Amazon basin near Iquitos, Peru. Their helicopters were transferred ashore in the Canal Zone from *Guadalcanal* and were airlifted to Iquitos by a U.S. Air Force C-130.

28 March Within five hours after a devastating earthquake struck in Alaska, the seaplane tender

Salisbury Sound was underway from NAS Whidbey Island, Wash., to render assistance and P-3A Orions and C-54 Skymasters, moving up from Moffett Field, Calif., were en route with emergency supplies. For 14 days the ship provided power and heat to the severely damaged Naval Station at Kodiak while its crew served in many capacities to help people on shore.

1 April The last of 15 astronauts completed a helicopter flight familiarization program at Ellyson Field, as a phase of their training for lunar landings. The training was designed to simulate the operation of the Lunar Excursion Module of Project Apollo. Instituted by the Navy at the request of NASA, the program was scheduled in a series of two-week courses for two students and had been in progress since 12 November 1963.

4 April Commanded by Rear Admiral Robert B. Moore, the Concord Squadron composed of *Bon Homme Richard*, *Shelton* (DD 790), *Blue* (DD 744), *Frank Knox* (DD 742), and fleet oiler *Hassayampa* (AO 145) of Seventh Fleet, entered the Indian Ocean from the Pacific and began a six-week cruise which carried it near Iran, the Arabian peninsula, down the African Coast and into many ports along the way for goodwill visits.

23 April The Chief of Naval Operations broadened the opportunities for Naval Aviators to qualify as helicopter pilots by extending responsibilities for transition training to commands outside the Flight Training Command.

1 May A P-3A Orion, commanded by Captain Paul L. Ruehrmund of VX-1, returned to NAS Key West,



P-3, newest antisubmarine patrol aircraft NH 69967

1964—Continued

Fla., completing an 18-day, 26,550 nautical mile flight which, in several stages, carried it around the world. On the over-water leg of the flight, the plane dropped explosive sound signals to assist Naval Ordnance Laboratory scientists studying the acoustical properties of the sea as a medium for sound transmission over long distances.

7 May The Chief of Naval Operations informed the Chief of Naval Personnel of an agreement by which the U.S. Air Force and U.S. Coast Guard would train Navy pilots in the techniques of operating HU-16 seaplanes in Search and Rescue and requested its implementation.

24 June PHC Clara B. Johnson of VU-7 was designated an aerial photographer and became the first WAVE with the right to wear the wings of an aircrewman.

26 June An LC-130F Hercules, commanded by Lieutenant Robert V. Mayer of VX-6, completed a round-trip flight from Christchurch, New Zealand, to Antarctica in an emergency evacuation of Petty Officer B. L. McMullen, critically injured in a fall. Two planes, with teams of medical specialists on board, flew from NAS Quonset Point, R.I., to Christchurch where one plane stood by while the other undertook the hazardous flight.

29 June A new specification for the color of naval aircraft was issued which changed the color scheme for patrol aircraft assigned to antisubmarine work to gull gray with white upper fuselage.

1 July The Pacific Missile Range facilities at Point Arguello, Calif., and on Kwajalein Atoll were transferred from Navy to Air Force and Army command, respectively.

2 August North Vietnam motor torpedo boats that attacked *Maddox* (DD 731) patrolling international waters in the Gulf of Tonkin, were damaged and driven off by ships gunfire and rocket and strafing attacks by aircraft from *Ticonderoga*.

5 August On orders from the president to take offensive action toward preserving our right to operate in international waters, aircraft from Seventh Fleet carriers *Constellation* and *Ticonderoga* attacked motor torpedo boats and their supporting facilities at five locations along the North Vietnam coast. In 64 attack sorties against the concentrations, these aircraft sank

or seriously damaged 25 boats and destroyed a major part of their petroleum stores and storage facilities.

15 August The president announced existence of a program to develop a counterinsurgency (COIN) airplane designed to perform a variety of missions in peace and war. The Navy Department, as the designated Department of Defense development agency, selected North American Aviation Co., as the contractor for construction of the prototype, later assigned for designation OV-10A and the name Bronco.

29 August *Boxer* and two LSDs arrived off the coast of Hispaniola to give medical aid and helicopter evacuation services to people in areas of Haiti and the Dominican Republic badly damaged by Hurricane Cleo.

28 September The Polaris A-3, Fleet Ballistic Missile, became operational as *Daniel Webster* (SSBN 626) departed Charleston, S.C., with a full load of the new missiles.

30 September Three ski-equipped LC-130 Hercules aircraft of VX-6 took off from Melbourne, Australia; Christchurch, New Zealand and Puntan Arenas, Chile, respectively, and made flights to Antarctica, landing on Williams Field at McMurdo Sound. The flight from Melbourne, the first in history from Australia to Antarctica, passed over the South Pole to drop a 50-pound sack of mail to the wintering-over party, then landed at Byrd Station before proceeding to McMurdo Sound. The arrival of Rear Admiral James R. Reedy, Commander Naval Support Forces, Antarctica, on this flight, on 1 October, marked the official opening of Operation Deep Freeze '65.

1 October *Franklin* (AVT 8), formerly CVS, CVA and CV 13, was stricken from the Navy Register—first of the World War II Essex Class carriers to be labeled unfit for further service.

3 October Operation Sea Orbit ended as *Enterprise* and *Long Beach* (CGN 9) arrived at Norfolk and *Bainbridge* (CGN 7) reached Charleston, S.C. This task force, the world's first composed entirely of nuclear powered ships, left Gibraltar on 31 July, sailed down the Atlantic and around Africa, across the Indian and Pacific Oceans, and around Cape Horn, completing a 65 day and 30,216 nautical mile round-the-world cruise without taking on either fuel or provisions.

17 November Helicopters of HMM-162 from *Princeton*, began delivery of 1,300 tons of food and clothing to people in the inland areas of South Vietnam flooded by heavy rains following a typhoon.

1964—Continued

26 November Nine helicopters of HU-2 and four from NAS Lakehurst, N.J., assisted the Coast Guard in the rescue of 17 men from the Norwegian tanker *Stolt Dagali* cut in two by collision with the Israeli liner *Shalom* off the New Jersey coast.

17 December Commander Theodore G. Ellyson, Naval Aviator No. 1, was enshrined in the National Aviation Hall of Fame at Dayton, Ohio—first naval officer to be so honored.

1965

1 January In accordance with the provision of General Orders prescribing the organization and administration of the Navy, all Naval Air Bases Commands were disestablished.

12 January The Department of Defense announced that the Transit all-weather navigation satellite system had been in operational use since July 1964. This system, when completely developed, would consist of four satellites in polar orbit and would provide a ship at the equator with a navigational fix once an hour.

19 January *Lake Champlain* recovered an unmanned Project Gemini space capsule launched from Cape Kennedy, Fla., in a suborbital flight 1,879 miles down the Atlantic Missile Range and within 23 miles of the carrier.

7 February In retaliation for a damaging Viet Cong attack on installations around Pleiku, a fighter-bomber strike, launched from the carriers *Ranger*, *Coral Sea*, and *Hancock*, blasted the military barracks and staging areas near Dong Hoi in the southern sector of North Vietnam.

8 February The title and designation of Naval Aviation Observers, 135X, were changed to Naval Flight Officers, 132X, to be effective 1 May.

6 March A Sikorsky SH-3A helicopter, piloted by Commander James R. Williford, took off from *Hornet* berthed at North Island, Calif., and 15 hours and 51 minutes later landed on *Franklin D. Roosevelt* at sea off Mayport, Fla. The flight surpassed the existing distance record for helicopters by more than 700 miles.

8 March With surface and air units of Seventh Fleet standing by, 3,500 Marines, including a helicopter squadron and supporting units, landed without opposition at Da Nang, an air base near the northern border of South Vietnam.

12 March Four enlisted men completed 24 days of living in a rotating room in a test conducted at Pensacola, Fla., by the Naval School of Aviation Medicine to determine the spinning rate men can endure without discomfort and to check out procedures for conditioning men for space flight.

23 March Astronauts Virgil Grissom and John Young landed their *Gemini 3* spacecraft east of Bermuda roughly 50 miles from the intended splash point. The craft was spotted by Coast Guard helicopter about 20 minutes after the landing and within an hour the two astronauts were picked up by helicopter and delivered to *Intrepid*.

26 March Seventh Fleet air units began their participation in Operation Rolling Thunder, a systematic bombing of military targets throughout North Vietnam waged by land and ship based air, as pilots from the carriers *Coral Sea* and *Hancock* launched strikes on island and coastal radar stations in the vicinity of Vinh Son.

15 April Carrier pilots of Seventh Fleet joined the battle in South Vietnam with a strike against Viet Cong positions near Black Virgin Mountain. Their attack was so successful that future in-country missions were assigned to Seventh Fleet, and to carry them out, one carrier was normally operated at what was called Dixie Station off the coast of South Vietnam. Dixie operations continued from 20 May 1965 to 4 August 1966 when land-based air was well enough established to handle most of the required air attacks in that area.

19 April Six Navy and two Marine Corps aviators emerged from two sealed chambers at the Aerospace Crew Equipment Laboratory, Philadelphia, Pa., after a 34-day test to learn the physical effect of prolonged stays in confined quarters and a low-pressure pure oxygen atmosphere.

27 April As revolt in the Dominican Republic threatened the safety of American nationals, *Boxer* sent her Marines ashore while embarked helicopter pilots of HMM-264 began an airlift in which over 1,000 men, women and children were evacuated to ships of the naval task force standing by.

10 May Seaspar, a surface-to-air version of the Sparrow III air-to-air missile, was fired in the Pacific Missile Range test area from *Tioga County* (LST 1158) on its first shipboard test.

12 May Some 1,400 men of the 3rd Battalion, 3rd Marines landed at Chu Lai, South Vietnam, from *Iwo Jima* and an APA and LSD.

1965—Continued

18 May Members of the Naval Air Reserve began a volunteer airlift supporting operations in Vietnam. On weekend and other training flights from their home stations to the west coast, Hawaii, and Southeast Asia, these pilots and crews, flying C-54 and C-118 aircraft of the Air Reserve, carried key personnel and urgently needed cargo to the combat zone, logging over 19,000 flight hours in the first 18 months of the operation.

1 June The new Marine Corps expeditionary airfield at Chu Lai, South Vietnam, 52 miles south of the major base at DaNang, became operational as the first aircraft arrived and the first combat missions took off from the strip.

7 June The *Gemini 4* spacecraft of J. A. McDivitt and E. H. White splashed down in the Atlantic about 40

miles off target after a four-day flight. Minutes later Navy frogmen dropped from a helicopter to attach the flotation collar and in less than an hour after landing the astronauts were aboard *Wasp* which had kept position for possible landings in each orbit since blastoff on 4 June.

17 June While escorting a strike on the barracks at Gen Phu, North Vietnam, Commander Louis C. Page and Lieutenant Jack E. D. Batson, flying F-4B Phantoms of VF-21 and *Midway*, intercepted four MiG-17s and each shot down one, scoring the first U.S. victories over MiGs in Vietnam.

17 June *Independence* with CVW-7 on board, arrived at Subic Bay for duty with Seventh Fleet. Her arrival, from the Atlantic Fleet around the tip of Africa, added a fifth attack carrier to naval forces operating off Vietnam.



*Independence with
fighters on forward
deck 1047141*

1965—Continued

23 June In an unusual mission for ships of her type, the seaplane tender *Currituck* carried out a shore bombardment of Viet Cong positions in the Mekong Delta area of South Vietnam.

30 June Seven years after its establishment, the Pacific extension of Dewline ceased to operate and Barrier Force, Pacific and Airborne Early Warning Barrier Squadron, Pacific went out of existence.

1 July FAW-8 was established at NAS Moffett Field, Calif., Captain David C. Kendrick commanding.

1 July The Navy's first Oceanographic Air Survey Unit (OASU) was established at NAS Patuxent River, Md., Commander Harold R. Hutchinson commanding. Tasks assigned included aerial ice reconnaissance in the North Atlantic and Polar areas and aerial operations concerned with worldwide magnetic collection and observation, known as Project Magnet.

1 July Helicopter Utility Squadrons (HU) were redesignated Helicopter Combat Support Squadrons (HC) and Utility Squadrons (VU) were redesignated Fleet Composite Squadrons (VC) as more representative of their functions and composition.

14 July *Yorktown* left San Diego for Subic Bay on a turnaround trip to deliver urgently needed materials to forces operating in and around South Vietnam.

13 August To achieve the increase in personnel necessary to carry out missions created by the requirements of a deteriorating international situation, a temporary policy was established which deferred the separation of officers and enlisted men from active service.

26 August The barrier air patrol over the North Atlantic ended as an EC-121J Warning Star of VW-11 landed at Keflavik, Iceland. The landing also signaled a change in which a new and advanced radar system took over from the aircraft and men of Naval Aviation who for the past 10 years had maintained constant vigil over the northern approaches to the American continent.

29 August *Gemini 5* splashed down into the Atlantic 90 miles off target after a record breaking eight-day space flight, and 45 minutes later Navy frogmen helped astronauts Gordon Cooper and Charles Conrad out of their space capsule and aboard a helicopter for flight to the prime recovery ship *Lake Champlain*.

31 August President Johnson approved a policy on the promotion and decoration of astronauts by which each military astronaut would receive, upon the completion of his first space flight, a one grade promotion up to and including colonel in the Air Force and Marine Corps and captain in the Navy, and Gemini astronauts completing a successful space flight would receive the NASA Medal for Exceptional Service (or cluster).

1 September In accord with the provision of an act of Congress, the Secretary of the Navy authorized additional pay to flight deck personnel for duty performed in the hazardous environment of flight operations on the decks of attack and antisubmarine carriers.

11 September Lead elements of the First Cavalry Division, U.S. Army, with their helicopter and light observation aircraft, went ashore at Qui Nhon, South Vietnam, from *Boxer* in which they had been transported from Mayport, Fla., by way of the Suez Canal.

24 September As the accelerated frequency of manned space flights placed increasing demands upon Navy recovery capabilities, a flag officer was designated CNO Representative and Navy Deputy to the DOD Manager for Manned Space Flight Support Operations and given additional duty as Commander, Manned Space Recovery Force, Atlantic. His assigned mission was to coordinate and consolidate operational requirements with all commands providing Navy resources in support of manned space flights.

14 October The A-1, 1,200 nautical mile range, Polaris missile was retired from duty with the return of *Abraham Lincoln* (SSBN 602) to the United States for overhaul and refitting with the 2,500 nautical mile range Polaris A-3.

15 October To expand Pacific airlift capabilities, VR-22 was moved from its base at NAS Norfolk to the west coast at NAS Moffett Field, Calif.

2 December The nuclear powered *Enterprise*, carrying the largest air wing (CVW-9) deployed to the western Pacific to that time, joined the action off Vietnam with strikes on Viet Cong installations near Bien Hoa.

16 December *Wasp* recovered Captain Walter M. Schirra and Major Thomas P. Stafford, USAF, in their *Gemini 6A* spacecraft one hour after their landing in the western Atlantic about 300 miles north of Puerto Rico. The astronauts had completed a one-day flight

1965—Continued

during which they made rendezvous with *Gemini 7* and kept station with it for three and one-half orbits.

18 December Helicopters of HS-11 recovered Lieutenant Colonel Frank Borman, USAF, and Commander James A. Lovell, in the western Atlantic about 250 miles north of Grand Turk Island and delivered them to *Wasp*. During their 14-day flight in *Gemini 7*, the astronauts carried out many experiments in space, including station keeping with *Gemini 6A*, and established a new duration record for manned space flight.

20 December The Secretary of the Navy established a Director of Naval Laboratories on the staff of the Assistant Secretary for Research and Development and directed that he also serve as Director of Laboratory Programs in the Office of Naval Material. Subsequently, administrative responsibility for laboratories was transferred to this dual office while test and evaluation facilities, such as Naval Air Test Center, Naval Missile Center, and Naval Air Engineering Center were placed under the command of the Naval Air Systems Command.

1966

20 January A contract for production of the Walleye television homing glide bomb was issued to the Martin Marietta Corporation.

26 February The first unmanned spacecraft of the Apollo series, fired into suborbital flight by a Saturn 1B rocket from Cape Kennedy, Fla., was recovered in the southeast Atlantic 200 miles east of Ascension Island by a helicopter from *Boxer*.

1 March The Naval Air Transport Wing, Atlantic was disestablished.

2 March *Constellation* began receiving weather data from the operational weather satellite *Essa 2*. Her equipment was the second experimental shipboard installation of receivers capable of presenting a picture of major weather patterns taken from space and its evaluation was a continuation of that begun on board *Saratoga* with the satellites *Tiros 8* and *Nimbus* in late 1963 and 1964.

16 March *Leonard F. Mason* (DD 852) recovered astronauts Neil A. Armstrong and David R. Scott in *Gemini 8*, who after completing the first space docking with another satellite, experienced control difficul-

ties which necessitated an emergency landing in the Pacific 500 miles east of Okinawa.

17 March The X-22A VTOL research aircraft made its first flight at Buffalo, N.Y.



X-22A, for vertical takeoff and landing 1111306

31 March Flight test of a Helicopter Capsule Escape System, involving recovery of personnel by separation of the inhabited section of the fuselage from the helicopter proper, demonstrated the feasibility of its use during inflight emergencies. The test was conducted at NAF El Centro, Calif., with an H-25 helicopter.

4 April NASA announced selection of 19 men for the Astronaut Team, among whom were 11 who had qualified as Naval Aviators including John S. Bull, Ronald E. Evans, Thomas K. Mattingly, Bruce McCandless II, Edgar D. Mitchell and Paul J. Weitz on active duty in the Navy and Gerald P. Carr and Jack R. Lousma on active duty in the Marine Corps. Don L. Lind (USNR), and Vance D. Brand and Fred W. Haise, Jr. (former Marine pilots), were selected as civilians.

5 April The Secretary of Defense approved a joint request from the Secretaries of the Navy and Air Force that Navy air transport units be withdrawn from the Military Airlift Command. The withdrawal was accomplished by disestablishing Navy units during the first half of 1967.

10 April Two Navy enlisted men, and a Medical Officer and a civilian electronics technician acting as observers, began spinning at 4 rpm in the Coriolis Acceleration Platform of the Naval Aerospace Medical Institute at NAS Pensacola, Fla. It was the beginning of a 4-day test to determine the ability of humans to adapt to a new form of rotation such as may be used in space stations to produce artificial gravity.

1966—Continued

18 April In a reorganization of Naval Air Basic Training Command schools at NAS Pensacola, Fla., the Naval Pre-Flight School was redesignated Naval Aviation Schools Command and six existing schools became departments of the new command. The six schools were: Aviation Officer Candidate, Flight Preparation, Survival Training, Instructor Training, Indoctrination for Naval Academy and NROTC Midshipman, and Aviation Officer Indoctrination.

1 May A reorganization of the Navy Department became effective which placed material, medical, and personnel supporting organizations under command of the Chief of Naval Operations, abolished the Naval Material Support Establishment and its component bureaus and in their place set up the Naval Material Command, composed of six functional, or systems, commands titled: Air, Ships, Electronics, Ordnance, Supply, and Facilities Engineering.

11 May The Commanding Officer of MAG-12 piloted an A-4 Skyhawk on a catapult launch from the Marine Expeditionary Airfield at Chu Lai, Vietnam. It was the first combat use of the new land based catapult capable of launching fully loaded tactical aircraft from runways less than 3,000 feet long.

15 May *Intrepid*, operating as an attack carrier although still classified as an antisubmarine carrier (CVS), joined Seventh Fleet carriers in action off Vietnam. On the first day, her air wing (CVW-10), composed entirely of attack squadrons, flew 97 combat sorties against Viet Cong troop concentrations and supply storage areas around Saigon.

18 May The XC-142A tri-service V/STOL transport made its first carrier takeoffs and landings during tests conducted aboard *Bennington* at sea off San Diego. The tests, including 44 short and six vertical takeoffs, were made with wind over the deck varying from zero to 32 knots. Lieutenant Roger L. Rich, Jr., along with other Navy, Marine, and Army pilots took turns at the controls.

6 June *Wasp* recovered *Gemini 9* astronauts Thomas P. Stafford and Eugene A. Cernan 345 miles east of Cape Kennedy after their 72-hour space flight on which they made successful rendezvous with another satellite and Cernan spent well over an hour outside the spacecraft. The astronauts elected to remain in their space craft during the recovery and were hoisted aboard the carrier.

7 June A C-130 Hercules, piloted by Commander Marion Morris of VX-6, returned to Christchurch, New Zealand, after a flight to McMurdo Station, Antarctica, to evacuate Robert L. Mayfield, UT-2, who had been critically injured in a fall. It was the third emergency air evacuation from Antarctica during the winter night.

16 June An attack by A-4 Skyhawks and F-8 Crusaders from *Hancock* in an area 24 miles west of Thanh Hoa, was the first carrier strike on petroleum facilities since 1964 and the beginning of what became a systematic effort to destroy the petroleum storage system of North Vietnam.

1 July Three North Vietnam torpedo boats came out to attack *Coontz* (DLG 9) and *Rogers* (DD 876) operating about 40 miles off shore on search and rescue missions. Aircraft from *Constellation* and *Hancock* made short work of the attackers, sinking all three with bombs, rockets, and 20mm cannon fire. After the attack, *Coontz* pulled 19 survivors from the water.

19 July The Chief of Naval Operations established the LHA program to bring into being a new concept of an amphibious assault ship. Plans developed through preliminary study envisioned a large multipurpose ship with a flight deck for helicopters, a wet boat well for landing craft, a troop carrying capacity of an LPH and a cargo capacity nearly that of an AKA.

21 July A helicopter assigned to HS-3 from *Guadalcanal* recovered astronauts John W. Young and Michael Collins after their landing in the Atlantic 460 miles east of Cape Kennedy, Fla. The astronauts had



The XC-142A vertical takeoff and landing aircraft during trials aboard *Bennington* NH 69968

1966—Continued



Helicopters from Wasp approach astronauts E.A. Cernan and T. P. Stafford at end of Gemini 9A flight NASA66H725



Guadalcanal, amphibious assault ship, crew formation recalls its Gemini recovery role NH 69955

1966—Continued



*Recovery of Collins
and Young
NASA66H1030*

spent over 70 hours in space, had docked with an Agena satellite and Collins had made a space stand and a space walk.

25 August *Hornet* recovered the second unmanned space craft of the Apollo series after its suborbital flight about 500 miles southeast of Wake Island.

3 September Naval Air Test Center pilots completed a 2 day shipboard suitability trial of the RH-3A helicopter minesweeper aboard *Ozark* (MCS 2) on the open sea. This trial completed the Center's evaluation of the helicopter for the minesweeper role. The following year the ship and a helicopter detachment from newly established HC-6 were utilized in a mine countermeasures development and training program in the Atlantic Fleet and a detachment from HC-7 was prepared for training and operation on *Catskill* (MCS 1) in the Pacific.

8 September An A-3A Skywarrior, equipped with a Phoenix missile and its control system, located, locked on at long range and launched the missile scoring an intercept on a jet target drone. The event occurred over the Navy Pacific Missile Range near San Nicolas Island. Although the Phoenix had been launched successfully before, this was the first full scale test employing all functions of the missile control system.

15 September A helicopter assigned to HS-3 from *Guam* recovered *Gemini 11* astronauts Charles Conrad and Richard Gordon at sea 700 miles off Cape Kennedy, Fla. The recovery marked the end of a three-day mission in space in which the astronauts completed several dockings with an Agena satellite, established a new altitude record of over 850 miles and Gordon made a walk in space.

16 September Helicopters from *Oriskany* rescued the entire crew of 44 men from the British merchant ship *August Moon* as she was breaking up in heavy seas on Pratas Reef 175 miles southeast of Hong Kong.

26 October Fire broke out on the hangar deck of *Oriskany* while operating in the South China Sea off Vietnam, resulting in the loss of 44 officers and men. Heroic efforts by the crew against great odds prevented greater loss of life and damage to the ship.

8 November The Chief of Naval Operations approved a reorganization of the Naval Air Reserve involving the disestablishment of all Air Wing Staffs and establishing in place of each an administrative unit titled Naval Air Reserve Staff and a training unit titled Naval Air Reserve Division (Fleet Air).

15 November *Wasp* made the last recovery of the Gemini program, picking up astronauts James A.

1966—Continued

Lovell, Jr., and Edwin A. Aldrin, Jr., and their spacecraft 600 miles southeast of Cape Kennedy. The astronauts were lifted from their spacecraft to the ship by an SH-3A helicopter of HS-11.

1967

26 February The first application of aerial mining in Vietnam occurred when seven A-6As, led by Commander Arthur H. Barie of VA-35's Black Panthers, planted minefields in the mouths of the Song Ca and Song Giang rivers. This operation was aimed at stopping coastal barges from moving supplies into immediate areas.

1 April The status of Overhaul and Repair Departments at six Navy and one Marine Corps air station was changed to that of separate commands, each titled Naval Air Rework Facility.

12 April A wing insignia for Aviation Experimental Psychologists and Aviation Physiologists was approved. The new design was similar to Flight Surgeons Wings except for use of the gold oak leaf of the Medical Service Corps in place of the leaf with acorn of the Medical Corps.

24 April Seventh Fleet carrier aircraft launched their first strikes on MiG bases in North Vietnam with an

attack on Kep Airfield, 37 miles northeast of Hanoi. The attack was delivered by A-6 Intruders and A-4 Skyhawks from *Kitty Hawk* and was followed-up by another A-6 attack the same night. While providing cover for the bombers during the first attack, Lieutenant Commander Charles E. Southwick and Lieutenant Hugh Wisely, flying F-4B Phantom IIs of VF-114, each were credited with a probable MiG-17 kill in aerial combat.

15 May The Chief of Naval Operations directed that a new department titled Aircraft Intermediate Maintenance (AIMD) be established in all operating carriers except the one operating with the Naval Air Training Command. The function of the new department was to assume responsibility for maintenance afloat formerly held by Air Wing and Air Group commanders.

19 May Two A-7A Corsair II aircraft, piloted by Commander Charles Fritz and Captain Alex Gillespie, USMC, made a trans-Atlantic crossing from NAS Patuxent River, Md., to Evreux, France, establishing an unofficial record for long distance, nonrefueled flight by light attack jet aircraft. Distance flown was 3,327 nautical miles; time of flight was seven hours and one minute.

24 May The seaplane tender *Currituck* returned to North Island, Calif., after completing a 10-month tour in the western Pacific and the last combat tour for ships of her type.



Electronics enables A-6 to bomb accurately through clouds
1143448

1967—Continued

8 June Aircraft launched from *America* to aid *Liberty* (AGTR 5) as she was under attack by Israeli aircraft and motor torpedo boats, were called back before reaching their destination when a message of regret and apology was received from Tel Aviv. Commander, Sixth Fleet, then sent medical teams on board destroyers to the scene to aid in caring for the wounded.

18 June The first scheduled winter flight to Antarctica was successfully completed when a Navy LC-130F of VX-6 flying from Christchurch, New Zealand, landed at Williams Field, seven miles from McMurdo Station. Although earlier winter flights had been made to Antarctica as a result of medical emergencies, this was the first planned flight.

30 June Naval Air Transport Wing, Pacific, was disestablished at NAS Moffett Field, Calif.

1 July DODGE satellite was placed into orbit by a Titan III-C fired from Cape Kennedy, Fla. DODGE (an acronym for Department of Defense Gravity Experiment) was developed by the Applied Physics Laboratory under management of the Naval Air Systems Command to provide a three-axis passive stabilization system that could be used on satellites orbiting the earth at synchronous altitudes. In addition to demonstrating the basic feasibility of this form of stabilization, Dodge carried color television cameras and on 25 July made the first full-disc color photograph of the earth.

1 July The title of the Office of the Naval Weather Service was changed to Naval Weather Service Command and its mission modified to ensure fulfillment of Navy meteorological requirements and the Department of Defense requirements for oceanographic analyses; and to provide technical guidance in meteorological matters. On the same date, the Naval Weather Service Division, Op-09B7, was disestablished and its functions assigned to the new command.

1 July Naval Air Propulsion Test Center, with headquarters at Trenton, N.J., was established by merger of the Naval Air Turbine Test Station, Trenton, N.J., and the Aeronautical Engine Laboratory of NAEC Philadelphia, Pa.

19 July Air Transport Squadron Three, last Navy component of the Military Airlift Command, was disestablished at McGuire AFB, N.J., ending an interservice partnership that began in 1948 when Navy and Air Force transport squadrons combined to form the Military Air Transport Service.

29 July Fire broke out on the flight deck of *Forrestal* as aircraft were being readied for launch over Vietnam. Flames engulfed the fantail and spread below decks touching off bombs and ammunition. Heroic effort brought the fires under control, but damage to aircraft and the ship was severe and the final casualty count was 132 dead, two missing and presumed dead, and 62 injured.

29 July The vice president announced that the Navy Navigation Satellite System, Transit, would be released for use by merchant ships and for commercial manufacture of shipboard receivers.

15 August The Aircraft Carrier Safety Review Panel held its first meeting. Headed by Admiral James S. Russell, USN (Ret.), the panel was appointed to examine actual and potential sources of fire and explosions in aircraft carriers with the object of minimizing their occurrence and damage and to propose further improvement in the equipment and techniques used to fight fires and control damage by explosion.

10 October Rear Admiral Albert Cushing Read, USN (Ret.), Naval Aviator No. 24, died in Miami, Fla. Well known commander of the NC-4 on the first flight across the Atlantic in 1919, Admiral Read made many contributions during his Naval Aviation career which began in July 1915 and carried through to his retirement in September 1946.

31 October *Currituck*, last seaplane tender in service, was decommissioned at Mare Island, Calif., and transferred to the Reserve Fleet.

6 November An SP-5B Marlin of VP-40 at NAS North Island, Calif., made the last operational flight by seaplanes of the U.S. Navy. With Commanders Joseph P. Smolinski and George A. Surovik as pilot and copilot and 15 passengers including Rear Admiral Constant A. Karaberis on board, the flight ended seaplane patrol operations in the Navy. For more than fifty years, seaplanes had been a mainstay in the Navy's enduring effort to adequately integrate aeronautics with the fleet.

9 November *Bennington* recovered the unmanned *Apollo 4* spacecraft about 600 miles northwest of Hawaii and after its 8½-hour orbital flight.

1968

19 January A C-130 Hercules of VR-24 and helicopters from NAF Sigonella, Italy, delivered food, clothing and medicine to the west coast of Sicily to aid

1968—Continued



Bennington prepares to recover Apollo 4 capsule NASA 67H1536

some 40,000 persons made homeless by an earthquake in the region of Montevago.

23 January When word was received of the capture of *Pueblo* (AGER 2) by a North Korean patrol boat, a Task Group, composed of *Enterprise* and screen, was ordered to reverse course in the East China Sea and to run northward to the Sea of Japan where it operated in the vicinity of South Korea for almost a month.

27 January At the call of the president in the emergency created by the seizure of *Pueblo* (AGER 2), six carrier squadrons of the Naval Air Reserve reported for active duty.

28 March The Secretary of the Navy approved establishment of a new restricted line officer category (152x) called the Aeronautical Maintenance Duty Officer (AMDO).

31 March President Johnson announced that as an indication of American willingness to make concessions opening the way to peace talks with the North Vietnamese, the bombing of targets north of the 20th parallel would stop on the following day.

4 April The *Apollo 6* unmanned spacecraft was recovered after its orbital flight by *Okinawa* about 380 miles north of Hawaii.

3 May The Aviation and Submarine Safety Centers were combined to form the Naval Safety Center. At the same time the Office of the Assistant Chief of Naval Operations (Safety) was established.

22 June The keel for *Nimitz* was laid at Newport News, Va.

1 July To insure a more rapid and efficient transition to combat status in the event of mobilization, the Naval Air Reserve was reorganized into wings and squadrons known collectively as the Naval Air Reserve Force, and effective 1 August, Commander Naval Air Reserve Training assumed additional duty as Commander, Naval Air Reserve Force.

6 July VMO-2 stationed at Da Nang, South Vietnam, received the first OV-10A Broncos to arrive in South Vietnam. The aircraft, specifically developed for counterinsurgency warfare, was immediately employed for forward air control, visual reconnaissance and helicopter escort.

24 August A change in uniform regulations provided a new breast insignia for Navy and Marine Corps

1968—Continued

personnel qualified as Flight Officers. The new wings replaced the old Naval Aviation Observers wings effective 31 December.

16 September The Department of Defense announced that six naval air reserve squadrons called to active duty immediately after the seizure of *Pueblo* (AGER 2) would be returned to inactive status within the next six weeks.

22 October Helicopters of HS-5 from *Essex* located and recovered astronauts Walter M. Schirra, Donn F. Eisele, and R. Walter Cunningham about 285 miles south of Bermuda and delivered them safely to the ship. It was the end of an 11-day mission in space and the first manned flight of the Apollo program.

1 November In response to orders from the president, all bombing of North Vietnam was halted at 2100 Saigon time. The last Navy mission over the restricted area was flown earlier in the day by Commander Kenneth E. Enney in an A-7 Corsair II from *Constellation*.

6 November The lighter-than-air hangar at NAS Lakehurst, N.J., was designated a National Historic Landmark by the National Park Service of the Department of the Interior.

27 December Helicopters of HS-4 hovered over *Apollo 8* after it ended its historic flight around the moon with a predawn splashdown in the Pacific within three miles of *Yorktown*. At first light, astronauts Frank Borman, James A. Lovell, and William A. Anders were picked up by helicopters and carried to the ship.



Schirra, Eisele, and Cunningham aboard recovery ship Essex after orbiting earth for 11 days in Apollo 7 NASA68H986



New way, A-7 launch with nose tow gear 119077



Old way, launching with catapult bridle 1110446

27 January Commander, Naval Air Systems Command directed that the Naval Aviation Integrated Logistic Support Task Force be phased out. This Task Force, generally known as NAILS, had made an in depth study of aviation logistics with particular emphasis on spares and repair parts support management. Among other things, it recommended that a NAILS Center be established.

1969

3 January VAL-4, the first Navy squadron of its type, was established at NAS North Island, Calif., to operate the OV-10A Bronco. When VAL-4 deployed to Vietnam in March, it became an important part of the brown-water Navy, operating from two airfields in the Mekong Delta to provide direct support for U.S. and Vietnamese Navy Riverine operations.

14 January A fire aboard *Enterprise* resulting from detonation of a MK-32 Zuni rocket warhead overheated by exhaust from an aircraft starting unit, took 27 lives, injured 344 and destroyed 15 aircraft. Repairs to the ship were completed at Pearl Harbor, Hawaii, in early March.



An F-4B from VF-143 fires Zuni rockets during Seventh Fleet operation in South China Sea 110794

1969—Continued

3 February The Naval Air Systems Command issued a contract to Grumman for development of the F-14A fighter and manufacture of six experimental aircraft. The F-14, intended as a high performance replacement for the F-4 and abortive F-111B, will feature a variable-sweep wing and carry the Phoenix missile.

13 February *Randolph* was decommissioned, and placed in the Reserve Fleet. This was followed on 30 June by the decommissioning of *Essex*, which was placed in reserve, and on 1 December by the decommissioning of *Boxer* which was sold for scrap.

13 March Apollo 9 Astronauts James A. McDivitt, USAF, David R. Scott, USAF, and Russell L. Schweickart were recovered by a helicopter from HS-3 off *Guadalcanal* after completing a 10-day orbit of the earth.

14 April North Korean aircraft shot down an unarmed EC-121 propeller-driven Constellation which was on a routine reconnaissance patrol over the Sea of Japan from its base at Atsugi, Japan. The entire 31-man crew was killed. U.S. response was to activate Task Force 71 to protect such flights over those international waters in the future. Initially, the TF consisted of the carriers *Enterprise*, *Ticonderoga*, *Ranger*, and *Hornet* with cruiser and destroyer screens.

26 May Apollo 10 Astronauts Thomas P. Stafford, USAF, John W. Young, USN, and Eugene A. Cernan, USN, were recovered by HS-4 off *Princeton* after making an 8-day orbit of the earth.

26 May A new, major development in carrier fire prevention occurred when *Franklin D. Roosevelt* put to sea from Norfolk Naval Shipyard, Va., after an 11-month overhaul which included installation of a deck edge, spray system using the new seawater compatible, fire-fighting chemical, Light Water.

1 June On a flight from Stephenville, Newfoundland, to Mildenhall, England, Lieutenant Colonel R. Lewis, USMC, and Major C. L. Phillips, USMC, piloted an OV-10 Bronco to a world record of 2,539.78 miles for point to point distance for light turbo-prop aircraft.

24 June The first operational “hands off” arrested landing using the AN/SPN-42, Automatic Carrier Landing System, on a carrier was performed by Lieutenant Dean Smith and Lieutenant (jg) James Sherlock of VF-103 when their Phantom II landed aboard *Saratoga*. AN/SPN-42 was an outgrowth of SPN-10 which was first tested in 1957 but was found not to meet all fleet requirements.

30 June Personnel on duty in the naval aeronautical organization at the end of the fiscal year, in round



OV-10A, light armed reconnaissance aircraft 1143446

1969—Continued

numbers, included a grand total of 177,000 with 28,500 officers of whom 15,200 were HTA pilots. Enlisted men numbered 147,700 of whom 27 were pilots. Respective figures for Marine Aviation were: 72,500; 9,600; 5,600; 62,800, and 5.

14 July The first A-7E Corsair II assigned to an operational squadron was delivered to VA-122, the A-7 West Coast training squadron at NAS Lemoore, Calif. The A-7E version of the Vought Corsair II incorporates heads-up-display (HUD) and Project Map Display (PMDS) whereby vital information from flight and navigation instruments are projected into the pilots normal field of vision, thereby permitting him to concentrate on his mission without looking down at instruments. Service use of this equipment culminated a development effort of more than 15 years duration.

24 July Apollo 11 Astronauts Neil A. Armstrong, ex-USN, Edwin E. Aldrin, Jr., USAF, and Michael Collins, USAF, were recovered by HS-4 off *Hornet* after the first moon landing during which Armstrong and Aldrin walked on the moon, 20–21 July. The first person to set foot on the moon was a naval aviator, Neil Armstrong.

1 August The Naval Air Systems Command issued a contract to Lockheed Aircraft Corporation for development of the S-3A, a carrier based antisubmarine warfare plane designed for all weather operation and equipped with modern detection and data processing equipment. It was scheduled to replace the S-2 Tracker in the seventies.

17 August Hurricane Camille swept into the Gulf Coast near Gulfport, Miss., leaving many people homeless and causing heavy property damage. Naval Aviation performed emergency assistance and HT-8 received a letter from the president praising it for services rendered during the disaster.

31 August Two LC-130s of VXE-6 arrived at McMurdo Sound, Antarctica, six weeks in advance of the opening of Operation Deep Freeze 70. Among the passengers were Rear Admiral David F. Welch, Commander Naval Support Force, Antarctica, and seven scientists.

1 September The Naval Aviation Integrated Logistic Support Center, Patuxent River, Md., was established to provide intensified logistics management for Naval Aviation.

8 September As part of Project Birdseye, the Arctic ice-survey mission initiated in March 1962 to gather ice-flow information for the Naval Oceanographic Office, VXN-8 provided ice surveillance for SS *Manhattan* during the ship's historic voyage from the East Coast of the United States to Alaska through the ice-packed Northwest Passage.

30 September CVSG-57 was disestablished followed by the disestablishment of CVW-10 on 28 November and CVSG-52 on 15 December.

22 October The Naval Air Systems Command and the United Kingdom executed a Memorandum of Agreement whereby the Hawker-Siddely Harrier, a vertical take-off and landing aircraft, could be purchased. A subsequent Letter of Offer covered procurement of 12 aircraft with initial delivery in January 1971. The Harrier, U.S. designation AV-8A, was being procured for operational use by the Marine Corps as a result of interest generated in September 1968 when Marine Aviators Colonel



Pilots converting to the AV-8A learn new vocabulary

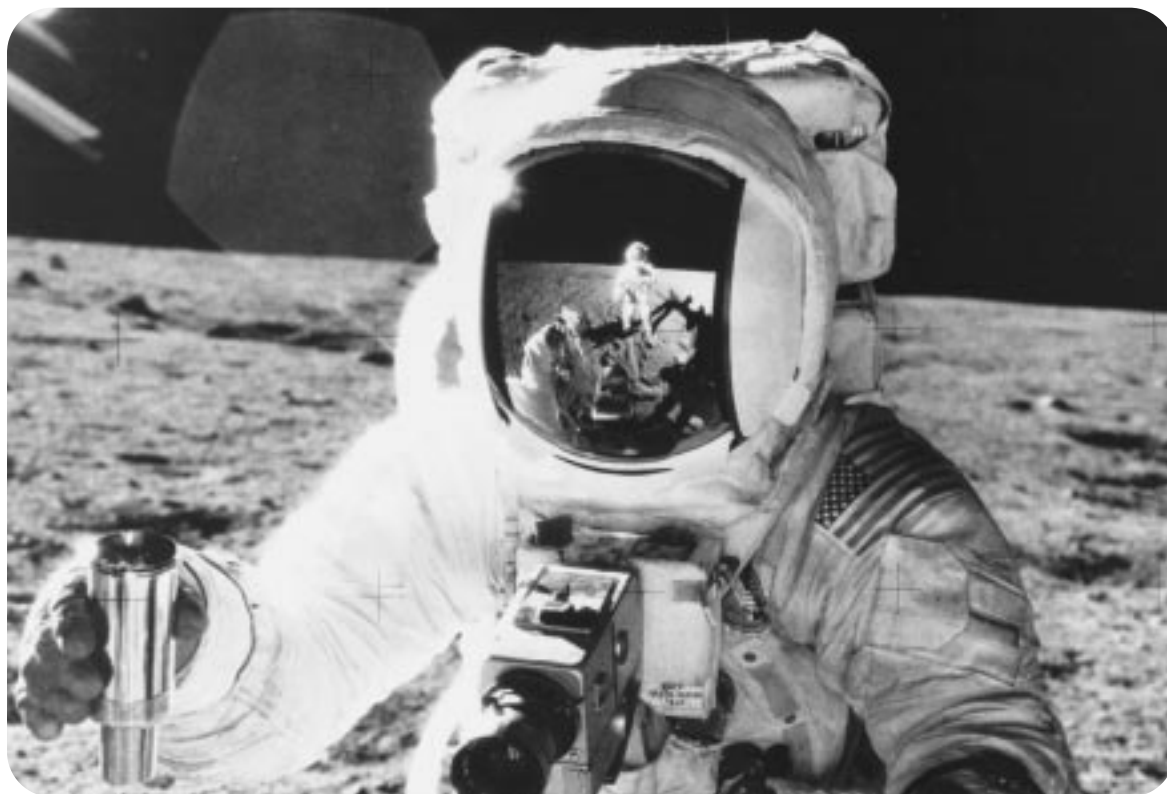
1969—Continued



Marine Harrier demonstrates its hover capabilities

Thomas H. Miller, Jr. and Lieutenant Colonel Clarence M. Baker flew the aircraft in England. The Harrier was a further development of the Kestrel, which in early phases received developmental support from the United States and West Germany as well as the United Kingdom.

24 November The Apollo 12 Astronauts, an all-Naval Aviator crew of Richard F. Gordon, Jr., Charles Conrad, Jr., and Alan L. Bean, were recovered by HS-4 off *Hornet* after circling the moon, and in a lunar module, landing there with Conrad and Bean on 19 November for 31½ hours.



*Three of the first four men on the moon have flown for the Navy
NASA-ASI2497278*



UH-1B on Mekong Delta patrol 1143447



A C-2 Greyhound makes carrier on board delivery to Kitty Hawk during operation off Vietnam 1143450



QH-50D drone helicopter on ASW mission 1143449



CH-46A during vertical replenishment NH 69969



CH-46A for vertical assault HN69966



SP-2H, on patrol inspects a Vietnamese junk 1115829



H-2 stands plane guard during flight operations K31638



Marine CH-53A, Sea Stallion, lifts large Truck NH 69965



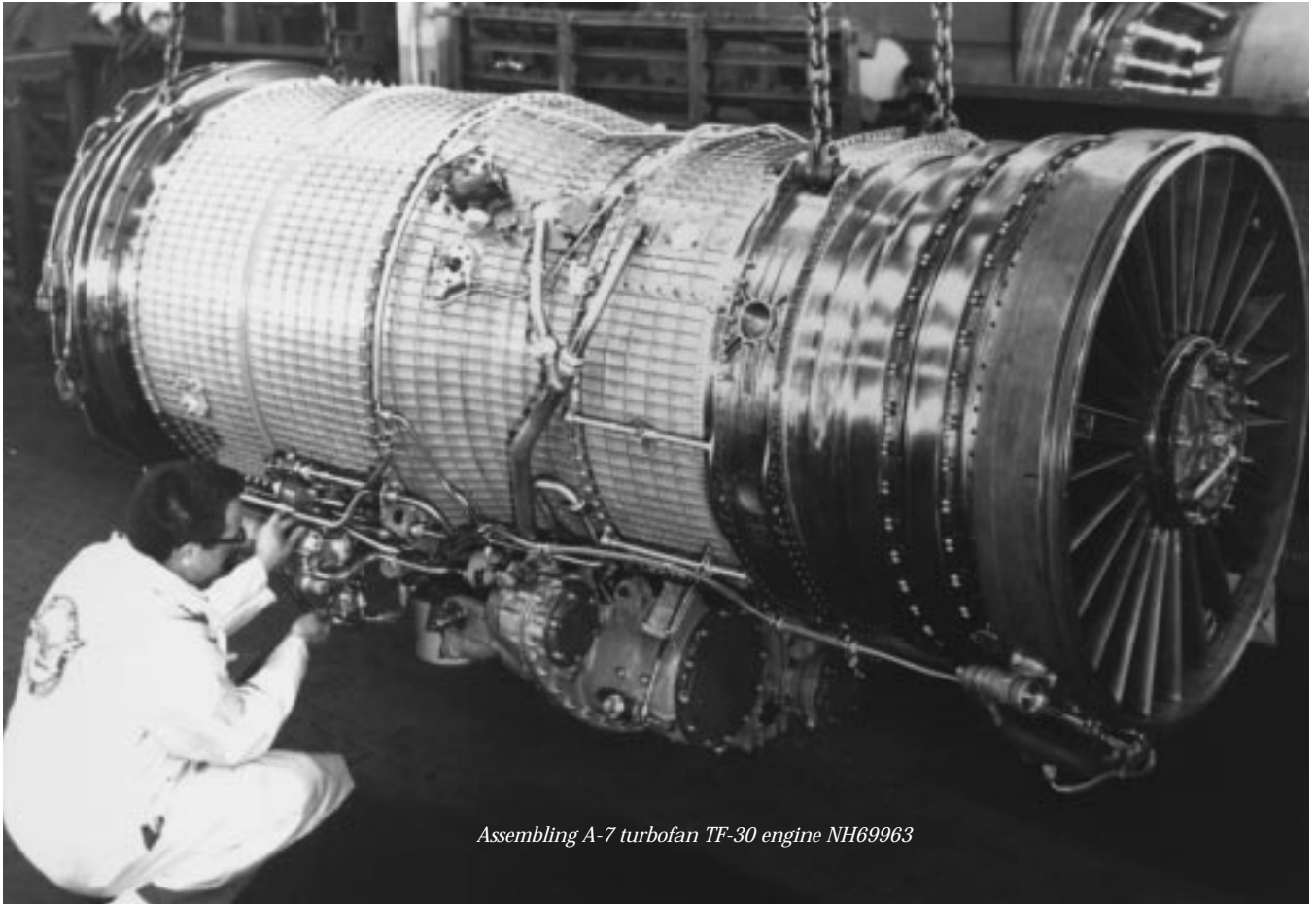
Shrike antiradar missiles HN69964



Mounting Gun-pod on A-4 4710124



Light water in washdown system, used for fighting fire



Assembling A-7 turbofan TF-30 engine NH69963



Reloading M-60 machine gun on UH-1B helicopter K58290



Echo II test at Lakehurst 1143455



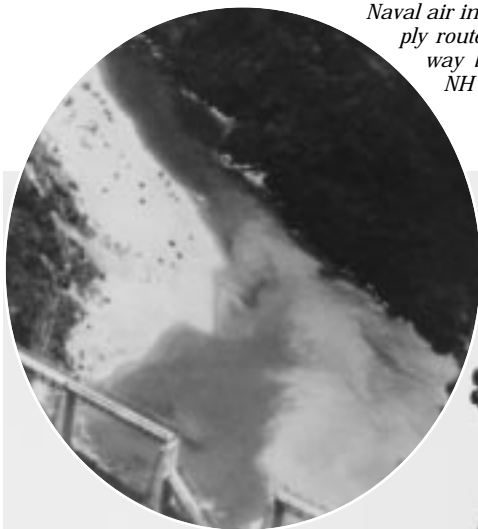
Task Force 77 units in the Tonkin Gulf, Oriskany (center), as seen from signal bridge of Constellation 1143453



Human centrifuge used in study of space flight 1036457



Nuclear-powered Enterprise, Long Beach, and Bainbridge preparing for 1964 round the world cruise 1103800



Naval air interdicts Vietcong supply route by destroying highway bridge with bombing NH 69956



Helos deliver guns and ammo to troops USMC 184967



Advanced aviation base ship, Tallahatchie County, decommissioned in 1970



Iroquois come in for refueling from LC-130 Hercules during deepfreeze K87381



Guam aids peru earthquake victims K84668