PART 10

The Seventies

1970–1980

Naval Aviation began its seventh decade with the United States heavily embroiled in the Vietnam War and 1980 ended with carriers *Dwight D. Eisenhower* and *Ranger* deployed in the Indian Ocean. The country had no sooner ended its long military involvement in Vietnam than it faced a growing crisis in the Middle East, a crisis that reached hostile proportions late in 1979 when Iranian hoodlums captured the United States Embassy in their capital city, Tehran.

Throughout the 1970s, the American public became increasingly aware of the country's critical dependence upon oil from foreign sources. During this time, an acute consciousness of the United States' position as a two-ocean nation reemphasized the reliance upon the U.S. Navy to keep sea lanes open and commerce moving unhampered.

For nearly ten years, the burden of the Navy's air action fell upon the carriers and aircraft of the Seventh Fleet. To meet this responsibility, naval air relied on established weapons and material and introduced new ones. The Walleye, a television-guided glide bomb designed to home automatically on target, was tested successfully in combat. Helicopters flexed their muscle in a combat role and served also as aerial tanks and flying freight trains. Land-based patrol aircraft, in Operation Market Time, scoured the coastline of South Vietnam to search out enemy infiltrating vessels and locate surface forces for interception. In 1972, Operations Linebacker I and II waged heavy interdiction and bombing campaigns against North Vietnam. Aircraft of the Seventh Fleet performed the most extensive aerial mining operation in history, blockading the enemy's main avenues of supply. An uneasy truce finally resulted in the United States disengaging itself from Vietnam in 1973. Two years later, Naval Aviation was called upon to assist in the evacuation of refugees fleeing the North Vietnamese takeover of South Vietnam. In 1979, naval air power helped rescue thousands of Indochinese who took to the high seas in poor vessels to escape mounting tyranny in their homelands.

Against the unrelenting need for vigilance was pitted a declining material inventory and difficulty in retaining experienced personnel. Much of the 1970s can hardly be called bountiful for Naval Aviation. As the surplus of equipment left over from Vietnam eroded through constant use, money for replenishment was not abundant. The high inflation rate that beset the world's industrial nations plagued defense budgets and drove downward the purchasing power of military salaries. Nevertheless, Naval Aviation continued to make headway in the areas of research and development.

Early in the 1970s, the Navy introduced the F-14 Tomcat, and the Marine Corps accepted the AV-8 V/STOL Harrier. At the end of the decade, a new fighter/attack aircraft, the F/A-18 Hornet, was undergoing flight trials. The submarine threat was confronted by the addition to the fleet of the light airborne multipurpose system (LAMPS) which combined shipboard electronics with the SH-2D helicopter. As 1980 drew to a close, the latest LAMPS version was under test in a new Navy airframe, the SH-60B Seahawk. Also at decade's end, the Navy's latest heavy-lift helicopter, the CH-53E, was ready for acceptance by a Marine Corps squadron. Airframes were not the only items which saw advance. The fields of electronics, missiles, and crew systems also benefited from improvements. Finally it should be mentioned that during the 1970s two nuclear supercarriers, *Nimitz* and *Dwight D. Eisenhower* were commissioned; a third, *Carl Vinson*, was launched.

As Naval Aviation began its eighth decade, there was no serious reason to doubt that its superior record of achievement would endure. Aircraft, integrated with the fleet, would continue to provide the United States with the strongest naval power on earth.

1970

15 January *Bennington*, *Valley Forge* and *Tallahatchie County* were decommissioned. As a part of the continuing ship reduction program, this was followed by the decommissioning of *Princeton* on 13 February, *Hornet* on 26 June and *Yorktown* on 27 June. Earmarked in 1970 for decommissioning in 1971 were *Bon Homme Richard* and *Shangri-La*.

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31 January *Midway* was recommissioned following a four-year conversion-modernization at the San Francisco Bay Naval Shipyard, Calif. Other ship developments that followed were the commissioning of *Inchon* on 20 June, completing *Ticonderoga's* conversion from CVA to CVS in May, and laying the keel of *Dwight D. Eisenhower* on 15 August.

10 February As part of the U.S. withdrawal from Vietnam, two Marine squadrons, VMFA-542 and VMA-223, returned to Marine Corps Air Station El Toro, Calif. The same month, VMA-211 and MAG-12 were reassigned to Japan. In September, VMFA-122, VMFA-314 and VMA(AW)-242, as well as two aviation support units, H&MS-13 and MABS-13, returned to the U.S. On 13 October, the last Marines left Chu Lai, a base from which they had been operating since 1965.

16 March The crash of an EC-121 reconnaissance plane took the lives of 23 Navy passengers at Da Nang Air Base, South Vietnam.

28 March The first North Vietnamese MiG kill since the 1 November 1968 bombing halt occurred when Lieutenant Jerome E. Beaulier and Lieutenant (jg) Stephen J. Barkley in an F-4 Phantom II of VF-142 off *Constellation* shot down a MiG-21 while escorting an unarmed Navy reconnaissance plane on a mission near Thanh Hoa, North Vietnam.

1 April CVWR-20 and CVWR-30 were established followed by CVSGR-70 and CVSGR-80 on 1 May. This was a continuation of a program initiated in July 1968 to give Naval Air Reserve an improved combat readiness. The reorganization placed all carrier-type squadrons in two reserve carrier air wings and two carrier ASW groups. Twelve VP and three VR squadrons joined the carrier squadrons under the control of Commander Naval Air Reserve Force.

10 April The A-4M Skyhawk made its first flight at the McDonnell Douglas plant at Palmdale, Calif. This aircraft was equipped with a high power engine (nearly 50 percent more thrust than that of the Skyhawk from 1954) and brake parachute; these features made it particularly adaptable for operations from short airfields in forward areas.

17 April Apollo 13 astronauts James A. Lovell, Jr., USN; John L. Swigert, Jr., ex-USAF; and Fred W. Haise, Jr., ex-USMCR, were recovered by HS-4 off *Iwo Jima* after their abortive moon flight.

2 May A VC-8 helicopter rescued twenty-six persons from a Dutch Antillean Airlines DC-9 ditched in the Caribbean. The helicopter was piloted by Lieutenant Commander James E. Rylee and Lieutenant (jg) Donald Hartman; crewmen were ADC William Brazzell and AD Calvin Lindley.

9 May Approximately 30 U.S. Navy craft, helicopters and OV-10 Bronco aircraft participated with the combined South Vietnamese/U.S. Riverine Force in operations into the Mekong River Corridor to neutralize sanctuary bases in that area. This followed the initial series of strikes by combined U.S.-RVN ground forces against enemy sanctuaries in Cambodia during the first week of May.

31 May Following Peru's earthquake which took 50,000 lives, injured 100,000 and made 800,000 homeless, *Guam* and HMM-365 provided victims with over 200 tons of relief supplies and transported over 1,000 evacuees and medical patients on 800 mercy flights. Before *Guam* left the Peruvian coast on 21 June, her crewmen spent two days in Lima at the invitation of a grateful Peruvian government.

1 June CVW-4 and -12 were disestablished, followed by the disestablishment of CVSG-51 on 30 June.

9 June Sikorsky pilot James R. Wright and copilot Colonel Henry Hart, USMC, flying a Marine Corps CH-53D, established a New York, N.Y., to Washington, D.C., record for helicopters of 156.43 mph with an elapsed time of 1 hour, 18 minutes and 41.4 seconds from downtown to downtown. The following day they established a New York, N.Y., to Boston, Mass., record for helicopters of 162.72 mph with a city to city time of 1 hour, 9 minutes, 23.9 seconds.

30 June As a result of reductions in force levels, personnel on duty in the naval aeronautical organization at the end of the fiscal year, in round numbers, included a grand total of 162,600 with 25,900 officers of whom 14,500 were pilots. Enlisted men numbered 135,900 of whom 22 were pilots. Respective figures for Marine Aviation were: 72,000 total; 9,900 officers of whom 5,700 were pilots; 62,000 enlisted men and 4 enlisted pilots.

1 July Naval Air Systems Command Liaison Office, Dayton, Ohio, was disestablished. This marked the end of an office that had its beginning in October 1920, when the Navy detailed an aviation officer to McCook Field to observe and report on experimental work.

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17 July The P-3C began deployed operations as VP-49 took over patrol responsibilities at Keflavik, Iceland. This ASW aircraft, which was described in an unveiling ceremony 14 months earlier as "two or three times as effective as anything we now have," featured the latest antisubmarine warfare equipment including directional sonobuoys, a high capacity computer and related displays.

8 September The Department of Defense modified its basic space policy (established in March 1961) by providing that functional responsibilities of the services would be considered in assigning programs for development and acquisition of space systems. In addition, the Director of Defense, Research and Engineering would assure that specific space programs administered by one service would be broad enough to meet the related needs of other services.

25 September A Condor television-guided air-to-surface missile was launched by an A-6A at a standoff distance from its target. The aircraft was 56 miles from the target when the missile made a direct impact. The test was conducted at the Naval Weapons Center, China Lake, Calif.

25 September As a result of the Jordanian crisis caused by Palestinian commando attempts to unseat the monarchy in Amman, *John F. Kennedy* joined *Saratoga* and *Independence* in the Mediterranean, followed by seven other U.S. Navy ships, including *Guam* on 27 September. This strengthened the Sixth Fleet to some 55 ships which served as a standby force in case U.S. military protection was needed for the evacuation of Americans and as a counterbalance to the Soviet Union's Mediterranean fleet.

25 October Sailors and Marines completed four days of assistance and relief to thousands of Filipinos left homeless, hungry and injured by Typhoon Joan which had struck southern Luzon and Catanduanes Island in the Republic of the Philippines, leaving 600 dead and 80,000 without shelter. Over 300 tons of rice, flour, blankets and fuel were air-lifted by HMM-164, while galleymen aboard *Okinawa* worked round-the-clock baking over 5,000 loaves of bread, and inland, medics groped by flashlight to aid the injured.

29 October Following the ravages of Typhoon Kate and flood waters that inundated some 140 square miles of Vietnam south of Da Nang, the helicopter forces of 1st Marine Aircraft Wing performed rescue and relief operations for over 9,000 South Vietnamese. Initial rescue operations began when MAG-16 evacuated some 900 people the first day during floods termed the worst since 1964.

21 November Navy planes dropped flares along the coast of North Vietnam to divert attention from an Army-Air Force search and rescue team that searched a vacated prisoner-of-war compound at Son Tay, 20 miles west of Hanoi.

21–22 November In response to attacks on unarmed U.S. reconnaissance aircraft, 200 U.S. aircraft conducted protective reaction air strikes against North Vietnamese missile and antiaircraft sites south of the 19th parallel. The strike forces included Marine Corps and Navy aircraft from *Hancock, Ranger,* and *Oriskany.*

24 November The Senate Preparedness Investigating Subcommittee completed a three-day "Investigation into Electronic Battlefield Program," which dealt with the development and use of sensor surveillance to locate hostile forces in South Vietnam and thus take the night away from the enemy. As representatives of the Services and OSD explained to the committee, the program had its beginnings in 1966 when the Navy sought to adapt the air-dropped radio sonobuoy to ground use by replacing the hydrophone with a microphone. In the initial phase, the project was called ALARS (for Air Launched Acoustical Reconnaissance) which was a part of the TRIM (Trail Road Interdiction Mission) Project. In August 1966 a scientific study group proposed a broader air-supported barrier system, and in September, the Secretary of Defense established the Defense Communications Planning Group to implement the concept and later expanded the mission to cover a variety of tactical applications with a variety of sensors. Although the air-supported sensor responsibility was eventually assigned to the Air Force (under the code name Igloo White), the initial combat mission was carried out from November 1967 to June 1968 by a newly established Navy squadron, VO-67, equipped with 12 OP-2E aircraft.

24 November A T-2C modified by North American Rockwell to a super-critical wing configuration was test flown by North American test pilot Edward A. Gillespie at Columbus, Ohio. The supercritical wing, based upon theoretical development by Dr. Richard Whitcomb of NASA, promised to delay the onset of transonic shock separation, buffeting, and other undesirable aerodynamic phenomena and thus give greater flexibility to aircraft intended for operation in the sonic speed regimen.

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25 November The Chief of Naval Material established a Navy Space Project Office with responsibility for the integration and coordination of space activities within the purview of the Naval Material Command and with responsibility for management of designated space projects.

21 December The F-14A aircraft, piloted by Grumman test pilots Robert Smyth and William Miller, made its first flight at Grumman's Calverton, Long Island, N.Y., plant.

1971

1 January Task Force 77, the Attack Carrier Striking Force Seventh Fleet, continued operations off Vietnam on Yankee Station, the "on line" area in the Gulf of Tonkin, with missions consisting of interdiction of the Ho Chi Minh Trail in Laos, air support for allied ground forces in South Vietnam (SVN), photographic reconnaissance, combat air patrols and electronic warfare. On station at the beginning of the year were *Hancock* and *Ranger*.

6 January The Marine Corps/Navy's first AV-8 Harrier was accepted by Major General Homer S. Hill, USMC, at Dunsfold, England. The Harrier was the first vertical take-off and landing (V/STOL) fixed-wing aircraft ever accepted for use as a combat aircraft by U.S. armed forces.

19 January *Enterprise* completed sea trials with her newly designed nuclear reactor cores which contained enough energy to power her for the next ten years.

22 January The Navy's most advanced antisubmarine warfare aircraft, the land-based P-3C Orion, established a world record in the heavyweight turboprop class for long distance flight. The production model aircraft, piloted by Commander Donald H. Lilienthal with a crew of eight, set the record with a flight of 6,857 statute miles over the official great circle route from NAS Atsugi, Japan, to NAS Patuxent River, Md. The flight, which topped the Soviet Union's IL-18 turboprop record of 4,761 miles set in 1967, lasted 15 hours, 21 minutes. In order to avoid Russia's Kamchatka Peninsula, the Lilienthal flight actually covered 7,010 miles.

26 January The AV-8A Harrier arrived at the Naval Air Test Center, Patuxent River, Md. for commencement of Board of Inspection and Survey trials.

Southeast Asia.

27 January A P-3C at the Naval Air Test Center, Patuxent River, Md. with Commander Donald H. Lilenthal as Plane Commander established a world speed record for its class of 501.44 mph over the 15 to 25 km course.

27 January NAVAIR expedited procurement of the TCW-33P VWS (Ventilated Wet Suit) to permit its issuance to VS and VP squadrons during the winter of 1971–1972. The evaluation of 3,100 ventilated wet suits had begun in 1969 and enthusiastic acceptance by flight crews led to the decision that the suits should

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AV-8A Harrier (VTOL) comes in for a recovery on board Guadalcanal K-89288

be procured for early issue rather than phased in as stocks of the Mk 5 anti-exposure suit were depleted.

29 January The Navy's newest carrier-based electronic warfare aircraft, the sophisticated EA-6B Prowler, entered service with VAQ-129 at NAS Whidbey Island, Wash. The Prowler, a derivative of the two-place A-6 Intruder, was lengthened to accommodate a four-place cockpit and replaced the A-3 Skywarrior. VAQ-129 (redesignated from VAH-10 in 1970) became the replacement training squadron when it commenced instructing aircrew and ground support replacement personnel for all the Navy's Prowler squadrons.

31 January Alternating on Yankee Station, *Hancock*, *Ranger* and *Kitty Hawk* flew a total of 3,214 sorties during the month, of which 3,128 delivered ordnance in Laos. A-6 and A-7

A-6 Intruder releasing ordnance during bombing mission over Vietnam NAH-003854

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aircraft were particularly effective in attacking truck traffic, the enemy having put a seasonally high number of trucks on the road, averaging close to 1,000 per day.

4 February A P-3C, at the Naval Air Test Center, Patuxent River, Md., with Commander Donald H. Lilienthal as Plane Commander, set a world record for its class of 45,018.2 feet altitude in horizontal flight.

5 February The Navy announced the first successful test-firing of a Condor air-to-surface missile armed with a live warhead. The missile, which was fired from an A-6 Intruder jet aircraft and guided by television, scored a direct hit on a target ship, which was out of sight from the launching aircraft.

8 February Commander Donald H. Lilienthal and crew in their P-3C completed the assault on world records for unlimited weight turboprop planes, establishing an altitude record of 46,214.5 feet, and time-to-climb records of 3,000 meters in 2 minutes 51.7 seconds; 6,000 meters in 5 minutes 46.3 seconds; 9,000 meters in 10 minutes 26.1 seconds; and 12,000 meters in 19 minutes 42.2 seconds.

17 February The Weapons Systems Explosive Safety Review Board approved service use of the pyrotechnic seeding device, WMU-1/B. This unit, consisting of a silver iodide (catalyst) generator, became the first weather modification unit released for production and general use by the Navy. Later that year this device was used over the island of Okinawa to enhance rainfall and thus replenish the island's water reserves.

24 February The Navy disclosed that an electronic eavesdropper, developed at the Naval Air Development Center, Warminster, Pa., had been used in Southeast Asia since June 1967. Called the Acoubuoy, it was dropped along trails and broadcasted passing sounds to aircraft up to 20 miles away.

28 February In Vietnam during the month, two carriers remained on station throughout the period as strike sorties rose to an average of 122 per day because of a 40 percent increase in enemy truck movements from the previous month, averaging more than 1,400 a day. A program was extended to A-7 aircraft night all-weather seeding missions heretofore flown exclusively by the A-6. The computer release of flares over targeted road segments was followed by visual delivery of seeds which allowed the enemy minimal chances of spotting the emplaced mine fields.

9 March Construction began on the joint U.S./U.K. naval air and radio communications station located on the Indian Ocean atoll of Diego Garcia. Later in the month, Naval Mobile Construction Battalion 40, supported by U.S. surface vessels, commenced the major construction effort.

10 March On Yankee Station, *Ranger* and *Kitty Hawk* set a record of 233 strike sorties for one day and went on during the ensuing six-day period to mark up a strike effectiveness record that exceeded record performances by TF-77 during the previous three-year period.

16 March The first SH-2D LAMPS (Light Airborne Multi-Purpose System) helicopter test flight took place at Kaman's Bloomfield, Conn., facility. This flight followed testing aboard *Sims* (DE 1059) to determine deck strength for helicopter operations. It was announced later in the month that 115 H-2 helicopters would be committed to the LAMPS program. The LAMPS system was configured to extend the range of ASW and ASMD on destroyers, frigates, and destroyer escorts as an airborne extension of the ships' own detection systems.

29 March The first active AIM-9G missile was launched from an NUH-2H helicopter by the Weapons System Test Division of NATC.

31 March In Vietnam, strike sorties launched by the carriers serving on Yankee Station during the month totaled 4,535 of which 4,479 were sorties delivering ordnance. These figures were up by 1,074 and 1,065, respectively, from the previous month. Over 680 Acoubuoy seed and interdiction package missions were flown during the month with unknown results. Approximately 75 percent of the interdiction packages, however, obtained one or more road cuts while implanting Acoubuoy seeds.

1 April HM-12, the Navy's first helicopter squadron devoted exclusively to mine countermeasures, was established at NAS Norfolk, Va. The mission of HM-12 was to remove or eliminate enemy mines from sealanes and amphibious operating areas. To accomplish this task HM-12 helicopters towed specially designed mechanical magnetic and acoustic minesweeping equipment which would activate the enemy mines, thereby eliminating them as a threat to future operations in the area. HM-12 employed CH-53A Sea Stallions until they received the Sikorsky RH-53D built specifically for mine countermeasures.

1971—Continued

5 April Modernization of the Naval Air Reserve continued when the first A-7 Corsair IIs were received by VA-303 at NAS Alameda, Calif. The first reserve squadron to operate the modern jet, VA-303 received its full complement of 12 aircraft by the end of June. Less than four months later, VA-303 made the initial reserve A-7 squadron deployment, marking the first extended deployment of a reserve squadron on other than annual active duty training.

16 April The A-4M Skyhawk entered squadron service with VMA-324 and VMA-331 at MCAS Beaufort, S.C. The most advanced in the A-4 series, the aircraft featured a new self-contained starter, carried twice as much 20mm ammunition, and had 20 percent more thrust (11,200 pounds). The new model Skyhawk, the seventh major version, was developed specifically for the Marine Corps and was capable of delivering all air-to-ground weapons in the naval inventory.

16 April VMA-513 at MCAS Beaufort, S.C., took delivery of three AV-8A Harrier aircraft, thereby becoming the first operational high performance V/STOL squadron in the United States.

30 April In Vietnam during the month, three carriers assigned to TF-77—*Ranger*, *Kitty Hawk*, and *Hancock*—provided a constant two carrier posture on Yankee Station. Hours of employment remained unchanged with one carrier on daylight hours and one on the noon to midnight schedule. Strike emphasis was placed on the interdiction of major Laotian entry corridors to South Vietnam (SVN). Strike sorties delivering ordnance totalled 3,648. Fifteen strike sorties were flown into North Vietnam (NVN) during the month.

1 May A board to study and make recommendations on Aeronautical Engineering Duty personnel policies, which had been appointed the preceding 14 December with Rear Admiral Daniel K. Weitzenfeld as senior member, submitted its report. The board reported that the AED community was at full strength and had an excellent base of aspirants from which to select new applicants. A number of recommendations were made to further the careers of Aeronautical Engineering Duty Officers (AEDO) and their use by the Navy. The more significant recommendations included achieving "a limited joining with the AMD (152) group in recognition of a common purpose in support of Naval Aviation," and identifying billets which could be filled by either Aeronautical Engineering Duty or Aeronautical Maintenance Duty Officers.

18 May In Vietnam, *Midway*, after relieving *Hancock* on 10 May, commenced single carrier operations on Yankee Station until the end of the month. This had not been in effect since January, when *Kitty Hawk* served a two-week "on station" tour alone. During the one-carrier operations, *Ranger* and *Kitty Hawk* were away for upkeep periods in Japan.

21 May Technical evaluation of a new fire control system with a helmet-mounted sight was begun at the Naval Air Test Center, Patuxent River, Md.

28 May The Secretary of Defense announced measures to strengthen the Sixth Fleet. He said that fleet readiness was to be improved by the almost continuous presence of a helicopter carrier, and by a substantial increase in the hours flown by maritime air patrols and the ship-operating days of sea patrols. This followed an earlier announcement by the Pentagon on 24 May that the Sixth Fleet would be strengthened in response to the growing Soviet naval power.

31 May As in previous months in Vietnam, strike emphasis was placed on the interdiction of Laotian entry and throughout corridors to SVN. Southern Laotian routes leading to Cambodia also received increased emphasis during the month. Although weather cancellations remained at a comparatively low level, conservation of strike sorties was still accomplished by limiting carrier sorties to 60–70 per day, resulting in a total of 2,645 sorties that delivered ordnance. Two protective reaction strikes were carried out in NVN during the month. NVN surface-to-air missile (SAM) coverage south of 20° N continued at a high level. The increased SAM threat required additional aircraft in support of strike and reconnaissance flights.

28 June A proposal by the Naval Training Command Board to consolidate all naval training was approved. The board had convened under the direction of the CNO on 8 February. Training had been under review since World War II by official study groups and boards, the first being the Hopwood Board in 1955 which recommended that training be divorced from the Bureau of Naval Personnel. Major recommendations of the Naval Training Command Board established a single training command, Chief of Naval Training, with headquarters at Pensacola, Fla. Chief of Naval Technical Training was established at Memphis, Tenn. Education and programs which had been under the Chief of Naval Personnel were placed under the new command of Director of Naval Education and Training. Three former air training staffs were consolidated into a single staff with eight training wings to be

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located at major pilot training bases. Public announcement of the new single training command was made on 21 July and became effective on 1 August.

29 June Light gull gray, Federal Standard Color No. 36440, applied to carrier aircraft was replaced with glossy light gull gray Federal Standard Color No. 16440. This change was directed by MIL-C-18263F (AS) of this date.

30 June During June in Vietnam, the realignment of carriers continued as *Midway* departed Yankee Station on 5 June, relieved by *Kitty Hawk*, and *Oriskany* commenced strike operations on 16 June. A total of 14 two-carrier days and 16 single-carrier days during the month resulted in a monthly strike sortie count of 2,431. The Navy's strike sortie count for Fiscal Year 1971 thus came to 32,230 sorties, 172 under the annual ceiling. June strike operations were under the influence of the southwest monsoons with attendant clouds and rain.

7 July The last active duty A-1 Skyraider, an NA-1E, was retired. The aircraft, which had been assigned to the Naval Air Test Center, Patuxent River, Md., and was used in many test programs there, including slow speed and ordnance release, was turned over to the Confederate Air Force, Harlingen, Texas for museum display.

13 July Deputy Secretary of Defense David Packard issued a new directive defining policy for acquisition of major defense systems. Basically, Mr. Packard sought to return authority to the military departments, subject to approval by the Secretary of Defense, at key points in the development acquisition process. Among the various points of the policy were increased emphasis upon the project manager (called program manager in the DOD directive), reiteration of the importance of maintaining a strong technology base, and the definition of the entire development-acquisition process as three distinct phases: (1) program initiation, (2) full-scale development, and (3) production/deployment. The new directive emphasized the importance of making accurate cost predictions and realistic schedule forecasts and of relating the military benefits anticipated from a new technology to the cost of the technology. To reduce the magnitude of risk, prototyping was to be part of the advanced development effort; operational suitability of a system was to be tested and evaluated before it was committed to large scale production—thus the popular description of the policy as "fly before buy."

24 July CVSGR-80 began ASW operations from *Ticonderoga*. It was the first time in naval history that the Naval Air Reserve had demonstrated the capability for immediate employment of fleet-size wings and groups, fully manned, properly equipped, and operationally ready to perform all phases of carrier operations.

26 July The Apollo 15 spacecraft was launched from the Kennedy Space Center for a lunar mission. On 30 July the lunar module Falcon commanded by Colonel David R. Scott, USAF, with Lieutenant Colonel James B. Irwin, USAF, a Naval Academy graduate, class of 1951, separated from the command ship, *Endeavor*, with Major Alfred M. Worden, USAF, and landed on the moon in the Hadley-Apennine area. The crew accumulated 66 hours, 55 minutes on the moon's surface before they departed on 2 August. Five days later, *Okinawa*, primary recovery ship for Task Force 130, accomplished the recovery of the Apollo 15 crew after splashdown in the Pacific. The mission was the first of three moon flights geared directly to scientific investigation and achieved far more than all the previous lunar missions combined.

28 July HC-7 was awarded the Presidential Unit Citation, the second Navy helicopter squadron to receive the citation for duty in Vietnam. The other helo squadron to win the award was HA(L)-3. Operating from ships at sea on Yankee Station, HC-7 SAR detachments were credited with rescuing 76 U.S. aviators from Vietnam waters. During the early stages of the conflict, the squadron had made several overland rescues in NVN under intense enemy fire.

30 July In Vietnam, with *Oriskany*, *Midway* and *Enterprise* serving intermittently on station, a total of 22 two-carrier days and nine single-carrier days resulted in a strike sortie count of 2,001. Strike operations during the month of July were disrupted when the carriers on station evaded three different typhoons—Harriet, Kim and Jean. A slight increase in SVN strike sorties occurred during the month. These were mainly visual strikes against enemy troop positions and in support of U.S. helicopter operations.

30 July The Navy accepted the first operational BQM-34E Firebee II aerial jet target. The Firebee II had been developed by Ryan Aeronautical Company under contract to the Naval Air Systems Command and was designed to maneuver at greater speeds and altitudes than the standard Firebee target previously in use. Jet-powered, the remote-controlled target system was rated at Mach 1.5, offering subsonic and supersonic mission capabilities.

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3 August Pilots of VMA-142, -131 and -133 began qualification landings in A-4Ls aboard *Independence.* During a three-day period, four active duty and 20 reserve pilots operated aboard the carrier. This was the first time that Marine Air Reserve squadrons qualified in carrier duty.

26 August VAW-124 flew the carrier-based early warning E-2B nonstop across the Atlantic. The Hawkeye left NAS Norfolk, Va., flew over Newfoundland, Canada, and Lajes, Azores, to reach *America* which was deployed to the Sixth Fleet in the Mediterranean.

31 August During the month, dual carrier operations were conducted only during the first week; and, as of the 16th, *Enterprise* filled in the remainder of the month alone on station. Thus, a total of 8 two-carrier days and 23 single-carrier days represented a near reversal of July's carrier mix, producing a strike sortie count for the month of 1,915.

30 September Single carrier operations on Yankee Station were conducted throughout the month, except for one two-carrier day. The schedule had *Enterprise* flying the first four days, *Oriskany* the middle of the month and *Midway* completing the last four days. The single carrier posture, combined with the low intended sortie rate, produced 1,243 strike sorties during the month. *Oriskany* flyers participated in a joint USAF/USN protective reaction strike in southern NVN on 21 September.

5 October HC-4 at NAS Lakehurst, N.J., accepted its first SH-2D LAMPS helicopter, making it the first fleet operating unit to use the new LAMPS configured Seasprite. One week later at NAS Imperial Beach, Calif. HC-5 became the first West Coast-based helicopter squadron to receive the new Seasprite.

8 October About one hundred officers and men of the Mobile Mine Countermeasure Command and four CH-53 Sea Stallion helicopters were airlifted from Norfolk, Va., and Charleston, S.C., to the Sixth Fleet at Souda Bay, Crete, by C-5s of the 437th Military Airlift Wing in a demonstration of the world-wide quick reaction mine countermeasures capability. A detachment of four CH-53As from HM-12 recorded the first overseas deployment of the new helicopter. The detachment began sweeping operations upon arrival at Souda Bay. From 2 to 7 November the squadron participated in the first integration of airborne minesweeping operations into an amphibious assault exercise, conducted from *Coronado* (LPD 11).

29 October HS-15, the first sea control ship squadron, was established at NAS Lakehurst, N.J. The squadron was devised tactically to protect convoys and vessels not operating with or within the protective range of carriers. Tests along these lines were conducted subsequently aboard *Guam* utilizing the SH-3H Sea King helicopters of HS-15 and Marine Corps AV-8A Harriers of VMA-513. Tests included V/STOL and helo compatibility, antisnooper and antisurface tactics, bow and cross axial landings, night operations and shipboard control of airborne intercepts.

31 October On Yankee Station during the month, single carrier operations were conducted except for the last day. *Midway* completed her final line period 10 October, with *Enterprise* taking over the next day for the remainder of the month. *Oriskany* joined the last day, and together the three carriers recorded a total of 1,024 ordnance-delivering strike sorties, 30 of them in SVN, the remainder in Laos. The air warfare posture in NVN was altered 20 October through the deployment of six MiG aircraft south of 20° N—two each at Vinh, Quan Lang and Bai Thuong.

8 November The jet-powered S-3A, the Navy's newest antisubmarine warfare aircraft, made its official roll-out at Lockheed's Burbank California facility. Christened the Viking, the aircraft was designed to replace the aging S-2 Tracker.

17 November The Office of the Assistant Secretary of Defense reported that the Navy had been designated the lead service in making aircraft ready for use in Project Grass Catcher—the interception of drug smugglers. During January and February 1972, four OV-10s were loaned to the Bureau of Customs.

30 November Preliminary evaluation of the F-14A was conducted at Grumman's Calverton, N.Y., facility by a team from NATC Patuxent River, Md. The Tomcat was designed for all fighter missions, including air-to-air combat and fleet defense.

30 November Alternating on Yankee Station, *Oriskany, Constellation* and *Enterprise* provided 22 two-carrier days on the line, delivering 1,766 ordnance-bearing strike sorties, twelve and nine of them into NVN and SVN, respectively. Two reconnaissance missions were flown during the month, with the airfield at Vinh the mission assignment. Escort aircraft on both missions expended ordnance in a protective reaction role against firing antiaircraft artillery sites near the field. Other protective reaction strikes were executed.

1971—Continued

2 December NAF Cam Ranh Bay, South Vietnam, was disestablished and patrol squadron detachments which had routinely rotated at NAF Cam Ranh Bay were deployed to NAS Cubi Point, R.P. At Cam Ranh Bay the patrol squadrons were part of the Vietnam Air Patrol Unit under the operational control of Commander, Fleet Air Wing 8 or 10. Operational tasking could also come from Commander, Task Force 77, on Yankee Station or Commander, Seventh Fleet. The patrol squadrons worked closely with Commander, Vietnam Coastal Surveillance Force. Their missions were to provide air patrol coverage for SVN along her coast line to detect any infiltration of NVN trawlers taking men and supplies into SVN. These missions were known as Market Time patrols. Patrol squadrons also provided aerial reconnaissance and ASW patrols for naval forces operating from Yankee Station and other areas of the Gulf of Tonkin and the South China Sea.

2 December Commander George W. White, at the Naval Air Test Center, Patuxent River, Md., became the first Navy test pilot to fly the F-14A Tomcat. By the end of 1971, nine of the aircraft were assigned to various flight test programs. Purchase plans had called for an eventual total of 313 aircraft—301 for operations and 12 for research and development.

8 December Amphibious Group Alpha, formed around *Tripoli*, was directed to move from Okinawa to the vicinity of Singapore in anticipation of a possible Indian Ocean deployment. This followed indications by the head of the UN relief mission in Dacca, East Pakistan/Bangladesh that as a result of the Indo-Pakistani war, which began on 3 December, evacuation of foreign civilians by means of carrier-based helicopters might be required.

8 December Commander-in-Chief, U.S. Pacific Fleet (CINCPACFLT) confirmed a requirement previously enunciated by Commander, Naval Air Force Pacific Fleet, for a system of video coverage of the entire launch and recovery sequence of carrier operations.

10 December *Enterprise* and other units from Yankee Station formed Task Force 74 and departed Vietnamese waters for the Indian Ocean. On 12 December the Royal Air Force evacuated Western nationals from East Pakistan/Bangladesh, thereby eliminating the requirement for an American evacuation operation. Task Force 74 entered the Indian Ocean on 15 December, as a show of force in connection with the Indo-Pakistani war.

12 December VX-4 reported on an extensive series of evaluations of the helmet mounted sight, the Visual Target Acquisition System, in the F-4 that had commenced in 1969. While the report cited a number of shortcomings, it concluded that the helmet sight was superior to operational equipment used by fighter pilots in air-to-air combat.

15 December VMA(AW)-224, part of CVW-15 on board *Coral Sea*, arrived on Yankee Station. VMA(AW)-224 was the first Marine Corps squadron to fly combat missions into NVN from a carrier operating on Yankee Station.

31 December During 1971 HAL-3, the Seawolves, the only light attack helicopter squadron in the Navy, flew 34,746 hours in squadron aircraft in support of their mission to provide quick reaction armed helicopter close air support for all naval forces and South Vietnamese forces operating in the southern part of SVN. During their flights in 1971, HAL-3 expended 16,939,268 rounds of 7.62mm ammunition; 96,696 2.75-inch rockets; 32,313 40mm grenade rounds; and 2,414,096 rounds of .50 cal. machine gun ammunition in carrying out their assigned missions. HAL-3 lost six aircraft during 1971.

31 December *Constellation* and *Enterprise* operated on Yankee Station together during the month until 10 December, when the latter was unexpectedly directed to transit to the Indian Ocean where she operated as

UH-1B helicopter from HAL-3 flies low over the Mekong Delta, South Vietnam NAH-002810

1971—Continued

flagship for the newly formed TF-74 for the possible evacuation of U.S. citizens from East Pakistan in connection with the Indo-Pakistani war. *Constellation's* tour was extended to the end of the month due to the new contingency operations. *Coral Sea* came on the line 15 December. A total of 2,462 ordnance delivery strike sorties were flown during the month. The number of surface-to-air missile firing incidents increased and the bold excursions by MiG aircraft into Laos prompted both the USAF and USN to develop new tactics, combining efforts, to suppress the MiG threat. A major protective reaction strike effort by both USAF and USN commenced 26 December and terminated 30 December. In this period, TF-77 flew 423 strike sorties employing all-weather A-6A systems backed up by A-7Es as pathfinders, with Dong Hoi, Quang Khe and Vinh the major targets assigned to the Navy. During the month, the Laser Guided Bomb (LGB) was introduced by squadrons aboard *Constellation*. Initially, 16 trial LGB drops were road cuts, with subsequent targets antiaircraft artillery sites. In the coming year, LGBs were to be used effectively against heretofore seemingly indestructible targets in NVN, such as heavy steel bridge structures built into solid rock.

1972

1 January The area of responsibility assigned to Commander-in-Chief, Pacific (CINCPAC), was shifted westward to include the Indian Ocean and the Persian Gulf. U.S. naval communications, refueling and logistical airstrip facilities continued under construction on the island of Diego Garcia to assist in covering the new area of responsibility for the U.S. Navy.

6 January Training Air Wing Five was established at Whiting Field, Fla. The new wing was composed of Naval Air Stations Whiting and Ellyson Fields; VT-2, VT-3 and VT-6; and HT-8. This was the first training wing established under the reorganization of the Naval Air Training Command. The wing was established to coordinate and supervise training activities that previously had been the responsibility of each station and squadron.

18 January *Enterprise* joined *Constellation* on Yankee Station following her tour in the Indian Ocean in December 1971, where she had shown force and the flag in connection with the Indo-Pakistani war and the buildup of Soviet naval forces off the Indian subcontinent.

18 January *Guam* began the first in a series of tests to analyze the sea control ship concept (SCS). SCS was a concept in which a shipboard platform would have a smaller complement of aircraft than the large carriers (CVA) and would maintain control of sea lines/lanes in low threat areas of the world. A SCS ship would be designed to carry the V/STOL aircraft as well as helicopters, in order to provide protection of underway replenishment groups, mercantile convoys, amphibious assault forces and task groups with no aircraft carrier in company.

19 January Lieutenants Randall H. Cunningham and William P. Driscoll in an F-4 of VF-96 off *Constellation* shot down a MiG-21, the first enemy aircraft downed since 28 March 1970, when Lieutenants Jerome E. Beaulier and Steven J. Barkley in an F-4 of VF-142 off *Constellation* downed a MiG-21. The 19 January action occurred during a protective reaction strike in response to earlier antiaircraft artillery and surface-to-air missile firings from the area which had menaced an RA-5C reconnaissance plane and its escorts. This accounted for the Navy's 33rd MiG shot down in the Vietnam war since the first shoot down on 17 June 1965, downed by Commanders Louis C. Page and John J. Smith in an F-4 of VF-21 off *Midway*.

21 January The S-3A Viking, the Navy's newest ASW aircraft, conducted its maiden test flight from Lockheed's Palmdale, Calif., facility. The S-3A met the Navy's requirements for a 400 knot plus aircraft with a 2,000 mile sub hunting range to replace the aging S-2 Tracker. The S-3A, while about the same size as the S-2, had twice the speed and range of the Tracker. It had been equipped with the latest sensor and weapon systems and could cover nearly three times the area of the S-2 Tracker.

31 January With only light ground action, limited troop contacts and the withdrawal of U.S. ground troops continuing during the month, the level of air operations also remained low, a situation which continued generally throughout the first three months of the year. During January, a total of only eight Navy tactical air attack sorties were flown in South Vietnam (SVN). In North Vietnam (NVN), there was very little attack effort except for some protective reaction strikes. *Coral Sea*, *Constellation* and *Enterprise* served intermittently on Yankee Station during the month.

11 February As a result of the shift from conventional to jet aircraft, the Navy announced that the Aviation Machinist's Mate Class B school on reciprocating engines, located at the Naval Air Technical Training Command, NAS Memphis, Tenn., was closing.

1972—Continued

LT Cunningham shows how he and LT(jg) Driscoll bagged MiGs 1151717

Pre-flight pilot briefing for combat mission over Vietnam.

1972—Continued

11 February The Navy announced that the development and installation of mufflers on engine test cells at the Naval Air Rework Facility, Alameda, Calif., had eliminated 85 percent of the audible noise in testing jet engines for the A-3.

29 February During the month, naval air attack sorties in SVN had risen to 733 compared to 8 during January. The increase was due to the preemptive operations by allied forces in preparation for an expected large-scale enemy offensive during Tet which did not materialize. *Constellation, Coral Sea* and *Hancock* served overlapping tours on Yankee Station, assuring two to three carriers on station at a time during most of the month.

10 March There were limited attack strikes into NVN; however, protective reaction strikes increased significantly. During the period 5 January through 10 March there were 90 protective reaction strikes by USN and USAF aircraft against surface-to-air missile and antiaircraft artillery installations, compared to 108 such raids during the entire year of 1971.

16 March HAL-3, the only armed UH-1 Navy helicopter squadron to serve in Vietnam, was disestablished. HAL-3 and VAL-4 were the only Navy air units to be homeported in-country. HAL-3 provided valuable gunship support for Navy and Army riverine operations in the Mekong Delta from 1967 to their disestablishment. During this time HAL-3 pioneered various tactics in support of patrol boats and shore installations. They operated from various bases in the Mekong Delta and from specially-equipped Patrol Craft Tenders (AGP) (former LSTs).

23 March VMA-513 completed the Harrier DOD sortie rate validation and demonstrated the capability of the AV-8A to respond rapidly and repeatedly to requests for close air support while operating from austere forward bases. During the ten-day test, the squadron flew 376 sorties with a complement of six aircraft.

24 March A QF-4B target aircraft that the Naval Air Development Center, Warminster, Pa., had converted from a combat configuration into a maneuvering target, was delivered to the Naval Missile Center for testing. The QF-4B would fulfill the requirement for a full-size, high-altitude, supersonic, maneuvering aerial target capable of flying at altitudes in excess of 50,000 feet and at airspeeds exceeding twice the speed of sound.

29 March The BQM-34E, supersonic Firebee II, was utilized by the Atlantic Fleet Weapons Range for the first time in missile defense exercises with *Wainwright* (DLG 28). The target was launched from a DP-2E at an altitude of 20,000 feet and accelerated to Mach 1.52 while testing the ship's ability to withstand penetration of high altitude, high speed enemy craft.

29 March Due to the fleet requirements for qualified aircrew personnel, the Naval Air Technical Training Unit's Photographer's Mate Class "A" School initiated flight training again as part of the course. The flight training requirements for the Photographer's Mate Class "A" School had been dropped 16 years earlier.

30 March Naval Air attack sorties in SVN had dropped from 733 in February to 113 during March. On 23 March the U.S. canceled further peace negotiations in Paris, France, because of a lack of progress in the talks. This was followed by the North Vietnamese invasion of SVN. This "Easter or Spring Offensive" was the result of the long buildup and infiltration of NVN forces during previous months and presaged some of the most intense fighting of the entire war. The NVN invasion prompted increased air operations by the carriers in support of South Vietnamese and U.S. forces. The carriers on Yankee Station when NVN invaded on 30 March were *Hancock* and *Coral Sea*. During the month four carriers had rotated on Yankee Station; they were *Constellation*, *Kitty Hawk*, *Coral Sea* and *Hancock*.

1 April VAL-4, the last Navy combat force in Vietnam, was withdrawn. VAL-4 flew the OV-10 Bronco and its mission had been to provide quick reaction and close support for river patrol boats and the mobile riverine forces in South Vietnam.

5 April Operation Freedom Train involved Navy tactical air sorties against military and logistic targets in the southern part of NVN that were involved in the invasion of SVN. The operating area in NVN was limited initially to between 17° and 19°N. However, special strikes were authorized against targets above the l9th parallel on various occasions. The magnitude of the North Vietnamese offensive indicated that an extended logistics network and increased resupply routes would be required to sustain ground operations by NVN in their invasion of SVN. Most target and geographical restrictions that were placed in effect since October 1968 concerning the bombing in NVN were lifted gradually and the list of authorized targets expanded. Strikes in NVN were against vehicles, lines of communication (roads, waterways, bridges, railroad bridges and railroad tracks), supply targets, air defense targets

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and industrial/power targets. Aircraft involved in Freedom Train operations were from *Hancock*, *Coral Sea*, *Kitty Hawk* and *Constellation*. By the end of April, operations were permitted in NVN throughout the region below 20° 25'N and many special strikes above the 20th parallel had also been authorized.

6 April Heavy air raids were conducted against NVN, the first since October 1968 when a halt was called on heavy raids. Since the bombing halt in October 1968, the U.S. air effort had been concentrated on interdicting men and supplies moving along the routes into SVN. Except for protective reaction strikes and a five-day operation at the end of 1971, called Proud Deep, very few heavy attack missions had been flown into NVN. The U.S. heavy reactionary raids were prompted by a massive invasion of SVN by six North Vietnamese divisions, that by 6 April involved 12 of North Vietnam's 13 divisions. The objectives of these heavy raids were: (1) destruction of all NVN aggression-supporting resources, (2) harassment and disruption of enemy military operations, and (3) reduction and impediment of movements of men and materials through southern NVN.

6 April Elements of two Phantom II Marine squadrons, VMFA-115 and VMFA-232, flew into Da Nang from Iwakuni, Japan, as part of the reinforcing effort in support of SVN troops, particularly around Quangtri. VMFA-212 arrived from Kaneohe, Hawaii, on 14 April. Targets for Marine sorties were enemy tanks, trucks and troops, giving SVN forces a chance to regroup and reestablish a line of defense north and west of Hue.

6 April The Navy's new air superiority fighter, the F-14 Tomcat, arrived at Naval Air Test Center, Patuxent River, Md. The swing-wing, twin-engine Grumman aircraft arrived for a series of catapult launches, automatic carrier landing system checks, airspeed system calibrations and weight and balance checks to determine its suitability for naval operations.

7 April During the week ending 7 April, the Navy flew 680 sorties in SVN to counter the NVN troop concentrations and their equipment flow, and to support the SVN forces with close air support, direct air support and interdiction missions. This was more than five times the number of sorties the Navy flew for the entire month of March.

11 April The Harpoon anti-ship missile underwent its first drop test at the Naval Missile Center, Point Mugu, Calif. The missile, developed by McDonnell Douglas Corporation, was dropped from 20,000 feet by a P-3 Orion operated by the Missile Center. The Harpoon was designed to be launched from aircraft or ships from a stand-off range against enemy ship targets.

12 April The new P-3C Acoustic Sensor Operator Trainer (Device 14B44) was made available for training aircrew personnel at Fleet Aviation Specialized Operational Training Group, Pacific Detachment. It was designed to train aircrewmen in the operation of sensor stations on the P-3C Orion aircraft. The simulator could duplicate the real world conditions of underwater acoustical data and also simulate the detection, classification and localization procedures of the AQA-7 Jezebel system on board the P-3C Orion.

14 April The Navy averaged 191 sorties per day in SVN, a 97 percent increase over the previous week. Sorties concentrated west and north of Quangtri City with interdiction and direct air support flown in the area. Carriers on Yankee Station were *Constellation*, *Hancock*, *Coral Sea*, and *Kitty Hawk*.

16 April Apollo 16 was launched successfully from Kennedy Space Center, Fla., for a lunar highlands investigation. The astronaut team was composed of Captain John W. Young, Lieutenant Colonel Charles M. Duke, USAF, and Lieutenant Commander Thomas K. Mattingly. Astronauts Young and Mattingly, the Navy members of the Apollo 16 crew, landed on the moon four days later to conduct scientific research.

16 April Aircraft from *Coral Sea*, *Kitty Hawk* and *Constellation* flew 57 sorties in the Haiphong area in support of U.S. Air Force B-52 strikes on the Haiphong petroleum products storage area. This operation was known as Freedom Porch.

25–30 April An example of Naval Air action against enemy positions inside central and south SVN during NVN's spring offensive occurred the last six days of April as *Hancock's* VA-55, -164 and -211 struck enemy held territory around Kontum and Pleiku and *Constellation's* VA-146, -147 and -165, hit areas around the besieged city of Anloc in support of SVN troops, some only 40 miles outside the capital of Saigon. Targets attacked included artillery fire bases, enemy tanks, bunkers, troop positions, ammunition caches and gun emplacements.

27 April HC-1, aboard *Ticonderoga*, recovered Apollo 16 after it splashed down in the south Pacific.

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28 April The AIM-54A Phoenix missile was launched from an F-14 for the first time. The aircraft was flying from Point Mugu, Calif.

30 April Operations by Navy and Marine Corps aircraft in Vietnam had expanded significantly throughout April, with a total of 4,833 Navy sorties in SVN and 1,250 sorties in NVN. The Marine Corps flew 537 sorties in SVN. The dramatic increase in Navy sorties was supported by directing all four carriers operating in the western Pacific to the support of operations in Vietnam. *Coral Sea* and *Hancock* were on Yankee Station when the North Vietnamese spring offensive began. *Kitty Hawk* was ordered to Yankee Station on 1 April and arrived on 3 April. *Constellation* was ordered to Yankee Station on 2 April and arrived on the line 7 April. Between 8 and 30 April the Navy effort grew gradually from 240 sorties a day to a peak of over 300, resulting in a monthly average of 270 sorties per day.

1 May While flying weather was good for the first seven days of May, the Navy averaged 97 attack sorties daily into NVN while flying an average of 168 a day into SVN. The Navy's efforts at this time were still concentrated in support of SVN forces attempting to stem the NVN offensive, then a month old. SVN troops were retreating toward Hue. Quangtri City had fallen 1 May and an attack against Hue appeared imminent. The city of Anloc remained surrounded by the NVN. The first week of May also witnessed NVN's newly deployed combat support surface-to-air missiles, the SA-7 Grail infrared-seeker missile.

4 May The Navy's first night carrier landing trainer was unveiled at NAS Lemoore, Calif. This trainer permitted pilots to simulate night landings of the A-7E on carrier decks.

5 May VP-9 aircraft departed NAS Moffett Field, Calif., for NAS Cubi Point, R.P., to augment the VP units tasked with ocean surveillance air patrols in relationship to the mining of NVN harbors and the corresponding movement of Communist bloc ships.

6 May In the second most active dog-fight day of the war, Navy flyers shot down two MiG-17s and two MiG-21s. Scoring the kills were flyers from VF-111 and VF-51 aboard *Coral Sea* and two planes from VF-114 off *Kitty Hawk*.

8 May For the first time in more than three weeks, U.S. forces attacked targets in the vicinity of Hanoi, with Navy pilots flying 50 attack sorties. Another 96 sorties were flown in southern NVN between the capital and the DMZ, while 99 were directed against the enemy in SVN.

9 May Operation Pocket Money, the mining campaign against principal NVN ports, was launched. Early that morning, an EC-121 aircraft took off from Da Nang airfield to provide support for the mining operation. A short time later, *Kitty Hawk* launched 17 ordnance-delivering sorties against the Nam Dinh railroad siding as a diversionary air tactic. Poor weather, however, forced the planes to divert to secondary targets at Thanh and Phu Qui which were struck at 090840H and 090845H, Vietnam time, respectively. *Coral Sea* launched three A-6A and six A-7E aircraft loaded with mines and one EKA-3B in support of the mining operation directed against the outer approaches to Haiphong Harbor. The mining aircraft departed the vicinity of *Coral Sea* at 090840H in order to execute the mining at precisely 090900H to coincide with the President's public announcement in Washington that mines had been seeded. The A-6 flight led by the CAG, Commander Roger E. Sheets, was composed of Marine Corps aircraft from VMA-224 and headed for the inner channel. The A-7Es, led by Commander Leonard E. Giuliani and made up of aircraft from VA-94 and VA-22, were designated to mine the outer segment of the channel. Each aircraft carried four MK 52-2 mines. Captain William R. Carr, USMC, the bombardier/navigator in the lead plane, established the critical attack azimuth and timed the mine releases. The first mine was dropped at 090859H and the last of the field of 36 mines at 090901H. Twelve mines were placed in the inner segment and the remaining 24 in the outer segment. All MK 52-2 mines were set with 72-hour arming delays, thus permitting merchant ships time for departure or a change in destination consistent with the President's public warning. It was the beginning of a mining campaign that planted over 11,000 MK 36 type destructor and 108 special MK 52-2 mines over the next eight months. It is considered to have played a significant role in bringing about an eventual peace arrangement, particularly since it so hampered the enemy's ability to continue receiving war supplies.

10 May Operation Linebacker I, the heavy strike of targets in most of NVN, evolved and lasted until restrictions on operations above 20°N were imposed 22 October. The operation was an outgrowth of Freedom Train and the President's mining declaration which also stated that the U.S. would make a maximum effort to interdict the flow of supplies in NVN. On this first day of Linebacker I, the Navy shifted its attacks from targets in southern NVN to the coastal

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LT Dose of VF-92 explains MiG manuever 1151760

region embracing Haiphong north to the Chinese border. In all, 173 attack sorties were flown in this region this day, although another 62 were directed into SVN in continuing support of allied forces there.

It was the most intensified air-to-air combat day of the entire war. Navy flyers shot down eight MiGs. An F-4 Phantom II, from VF-96 on board *Constellation*, while engaged in aerial combat over Haiphong shot down three MiGs for the first triple downing of enemy MiGs by one plane during the war. Lieutenant Randall H. Cunningham was the pilot and Lieutenant (jg) William P. Driscoll was the RIO of the F-4. These three MiG downings, coupled with their 19 January and 8 May downing of two MiGs, made them the first MiG aces of the Vietnam War. Three other kills were scored by planes of VF-96 and one by VF-92 off *Constellation* and one by VF-51 off *Coral Sea*.

During the five and one-half month period of Linebacker I, the Navy contributed more than 60 percent of the total sorties in NVN, with 60 percent of this effort in the "panhandle", the area between Hanoi and the DMZ. Tactical air operations were most intense during the July-September quarter with 12,865 naval sorties flown. Most attack sorties in NVN fell into two classes—armed reconnaissance and strike. The former was directed usually against targets of opportunity within three main areas—near Hanoi, Haiphong and the Chinese border. Strike operations were preplanned and usually directed at fixed targets. Most types of fixed targets, not associated with armed reconnaissance, required approval by the Commander-in-Chief, Pacific, or by the Joint Chiefs of Staff, prior to attack. Principal Navy aircraft were the A-7 and A-6, which accounted for roughly 60 and 15 percent of the Navy's attack sorties, respectively. About 25 percent of the Navy's effort was at night. Carriers participating in the initial May-June operations from Yankee Station were *Constellation*, *Coral Sea*, *Hancock*, *Kitty Hawk*, *Midway* and *Saratoga*.

10 May Commander, Naval Air Systems Command, promulgated a plan for management of advanced prototype development and demonstration of a thrust-augmented wing Attack Plane-Fighter Vertical/Short Takeoff and Landing aircraft. A prototype development manager was to be established under the Deputy Commander for Plans and Programs and was to be assisted by a small cadre of management and technical personnel located in the Assistant Commander for Research and Technology's organization and at the contractor's facility.

11 May Naval aircraft flying from *Coral Sea*, *Midway*, *Kitty Hawk* and *Constellation* laid additional mine fields in the remaining ports of significance in NVN—Thanh Hoa, Dong Hoi, Vinh, Hon Gai, Quang Khe and Cam Pha as well as the Haiphong approaches. This early mining was not confined solely to the seven principal ports. Other locations were also seeded early in the campaign, including the Cua Sot, Cap Mui Ron, and the river mouths, Cua Day and Cua Lac Giang, south of Don Son and the Haiphong port complex.

12 May The 72-hour delay arming time on the initial mines laid at Haiphong was up at 120900H Vietnam time. Nine ships at Haiphong had taken advantage of the grace period to depart the port. Twenty-seven ships remained. Both Soviet and Soviet-bloc ships headed for Haiphong at the time had diverted to different destinations, thus avoiding a direct confrontation with the mine fields.

13 May CH-53 and CH-46 helicopters of HMM-164 aboard *Okinawa* airlifted 1,000 South Vietnamese Marines from SVN's 369th Marine Corps Brigade from a landing zone near Hue to an area 24 miles northwest of the city behind NVN lines.

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CH-53A Sea Stallion supplying Marines S-54231-A

14 May During the first two weeks of May, and the fourth day of Linebacker I, 992 military targets in NVN had been attacked by Navy pilots. Storage areas accounted for 17 percent, roads and trucks 15 percent, railroads 13 percent and bridges other than rail for 11 percent of the targets hit. The number of targets attacked would be increased by nearly 50 percent by the end of the month as Linebacker gained momentum.

17 May Two A-4 Marine squadrons, VMA-311 and -211, arrived from Japan at the recently reactivated base at Bien Hoa, SVN. These units concentrated air strikes against enemy troops surrounding An Loc and responded to calls from counterattacking SVN forces attempting to gain ground in adjacent areas.

18 May The scope of the air war in Vietnam changed when the Uong Bi electric power plant near Haiphong was struck. This marked the beginning of strikes on a class of targets formerly avoided, including power plants, shipyards and the Haiphong cement plant. Over 60 of the Navy's more than 200 sorties into NVN that day were in the Haiphong region, the first since 10 May.

25 May The Secretary of the Navy signed the Incidents at Sea Agreement between the U.S. and

1972—Continued

USSR. Since 1945 Naval Aviation history recorded 15 serious incidents of firing on U.S. Navy planes by Communist bloc aircraft. The agreement was designed to help prevent unintentional accidents between the two navies and help reduce tension on or over the high seas.

31 May During the month, the Navy had flown 3,949 attack sorties against NVN as compared to 1,250 during April; continuing attack sorties into SVN numbered 3,290 for May compared to 4,833 in April. While naval sorties in SVN had dropped by over 500 from the previous month of April, USMC air attack sorties in support of allied forces in SVN increased from 543 in April to 1,502 during May. Targets in NVN hit by naval planes increased to 2,416 in May from 719 during April, with railroads accounting for 16 percent, roads and trucks 14, storage areas 13 and bridges 10 percent of the targets hit. Enemy MiGs shot down over NVN by naval flyers during May totaled 16, including 11 MiG-17s, two MiG-19s and three MiG-21s, while the Navy lost six planes, including two F-4s and two A-7s to SA-2 surface-to-air missiles, and one F-8 and one RA-5 to unknown causes, probably surface-to-air missiles. With *Saratoga* joining the other five carriers on Yankee Station during the month, carrier strength totaled six, the greatest number since the war began. Meanwhile, by the end of the month, the term "quasi-stalemate" best described the war situation in SVN. The SVN army was still regrouping and holding on, and the forward thrust of the NVN seemed to be halted.

20 June VMA(AW)-533 with A-6A Intruders arrived at the remote jungle base of Nam Phong, known as the "Rose Garden," in the east central plains of Thailand in juxtaposition to the NVN attacks in the SVN highlands. Roads, aircraft parking and storage areas had been hacked out of the jungle by a joint USN/USMC engineering team in preparing this advance base. Between 23 May and 18 June the following Marine Corps units had arrived in preparation for operations against the invading NVN forces: Task Force Delta; VMGR-152, Det D with KC-130 Hercules; H&MS-36, Det D with CH-46 Sea Knights; VMFA-115 with F-4B Phantom IIs and VMFA-232 with F-4J Phantom IIs.

21 June VF-31 aircraft from *Saratoga* shot down a MiG-21. This was the third MiG downing by Navy pilots during June. On 11 June VF-51 aircraft from *Coral Sea* shot down two MiG-17s in the Nam Dinh area of NVN.

21 June The Chief of Naval Material directed that the Commander, Naval Electronic Systems Command (ELEX) take on the responsibility and authority for final decisions involving development, acquisition and support for equipment and capabilities providing platform-to-platform command, control and communications (C3) involving satellites, air, surface and sub-surface elements. The directive involved a proposal to rename the ELEX to reflect this assignment and prohibited large scale lateral movements between the systems commands. Despite these qualifications, a dispute arose as to whether ELEX should undertake detailed management of most electronic material program or apply control through broad gauged decisions. The decision has resulted in the transfer of Project Management Offices for Space (PM-16) and Reconnaissances, Electronic Warfare and Special Operations (or REWSON—PM-7) from the Chief of Naval Material to the Commander, ELEX (as PME-107) and in the redesignation of the Naval Air Systems Command's Electronic Warfare Project Management Office as REWSON followed by the physical merging of the two REWSON project management offices with a double hatting of the incumbents.

23 June HS-2, -15, -74 and -75 came to the aid of flood stricken residents in the Wilkes-Barre, Scranton and Pottstown areas of Pennsylvania. Besides the extensive rescue and evacuation work conducted by these squadrons they were also involved in transporting medical supplies and personnel, equipment, food and clothing to the flood victims.

29 June NAVAIR announced the formation of a "Buddy-Up" Program whereby reserve officers attached to Naval Air Systems Command Reserve Units would establish a working relationship with various Naval Air Systems Command activities. This was envisioned as developing into a means whereby the reserve officers would identify and undertake to perform meaningful project work for the activities.

30 June Navy tactical air attack sorties in SVN during June were 2,021. This was a considerable decrease in comparison to the April and May figures. The decrease reflected the stalemate on the ground in SVN. Navy attack sorties against Linebacker I targets in NVN involved 3,844 sorties in June. Linebacker I attack sorties against the road transport system, water transport craft and storage targets increased from the pre-June levels. The greatest number of Navy concentrated strikes, which involved 10 or more attack aircraft striking a compact cluster of tactical targets, was flown from April through June and comprised 40 percent of the total Navy attack effort.

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30 June The Naval Air Rework Facility and the Naval Air Station at North Island, Calif., submitted to the Naval Civil Engineering Laboratory an interim report on pollution studies. A follow-on final report was published in August with the title "Environmental Collection Data Base." It contained methodological information on effective means of measuring the extent of various types of environmental pollution, related some pollutants to particular industrial or operational activity, and contained quantitative data on the extent of pollution found to be present. Thus, it provided an important first step in devising plans to lessen the environmental impact of pollution produced by naval operational and industrial air activities.

1 July A reorganization of the Naval Air Training system occurred when the Naval Air Advanced Training Command was disestablished and the Chief of Naval Air Training was relocated to Corpus Christi, Tex. This action was part of the Navy's effort to consolidate training under a concept called "single base training." When pilots completed their primary training they were assigned to a specific program involving training in either jets, props or helos. This training would be completed at one specific training base where the pilots would finish their instruction before receiving their wings. The new structure/organization came under the control of the Chief, Naval Air Training Command.

1 July Tactical Electronic Warfare Wing 13 (TACELWING-13) was disestablished at NAS Whidbey Island, Wash. It had been established to introduce the complex electronic warfare EA-6B Prowler into fleet service.

15 July A three-day test demonstration of the ability of the UH-2C Seasprite to fire Sparrow III missiles against surface targets was completed at the Pacific Missile Range, Sea Test Range, Calif. The helicopter, modified to carry a single missile mounted on a rail launcher, fired four missiles during the course of the demonstration.

22 July *Tripoli* arrived in Subic Bay, R.P., with HMM-165 on board to provide relief support after record rains caused disastrous flooding in the central Luzon valley between Manila and Lingayen Gulf. Tens of thousands of people were affected and additional ships were tasked for Philippine flood relief operations.

31 July The Navy began night operations regularly on 24 May and during June and July night sorties constituted 30 percent of the total Navy attack effort in NVN, relying primarily on the A-7 and A-6. About 45 percent of the Navy armed reconnaissance effort was at night during June and July. The A-7 flew about as many night sorties as it did day sorties. The A-6 flew more night than day armed reconnaissance sorties during the summer months. The total number of Navy night sorties during June and July were 1,243 and 1,332 respectively. Three to four carriers were maintained on Yankee Station during the summer months. The carriers involved were *Constellation*, *Coral Sea*, *Hancock*, *Kitty Hawk*, *Midway*, *Saratoga*, *Oriskany* and *America*.

31 July There was a dramatic change in NVN's air defense effort during the summer months. During the earlier periods of April and May, the Navy air effort in NVN involved intensive air-to-air combat and a large number of surface-to-air missile (SAM) firings. In contrast, during June and July there was an increase in Linebacker I Navy attack sorties, but there was a decrease in the number of air-to-air combat incidents and SAM firings. MiG kills decreased to three in June by Navy aircraft and zero in July compared to 16 MiG kills by Navy aircraft in May. After mid-June, almost all North Vietnamese aircraft sighted or engaged were MiG-21s. Navy/MiG encounters were primarily against MiG-21s, representing a considerable change from May, when 11 of 16 Navy kills were MiG-17s.

5 August *New Orleans* relieved *Tripoli* in Philippine flood relief operations. HMM-165 transferred to *New Orleans* to continue support due to their knowledge of terrain and problems inherent in the flood relief operations.

5 August A Naval Air Test Center pilot made the first fully automated landing aboard *Ranger* in an F-4J Phantom II. The test landing device linked the plane's controls with a computer aboard ship and enabled the aircraft to land with the pilot's hands off the controls. The system was developed to make safer landings at night and in low visibility conditions.

7 August An HC-7 Det 110 helicopter, aided by planes from *Saratoga* and *Midway*, conducted a search and rescue mission for a downed aviator in NVN. The pilot of an A-7 aircraft from *Saratoga* had been downed by a surface-to-air missile about 20 miles inland, northwest of Vinh, on 6 August. The HC-7 helicopter flew inland over mountainous terrain to rescue the pilot. The rescue helicopter used its search light to assist in locating the downed pilot and, despite receiving heavy ground fire, was successful in retrieving the pilot and returning to an LPD off the coast of NVN. This was the deepest penetration of a rescue heli-

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copter into NVN since 1968. HC-7 Det 110 continued its rescue efforts and by the end of 1972 it had successfully conducted 48 rescues during the year, 35 of those under combat conditions.

17 August The Naval Material Command and the Air Force Systems Command reached an agreement relating to Navy and Air Force responsibilities for aircraft engine production at the Pratt & Whitney Aircraft Divisions, East Hartford, Conn., and West Palm Beach, Fla. The Memorandum of Agreement provided that an Air Force Deputy Plant Representative and staff be assigned to the Naval Plant Representative Office (NAVPRO) to represent the F-15 Program Director on F-15 matters and to advise the NAVPRO on the in-plant management of Air Force engine programs.

29 August John Konrad, Vought Aeronautics test pilot, made the first flight in a two-place version of the A-7E that the company had developed to demonstrate to the Air Force and the Navy the advantages of such a configuration for use as an advanced trainer or for such tactical duties as electronics countermeasures.

31 August Although Marine Corps air efforts were concentrated in SVN, the Marines contributed significantly to U.S. efforts in NVN to prevent offloading and transportation of supplies from Chinese merchant ships at Hon La and Hon Nieu. HMA-369, with seven AH-1J helicopters, using the Cobra weapons system, operated from *Denver* (LPD 9) against water transport traffic in late June, and from *Cleveland* (LPD 7) in early August. HMA-369's operations during August were extended to include night surveillance and attack. In addition HMA-369 helicopters served as airspotters for naval gunfire and as airborne tactical controllers for fixed-wing aircraft attacking lucrative targets.

The Navy flew 4,819 sorties in August against NVN. The downward trend of Navy attack sorties in SVN continued during July and August. The stepped-up campaign in the Mekong Delta accounted for a sharp rise in Marine Corps air activity in SVN. The Marine Corps air effort rose from 8 percent of the total air effort in SVN during May to 43 percent during August.

11 September VMFA-333 flying off *America* downed a MiG-21 near Phuc Yen airfield in North Vietnam. This was the only MiG kill for the Navy/Marine Corps during September and brought the grand total of MiGs downed by Navy/Marine Corps pilots to 55 since the war began.

30 September During September the number of Navy tactical air attack sorties decreased from the level flown in August. There were 3,934 Navy tactical air attack sorties flown into NVN, down by about 800 from the August total. During July and August, more than 45 percent of the Navy armed reconnaissance sorties were at night. However, in September, only 31 percent of the armed reconnaissance sorties were flown at night. In SVN the Navy flew 1,708 tactical air attack sorties, a decrease from the level flown in August. About half of the Navy's tactical air sorties were close and direct air support sorties in SVN. Marine Corps activity stayed relatively high during September because of stepped-up ground activity in the Mekong Delta. Marine Corps tactical air sorties for September were 1,296. Carriers operating on Yankee Station during the month of September were *Hancock*, *Kitty Hawk*, *Midway*, *Saratoga*, *Oriskany* and *America*.

1 October The first two F-14 Tomcat squadrons were formed at NAS Miramar San Diego, Calif. The new squadrons carried the designations VF-1 and VF-2. These squadrons were established to receive the Navy's first new fighter plane in 14 years, the McDonnell Douglas F-4 Phantom II was introduced in 1958.

8 October The first F-14 Tomcat, the Navy's new sophisticated fighter, was delivered to VF-124. VF-124 was designated the F-14 training squadron for all F-14 fighter squadrons of the Pacific and Atlantic Fleet.

23 October The U.S. ended all tactical air sorties into NVN above the 20th parallel and brought to a close Linebacker I operations. This goodwill gesture of terminating the bombing in NVN above the 20th parallel was designed to help promote the peace negotiations being held in Paris, France. During May through October, the Navy flew a total of 23,652 tactical air attack sorties into NVN. U.S. tactical air sorties during Linebacker I operations helped stem the flow of supplies into NVN, thereby limiting the operating capabilities of North Vietnam's invading army. Carriers involved in Linebacker I operations were *Enterprise*, *Constellation*, *Coral Sea*, *Hancock*, *Kitty Hawk*, *Midway*, *Saratoga*, *Oriskany* and *America*.

31 October During October the total number of Navy tactical air sorties into NVN was 2,661. Tactical air sorties into SVN during October were 2,097 and 1,599 for the Navy and Marine Corps, respectively. Air operations in SVN followed the general pattern of the ground war. NVN increased their small-scale attacks throughout SVN in an apparent effort to gain territory before a possible cease-fire. Thus, the main objective

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of Navy and Marine Corps tactical air sorties were close and direct air sorties in support of allied ground troops, with a view toward frustrating the enemy's desire to acquire territory before a cease-fire agreement was signed.

22 November Groundbreaking ceremonies for the new Naval Aviation Museum building were officiated by Admiral Arthur W. Radford, USN (Ret). Admiral Radford, former Chairman of the Joint Chiefs of Staff, was the Chairman of the Naval Aviation Museum Association, Inc., a non-profit organization of Naval Aviation enthusiasts who labored since 1965 to finance and create the first part of the new museum building. All funds for the building of the first phase of the museum were contributed by private individuals and organizations. The museum was designed to be built in three phases. The first phase consisted of 65,000 sq. ft. of floor space with future expansion of 140,000 sq. ft. The Naval Aviation Museum was established at NAS Pensacola, Fla., in December 1962 by the authority of the Secretary of the Navy. It had been housed in a temporary building until enough money had been accumulated to build the first phase of the new museum building.

30 November The majority of the Navy's tactical air sorties in SVN during October and November can best be described as close and direct air support attacks. Targets attacked during these sorties accounted for more than 75 percent of all known targets during October and November. The percentage of Navy sorties flown for interdiction purposes in SVN decreased markedly during October and November compared to the previous levels in the spring and summer months.

13 December An HC-1 Detachment Five SH-3G Sea King helicopter, stationed aboard *Oriskany*, rescued a VFP-63 pilot involved in operations in the Tonkin Gulf while on Yankee Station. This was the fifteenth pilot rescued by HC-1 detachments while they were operating aboard a carrier on Yankee Station during 1972. During 1972 HC-1 rescued a total of 36 people, including the 15 pilots.

17 December During the period 23 October through 17 December there was a U.S. bombing halt above the 20th parallel in NVN. No MiG kills or U.S. losses were recorded during this period. Three to four carriers were maintained on Yankee Station during the bombing halt. Carriers alternating on Yankee Station were: *Enterprise*, *Kitty Hawk*, *Midway*, *Saratoga*, *Oriskany*, *America* and *Ranger*.

18 December Linebacker II operations were initiated on 18 December when negotiations in the Paris peace talks stalemated. The Linebacker II operations ended on 29 December when the North Vietnamese returned to the peace table. These operations involved the resumed bombing of NVN above the 20th parallel and was an intensified version of Linebacker I. The reseeding of the mine fields was resumed and concentrated strikes were carried out against surface-to-air missile and antiaircraft artillery sites, enemy army barracks, petroleum storage areas, Haiphong naval and shipyard areas, and railroad and truck stations. Navy tactical air attack sorties under Linebacker II were centered in the coastal areas around Hanoi and Haiphong. There were 505 Navy sorties in this area during Linebacker II. Between 18 and 22 December the Navy conducted 119 Linebacker II strikes in North Vietnam. Bad weather was the main limiting factor on the number of tactical air strikes flown during Linebacker II. The following carriers participated in Linebacker II operations: *Enterprise*, *Saratoga*, *Oriskany*, *America* and *Ranger.*

19 December HC-1 helicopters, aboard *Ticonderoga,* recovered the crew of Apollo 17 after splashdown. The Apollo 17 crew consisted of Naval

Helicopter from HS-6 recovering astronauts from Apollo 14 lunar mission.

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Apollo 14 capsule after splashdown in the Pacific Ocean awaiting recovery.

Aviators Captain Eugene A. Cernan and Commander Ronald E. Evans and geologist Harrison H. Schmidt. This recovery marked the end of NASA's Apollo lunar program. Naval Aviation squadrons and naval surface units performed all the recovery operations for the 11 Apollo missions. There were 33 astronauts involved in the Apollo program, 22 of whom had Navy backgrounds.

23 December An example of attack squadron action during the year is portrayed by the following partial roundup of operations by VA-56 which ended its seventh line period this date. Flying combat with CVW-5 off *Midway* during portions of every month since April, the squadron recorded a total of 180 days on the line, engaged in 5,582.9 combat hours, flew over 3,000 sorties, performed 2,090 and 781 day and night carrier landings, respectively, and amassed a total of 6,301 flight hours during its line periods. It conducted strikes against such targets as the Haiphong, Ninh Binh, Ha Tinh, Kien An, Tam Da and Than Hoa bridge complexes, the Haiphong, Vinh, Doung Nham and Nam Dinh petroleum areas, and the Gia Lam railroad yards across the Red River from Hanoi. Other actions included mining operations and protective flights for four search and rescue (SAR) missions, including one at night inside NVN, and one for two Air Force officers downed off the coast. During the line periods, four of the unit's A-7Bs were lost to antiaircraft artillery and surface-to-air missile fire, with two pilots taken prisoner-of-war, one listed as missing in action, and one retrieved.

25 December A Christmas day bombing/tactical air attack recess went into effect during which none of the U.S. air services flew sorties. Since the beginning of the heavy raids against the Hanoi/Haiphong complex on 18 December to persuade NVN to return to the conference table and release the American POWs, 420 raids by B-52s had been conducted, with 18 December accounting for 122, the highest number. Carrier strikes from TF-77 and tactical aircraft from Thailand supplemented the raids, mainly to suppress missile sites and confuse the NVN air defense systems. Heavy attacks were resumed on 26 December, with 113 B-52 raids, the next highest sortie count. Targets, as before, were powerhouses, railroads, missile assembly points, command and control stations, fuel reserves, airfields and railroad marshaling yards. By the end of the 27th, intercepted enemy messages indicated NVN was losing its missile potential as new missiles could not be moved from assembly points to the launchers.

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28 December An F-4J Phantom II, from VF-142 on board *Enterprise*, downed a MiG-21. This was the 24th MiG downed by Navy/Marine Corps pilots during 1972. The total MiG downings by Navy/Marine Corps pilots during the Vietnam war from the first in June 1965 through December 1972 were 56. Statistics for Navy/Marine Corps downings of MiGs during 1972:

Constellation:	VF-96, 8 MiGs
	VF-92, 1 MiG
Coral Sea:	VF-51, 4 MiGs
	VF-111, 1 MiG
Midway:	VF-161, 4 MiGs
Kitty Hawk:	VF-114, 2 MiGs
Saratoga:	VF-103, 1 MiG
	VF-31, 1 MiG
America:	VMFA-333, 1 MiG
Enterprise:	VF-142, 1 MiG

29 December Heavy raids around Hanoi, which had been resumed the day after the Christmas bombing halt, were eased as NVN showed indications of returning to the conference table. The over 700 sorties by B-52s during the 11 heavy-bombing days were believed accountable for the eventual resumption of negotiations which led to the peace agreement and the release of American POWs. On 28 and 29 December, during a total of 160 raids, no B-52s were lost to NVN air defenses, indicating the virtual paralysis of the system. Only two percent—15 B-52s were lost from over 700 raids during the whole 11-day heavy bombing period.

30 December The U.S. called another bombing halt in North Vietnam and the Navy ended all tactical air sorties above the 20th parallel. The bombing halt was called when North Vietnam returned to the negotiating table to continue the Paris peace talks.

31 December During 1972 the Navy conducted 33.9 percent of all tactical air attack sorties flown in SVN. There were 23,802 tactical air attack sorties flown and 160,763 general purpose bombs delivered by Navy fixed-wing aircraft, with Marine Corps fixed-wing aircraft delivering 111,859 general purpose bombs in SVN during 1972. The Navy and Marine Corps each lost five fixed-wing aircraft in SVN during 1972. In NVN the Navy conducted more than 60 percent of the tactical air attack sorties flown, for a total of 28,093. The Navy and Marine Corps lost 49 aircraft in NVN during this period. In 1972 the carriers spent a total of 1,403 on-line days at Yankee Station, with an average on-line period of slightly more than 25 days for each carrier. Carrier and Carrier Air Wings on Yankee Station during 1972 were:

Hancock with CVW-21
Kitty Hawk with CVW-11
Oriskany with CVW-19
America with CVW-8
Enterprise with CVW-14
Midway with CVW-5
Saratoga with CVW-3
Constellation with CVW-9
Coral Sea with CVW-15
Ranger with CVW-2

Marine Corps squadrons operating off carriers on Yankee Station during 1972 were VMA(AW)-224, VMCJ-2 and VMFA-333. Marine Corps land-based fixed-wing squadrons in Southeast Asia during 1972 were VMFA-115, VMFA-212, VMFA-232, VMA(AW)-533, VMCJ-1, VMA-211, VMA-311, VMGR-151, H&MS-15, and H&MS-12.

1973

1 January A major reorganization in naval reserve affairs got under way as a result of the announcement two days earlier by the Secretary of the Navy that the Naval Surface and Air Reserve Commands would be consolidated into Commander Naval Reserve Force located in New Orleans, La.

8 January Representatives of the U.S. and Greek navies signed an accord in Athens formally granting the U.S. Sixth Fleet home port facilities in the Athens vicinity. Under the arrangement, one of the Sixth Fleet's two carrier task forces in the Mediterranean Sea would be stationed in the Athens area.

12 January VF-161, flying off *Midway*, shot down a North Vietnamese MiG-17, the last enemy "kill" of the war, making a total of 57 MiGs shot down by Navy and Marine Corps pilots during the Vietnam conflict.

27 January The Vietnam cease-fire, announced four days earlier, came into effect and *Oriskany*, *America*, *Enterprise* and *Ranger*, on Yankee Station, cancelled all combat sorties into North and South Vietnam. During the U.S. involvement in the Vietnam conflict (starting in 1961 and ending on 27 January 1973) the Navy lost 526 fixed-wing aircraft and 13 helicopters to hostile action. The Marine Corps lost 193 fixed-wing aircraft and 270 helicopters to enemy action during the same period. Operation Homecoming, the repatriation of U.S. POWs between 27 January and 1 April, began and NVN and the Viet Cong released 591 POWs. Of the 591 POWs released during Operation Homecoming, 145 were Navy personnel, all but one of whom were Naval Aviation personnel.

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Former POW CDR William R. Stark is greeted by his family upon his arrival at NAS Miramar, Calif.

27 January Task Force 78 was formed to conduct minesweeping operations in North Vietnamese waters under the code name Operation Endsweep. It consisted of surface minesweeping elements and an Air Mobile Mine Countermeasures Command. The latter was made up of HM-12, HMH-463 and HMM-165, organized into units Alpha through Delta, an airborne mine countermeasures planning element, command and control element, an aircraft element and a material element.

28 January Aircraft from *Enterprise* and *Ranger* flew 81 combat sorties on the first day of the Vietnam cease-fire against lines-of-communication targets in Laos. The corridor for overflights was between Hue and Da Nang in SVN. These combat support sorties were flown in support of the Laotian government which had requested this assistance and it had no relationship with the cease-fire in Vietnam.

1 February The U.S. Third Fleet was reactivated at Pearl Harbor, Hawaii, with the merger of the First Fleet and Antisubmarine Warfare Forces, Pacific Fleet. The change was made to reduce fleet staffs and achieve economies while retaining control of operational units, including some 100 ships and 60,000 men serving a 50-million-square mile area from the West Coast to beyond Midway Island.

3 February Task Force 78 flagship *New Orleans,* with escort ships, began a six-day mine countermeasures exercise in Subic Bay, R.P., in preparation for scheduled Endsweep operations in NVN.

5 February Commander, Task Force 78, and other Navy mine demolition experts met with North Vietnamese leaders in Haiphong to discuss Operation Endsweep, the clearing of mines in NVN.

6 February Surface minesweepers of Task Force 78 began preliminary sweeping to prepare an anchorage in deep water off the approaches to Haiphong Harbor. Ships of the force included *New Orleans* and *Inchon*. The ocean anchorage would be used by command and supply ships of the U.S. Navy in on-scene support of minesweeping of NVN harbors, coastal and inland waterways. During the operation Task Force 78 ships were joined by *Tripoli*.

Minesweeping TF-78 on Operation Endsweep off Haiphong Harbor.

6 February NAVAIR established a policy that new avionics equipment generally be designed for automatic troubleshooting with the general purpose Versatile Avionics Shop Test (VAST) computerized equipment. This policy significantly improved the maintenance of avionics equipment through use of the VAST system which was designed with the capability to test the majority of avionics within the Naval Aviation inventory.

11 February Aircraft from *Constellation* and *Oriskany* operating on Yankee Station, the location of which was changed to a position off the coast of the northern part of South Vietnam, flew strikes against

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targets in southern Laos. Combat sorties from carriers on Yankee Station against targets in Laos had continued since the cease-fire in Vietnam.

14 February The Pentagon announced a step-up of U.S. air strikes in Laos to 380 daily, an increase of 100. Aircraft from *Oriskany* and *Enterprise* flew about 160 of these sorties into Laos on this date.

25 February Planes from *Ranger* and *Oriskany* flew combat support missions over Cambodia. The combat support sorties were flown in support of the government of Cambodia at its request.

27 February Airborne mine countermeasures began off Haiphong during Operation Endsweep. This was a "first" in mine warfare as airborne minesweeping had never been done with "live" mines. A CH-53 Sea Stallion from HM-12 made two sweeps in the Haiphong shipping channel. All operations were abruptly halted and minesweeping task force moved to sea as the President called for "clarification . . . on a most urgent basis" of Hanoi's delay in releasing American POWs.

4 March The withdrawal of U.S. troops from Vietnam resumed and the naval minesweeping force returned to its position off Haiphong. Minesweeping operations continued in and around Haiphong and the harbor was reopened after being closed for ten months because of the U.S. naval mining which began in May 1972. In addition, *America* was ordered to depart the Far East for the U.S. This was the initial move in reducing the number of carriers serving in Southeast Asia from six to three by mid-June 1973.

21 March VXN-8 returned to NAS Patuxent River, Md., from Project Magnet deployment to the Southern Hemisphere under the direction of the U.S. Naval Oceanographic Office. During the deployment, two flights were made around the world within the Southern Hemisphere, and an over-the-South-Pole flight by an RP-3D on 4 March was a first for that type of aircraft.

29 March The remaining U.S. combat forces left South Vietnam; and the United States Military Assistance Command, Vietnam (MACV), was disbanded, officially ending U.S. military involvement in South Vietnam. The last phase of Operation Homecoming was concluded when the final group of 148 American POWs was released by Hanoi. This brought the total to 591 POWs released, 566 of whom were U.S. military personnel with 144 being naval pilots and aircrewmen.

29–31 March *Forrestal* led two other Sixth Fleet ships into Tunisian waters where Sea King helicopters from the carrier evacuated some 200 persons and airlifted four tons of relief supplies to flood victims in Tunisia.

1 April Two new air wings were established as the final phase of the reorganization of the AirLant community, completing the functional wing concept: Air Antisubmarine Wing One with VS-22, -24, -27, -30, -31 and -32 and Helicopter Antisubmarine Wing One with HS-1, -3, -5, -7 and -11.

13 April The Secretary of the Navy announced that an agreement with the United Kingdom had been signed providing for an eight-month joint study of an advanced V/STOL Harrier involving participation by Rolls-Royce, Hawker-Siddeley, Pratt & Whitney Aircraft and McDonnell Douglas. The overall aim was to determine the feasibility of joint development of an advanced concept V/STOL incorporating a Pegasus 15 engine and an advanced wing.

16 April The Cruise Missile Project Office was established in the Naval Air Systems Command with responsibility to develop both tactical and strategic versions of the cruise missile.

30 April The last Marine NAP (enlisted Naval Aviation Pilot) retired. He was Master Gunnery Sergeant Patrick J. O'Neil, who enlisted during World War II and completed over 30 years of active duty.

3–9 May Fighting broke out between Lebanese army units and Palestinian guerrillas in Lebanon. Martial law was declared. Among U.S. forces in the Mediterranean, *John F. Kennedy* and *Forrestal* were alerted for possible contingencies. A cease-fire agreement between Lebanese and Palestinian negotiators stabilized the situation.

8 May In a ceremony at the Douglas Aircraft Division, Long Beach, Calif., the first McDonnell Douglas C-9B Skytrain jet transports were accepted by the Navy and delivered to Fleet Tactical Support Squadrons One and Thirty. A commercial version of the DC-9, the C-9B had a maximum 32,444 pound payload range of 1,150 statute miles with a ferry range of about 3,400 miles. It accommodated 107 passengers five-abreast.

18 May A four-day trial of a prototype glide slope indicator was completed aboard *Truxtun* (CGN 35). The indicator, developed by the Naval Air Engineering Center, consisted of a hydraulically stabilized Fresnel lens. It was one of several steps taken to achieve an all weather capability with LAMPS helicopters.

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25 May The first production RH-53D Sea Stallion, specially configured for the airborne mine countermeasures mission, arrived at the Naval Air Test Center, Patuxent River, Md., for weapons systems trials. Navy preliminary evaluation and the initial phase of the Board of Inspection and Survey trials had begun at Sikorsky Aircraft Division on 15 May.

25 May Skylab II, carrying a three-man, all-Navy crew of Captain Charles Conrad, Jr., Commander Joseph P. Kerwin, MC, and Commander Paul J. Weitz, rendezvoused with the earth-orbiting Skylab I workshop. Among the crew's first tasks was repairing the Skylab I meteoroid shield and solar array system which had been damaged during launch. The crew boarded the workshop, made repairs, conducted medical experiments and studied solar astronomy and earth resources for 28 days before returning to earth on 22 June.

7 June The Deputy Secretary of Defense directed the Navy to produce preliminary plans for a $250-million prototype development plan for a jet fighter aircraft costing less than the F-14 Tomcat missile-armed fighter.

13 June The National Aeronautics Association presented the Robert J. Collier Trophy for 1972 jointly to the Navy's Task Force 77 and to the Seventh and Eighth Air Forces for their "demonstrated expert and precisely integrated use of advance aerospace technology" in Operation Linebacker II, the 11-day air campaign in December 1972 against North Vietnam that "led to the return of the U.S. prisoners of war."

22 June The all-Navy crew of Skylab II astronauts was recovered after their 28-day mission in space by HC-1 and flown aboard *Ticonderoga*.

30 June FAW-1 and -2 were redesignated Patrol Wings 1 and 2. This was the end of the use of the FAW (Fleet Air Wing) designation and beginning of the Patrol Wing designation which had been used prior to World War II.

27 July Operation Endsweep was closed officially and Task Force 78 was disbanded. During the six months of its existence, the airborne element had made 3,554 sweeping runs totaling 1,134.7 sweeping hours in 623 sorties. The surface elements had made 208 sweeping runs of 308.8 hours. The aviation material casualties were three helicopters lost in operational accidents. Mine logistics carrier station operations in the Gulf of Tonkin were conducted by *Enterprise*, *Oriskany*, *Ranger*, and *Coral Sea* at various periods and their respective aircraft flew support sorties for Operation Endsweep.

28 July Skylab III commanded by Captain Alan L. Bean, USN, in company with civilian doctor Owen K. Garriott and Major John R. Lousma, USMC, was launched into space.

31 July HSL-33, the Navy's first squadron dedicated solely to providing LAMPS detachments for LAMPS-configured ships of the Pacific Fleet, was established at NAS Imperial Beach, California.

15 August After intensive bombing for more than six months, the U.S. ended its combat involvement in Cambodia, as voted by Congress on 30 June. Aircraft from carriers *Ranger* and *Oriskany* had conducted combat sorties in Cambodia during February. After March 1973, carriers on Yankee Station conducted carrier air patrols; electronic intelligence patrols; surface, subsurface, and surveillance coordinator patrols; and training, tanker, communications relay and reconnaissance sorties.

16 August The F-14's quick-reaction dogfight capability was demonstrated at the Pacific Missile Range, Point Mugu, Calif. when, from a distance of less than a mile, the aircraft shot down a maneuvering QT-33 target drone with a Sparrow III missile.

29 August HM-12 received the first RH-53D Sea Stallion helicopters. The RH-53Ds were configured especially for minesweeping operations.

6 September A BQM-34E Firebee II target drone, equipped with a graphite-epoxy composite wing, was test flown successfully at the Point Mugu Sea Test Range, Calif., reaching a speed of Mach 1.6 at 40,000 feet and a maximum acceleration of six Gs. The graphite-epoxy composite would save 40 percent of the weight of metal counterparts in various aeronautical applications. The test wing was designed and fabricated by the Naval Air Development Center, Warminster, Pa.

7 September The Navy announced that the Blue Angels flight demonstration team planned to switch to the slower, smaller and less expensive A-4F Skyhawks rather than continue to use the F-4J Phantoms they had been flying since 1969.

25 September The three astronauts of Skylab III made a successful splashdown in the Pacific, ending a record 59-day, 24-million-mile flight. They were recovered by HC-1 and flown aboard *New Orleans*. During Skylab III, Captain Alan L. Bean, USN, Commander of Skylab III, set a new record for the most time in space, eclipsing Navy Captain Charles Conrad's record of 49 days, three hours, and 37 minutes.

1973—Continued

The S-3A Viking making its first catapult launch from Forrestal as part of its initial carrier suitability tests C121073

1 October The formal Board of Inspection and Survey service acceptance trials of the S-3A began at the Naval Air Test Center, Patuxent River, Md. The tests were to utilize seven S-3A aircraft during a four-month period, including weapons system checkouts, carrier suitability, flying qualities and performance, and propulsion and airframe evaluation.

5 October *Midway*, with CVW-5 embarked, put into Yokosuka, Japan, marking the first home porting of a complete carrier task group in a Japanese port as a result of the accord arrived at on 31 August 1972 between the U.S. and Japan. In addition to the morale factor of dependents housed at a foreign port, the development had strategic significance because it facilitated continuous positioning of three carriers in the Far East at a time when the economic situation demanded the reduction of carriers in the fleet.

8–13 October Task Force 60.1 with *Independence*, Task Force 60.2 with *Franklin D. Roosevelt* and Task Force 61/62 with *Guadalcanal* were alerted for possible evacuation contingencies in the Middle East. *John F. Kennedy*, in the Atlantic, was directed to a holding area off Gibraltar.

9 October The Pentagon announced that *Guadalcanal*, an amphibious assault ship with U.S. Marines aboard, was operating in the eastern Mediterranean Sea as part of the Sixth Fleet. Other elements of the fleet were moving toward Crete, including *Independence* and *Franklin D. Roosevelt*, on alert as a result of the 1973 Yom Kippur war between Arab and Israeli forces.

19–24 October Some 50 A-4 aircraft were flown from the U.S. to supply Israel, staging through the Azores and *Franklin D. Roosevelt* which was located south of Sicily. When necessary, *John F. Kennedy*, off Gibraltar and *Independence*, off Crete, also provided assistance. On the 24th, *Iwo Jima* entered the Mediterranean with reinforcing Marines.

27 October Due to the situation in the Middle East, the U.S. government ordered a worldwide "precautionary alert" of its military forces. Possible unilateral intervention by the Soviet Union was feared. By 28 October, three U.S. aircraft carriers and two amphibious assault carriers were off Crete.

1973—Continued

29 October The Defense Department announced that a naval task force centering around *Hancock* had been ordered to the Indian Ocean. This was prompted by the Middle East war and the consequent Arab oil embargo and was the first of four task groups deployed into the Indian Ocean in 1974 to focus on such areas as the entrance to the Persian Gulf and the entrance to the Red Sea.

16 November Skylab IV, commanded by Lieutenant Colonel Gerald P. Carr, USMC, and with a crew consisting of Lieutenant Colonel William R. Pogue, USAF, and Edward G. Gibson, civilian, was launched at the Kennedy Space Center, Fla. The scheduled 56-day "open-ended" space flight had among its aims study of the Comet Kohoutek, earth resources and the sun.

21 November In the first test of its full arsenal of Phoenix missiles, an F-14 operating over the Pacific Missile Sea Test Range, Calif., fired six Phoenix missiles and guided them simultaneously at six separate targets 50 miles away, obtaining four direct hits.

1 December The Blue Angels became the Navy Flight Demonstration Squadron (Blue Angels) and was designated a shore activity located at NAS Pensacola, Fla.

Bow view of Tarawa, the first ship in the new class of Amphibious Assault Ships, underway

1973—Continued

7 December *Tarawa*, the first of a new class of amphibious assault ships, was launched at Pascagoula, Miss.

17 December *Iwo Jima* departed Tunisia after three days of flood relief assistance by her helicopters which conducted refugee rescue, equipment deliveries and other flood associated missions.

20 December Two women physicians, Lieutenants Jane O. McWilliams and Victoria M. Voge, graduated from the Naval Flight Surgeon Training Program, to become the first women naval flight surgeons.

20 December The Naval Air Engineering Center was relocated officially from Philadelphia, Pa., to NAS Lakehurst, N.J., and authority and responsibility for the air station was reassigned to the Chief of Naval Material to be exercised through NAVAIR. Subsequently, on 8 January 1974, the Air Station was placed under the Naval Air Engineering Center. Thereby, the basic organization arrangements involved in relocation of the Naval Air Engineering Center from League Island, Philadelphia to NAS Lakehurst were completed although the physical transfer would be phased over much of 1974. The relocation was part of the Shore Establishment Realignment announced by the Secretary of Defense in March of 1973. Thus, an affiliation between Naval Aviation and the League Island site at Philadelphia, which began with the establishment of the Naval Aircraft Factory in 1917, was terminated except for a few residual aviation oriented functions.

31 December Ellyson Field, NAS Pensacola, Fla., officially became the Naval Education and Training Program Development Center to administer the Navy's enlisted advancement system, including the development of advancement and special examinations as well as administering and conducting various courses, studies and training programs.

1974

18 January The Secretary officially named the Navy's fourth nuclear-powered carrier *Carl Vinson*. The name was chosen in honor of Carl Vinson's contributions to the national defense during his fifty years in the House of Representatives.

4 February VT-4 students aboard *John F. Kennedy* conducted the final flights of the TF-9J Cougars.

5 February The Naval Aerospace Institute at Pensacola, Fla., announced that the repatriated Navy and Marine Corps prisoners-of-war from Vietnam were scheduled to come to Pensacola for periodic checks of their physical and mental status.

8 February Skylab IV astronauts Lieutenant Colonel Gerald P. Carr, USMC, mission commander, Dr. Edward Gibson, and Lieutenant Colonel William Pogue, USAF, landed in the Pacific after a record-setting 84 days in space. They were recovered by HC-1 which flew them aboard *New Orleans*. This event marked the 32nd astronaut retrieval by Naval Aviators since the space program began in 1961.

20 February The S-3A Viking ASW aircraft was introduced officially in the Navy in ceremonies at NAS North Island, Calif. VS-41 accepted the first aircraft. The Viking, a highly advanced, carrier-qualified jet aircraft, was designed to replace the older, propeller-driven S-2 Tracker which had been the Navy's primary carrier-based submarine hunter for over twenty years.

ADM Thomas B. Hayward, CNO, delivering remarks at the launching ceremony for Carl Vinson in 1980 KN-29933

1974—Continued

22 February Lieutenant (jg) Barbara Ann Allen became the Navy's first designated female aviator when she received her Wings of Gold in a ceremony at NAS Corpus Christi, Tex.

1 March Sikorsky's triple-turbine helicopter, the YCH-53E, the largest and most powerful helicopter in the western world, made its first flight. The CH-53E was a growth version of the CH-53 which had been in Navy service since 1965.

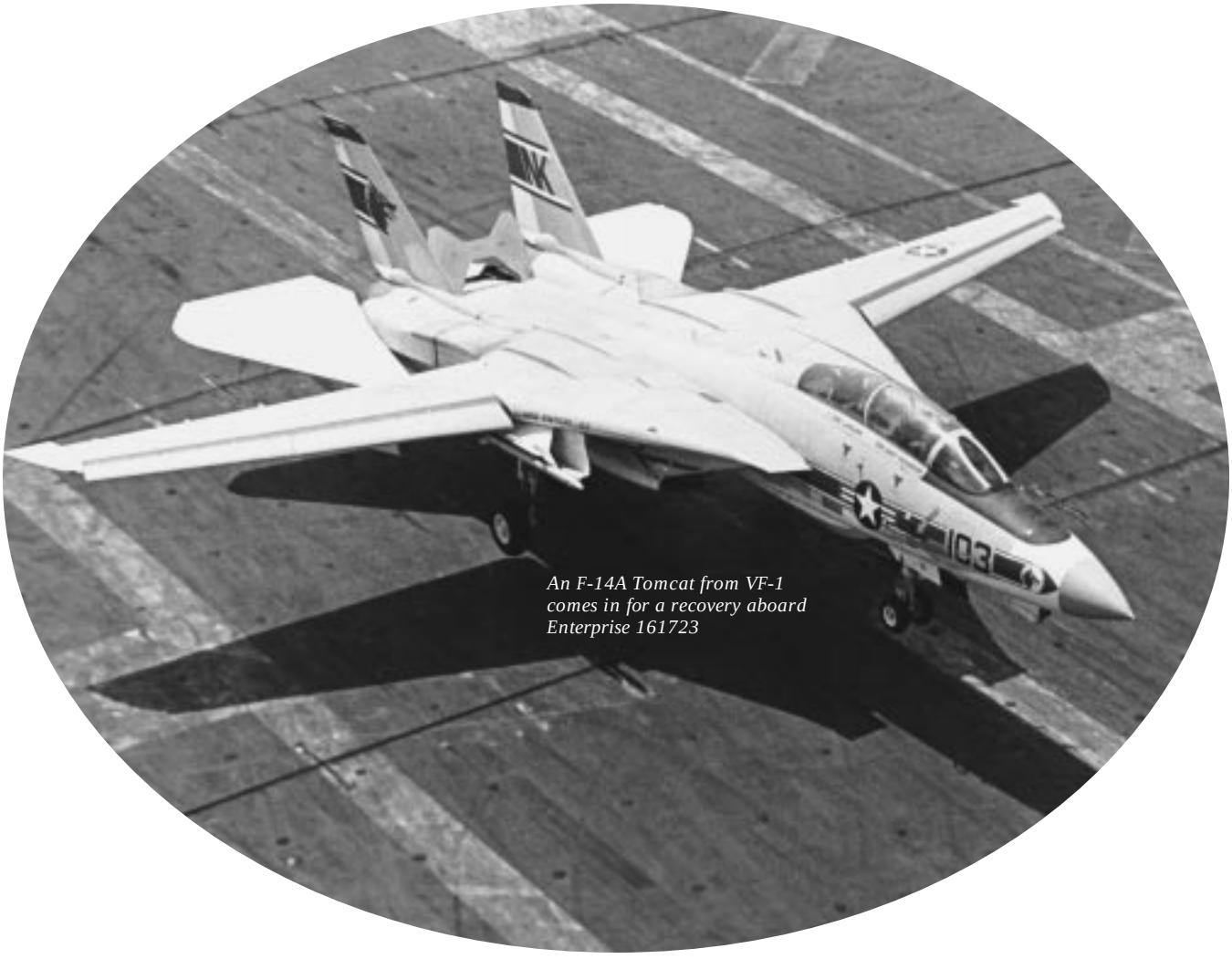
1 March *John F. Kennedy* commenced a year-long overhaul at Norfolk Naval Shipyard to be converted to handle the new CV concept (an air wing capable of performing strike and ASW operations) and to operate the new F-14 Tomcat fighter as well as the S-3A Viking.

15 March *Intrepid* was decommissioned and placed in the reserve fleet after thirty years of service to the Navy. Since her commissioning on 16 August 1943, *Intrepid* had seen duty as a CV, CVA and CVS. During World War II her air groups shot down 266 enemy planes, destroyed 298 more on the ground and damaged 178 others.

18 March The first operational F-14 Tomcat fighter aircraft made its maiden landings and takeoffs from *Enterprise*. The operations were conducted by VF-1 and -2 of CVW-14.

22 March Rear Admiral Brian McCauley arrived in Cairo, Egypt, with a small military planning staff to help plan the clearing of the Suez Canal of unexploded ordnance. The United States, Egypt, France, and the United Kingdom were involved in the project known as Nimbus Star.

2 April The last C-54 Skymaster in the Navy's flying inventory was retired to storage. The twenty-nine-year-old C-54Q saw its last service with the Naval Test Pilot



An F-14A Tomcat from VF-1 comes in for a recovery aboard Enterprise 161723

1974—Continued

School, NAS Patuxent River, Md. The Skymaster, BuNo 56501, had flown almost 15,000 hours with more than 2,500,000 nautical miles since its acceptance on 24 March 1945.

11 April At the Naval Missile Center, Point Mugu, Calif., the P-3 Orion fired its first Harpoon missile. The aircraft involved was a P-3A; the missile scored a direct hit on a remote-controlled *Septar* target boat.

14 April The Navy donated the ASW carrier *Yorktown* to Charleston, S.C., for the city's National Naval Museum. The "Fighting Lady" had spent 25 years with the Pacific Fleet before being transferred to the Atlantic in 1969. She was decommissioned 27 June 1970.

22 April A twelve-plane detachment of RH-53D Sea Stallions from HM-12 began minesweeping the Suez Canal as part of Project Nimbus Star.

4 June NAVAIR established an Aircraft Survivability/Vulnerability branch. This office was created in response to the need for a thoroughly coordinated Navy technical program addressing the need for better aircraft survivability in combat.

5 July Two Marine Corps aviators, Major John H. Pierson and his co-pilot, Major David R. Shore, flew an OV-10A Bronco 4,480 kilometers from NAS Whidbey Island, Wash., to Homestead AFB, Fla. This flight set a new world record for distance in a straight line by a Class C-1-F, Group II aircraft. The National Aeronautics Association sanctioned the record.

22 July As a result of the conflict between Turkish and Greek Cypriot forces on Cyprus, the U.S. Ambassador to Cyprus, Roger Davies, requested the evacuation of U.S. citizens. In a joint Navy/Marine Corps effort, HMM-162 from the Sixth Fleet carrier *Inchon* evacuated 466 people, 384 of them U.S. citizens, in only five hours. *Forrestal* provided air cover for the operation.

5 August The world's largest unmanned balloon was launched successfully from Fort Churchill in Manitoba, Canada. The flight was sponsored by the Office of Naval Research and NASA's Office of Space Science. The facilities of the Navy's Skyhook program were used for the launch. The entire flight train—balloon, an 800-pound instrument package, and a parachute—lifted to an altitude of 155,000 feet. As the balloon rose to float altitude it assumed a fully inflated form of 512 feet in diameter with a volume of 50.3 million cubic feet. The balloon traveled 500 miles west and was tracked by Project Skyhook's DC-3.

9 August The Navy announced the first acceptance by VQ-4 of an EC-130 Hercules TACAMO aircraft.

10 August Sikorsky's YCH-53E, Number 1, flew in a hover at a gross weight of 71,700 pounds. It carried an external load of 17.8 tons and hovered at a wheel height of fifty feet. This was the heaviest gross weight ever flown—and the heaviest payload ever lifted—by a helicopter in the western world.

24 August Navy and Marine Corps helicopters completed six days of disaster flood relief work in central Luzon, R.P. Aircraft from NAS Cubi Point, R.P., *San Jose* (AFS 7), *Tripoli* and Clark AFB, R.P., provided airlift of emergency food supplies.

RH-53D Sea Stallion of HM-12 minesweeping the Suez Canal 1151672

1974—Continued

28 August The Chief of Naval Operations released a formal VFAX operational requirement directing NAVAIR to perform industrial solicitation and full-scale development. The VFAX concept was by this time under management by NAVAIR's PMA-265. The aircraft that finally emerged from the VFAX concept was the McDonnell Douglas F/A-18 Hornet.

14 September The SEU-3/A Lightweight Ejection Seat manufactured by the Stencel Aero Engineering Company primarily for the AV-8A Harrier was approved for service use.

17 September *Enterprise* sailed from San Francisco, Calif., with VF-1 and -2 aboard. This event marked the initial deployment of the Grumman F-14 Tomcat, the Navy's newest fighter.

17 September The prototype LAMPS MK-III H-2/SR helicopter was delivered to the Kaman Aerospace Corporation for flight certification tests. Prior to this delivery, Naval Air Development Center, Warminster, Pa., engineers completed extensive design modifications which were required to incorporate the LAMPS MK-III developmental avionics package.

2 October The Joint Logistics Commanders signed an agreement making Dupont's HT-4 the standard fabric for all flight suits.

19 November The Central Treaty Organization Exercise Midlink 74 got underway as the largest naval exercise ever held in the Arabian Sea. Participating were forces from the United States, United Kingdom, Iran, Pakistan, and Turkey. *Constellation* was part of the eight-ship force from the United States.

2 December The Navy's Advanced Low Volume Ramjet (ALVRJ) successfully completed its first free flight at the Pacific Missile Range at Point Mugu, Calif. The ALVRJ was a unique propulsion system designed for high performance missiles. It was developed for NAVAIR by LTV.

1975

3 January The Association of Naval Aviation was formally founded "to stimulate and extend appreciation of Naval Aviation . . . past, present and future." The non-profit organization became open to any officer, enlisted person or civilian who contributed to, or was interested in, U.S. Naval Aviation.

17 January The first production model of Lockheed's updated P-3C Orion was delivered to VX-1, the Navy's antisubmarine warfare evaluation squadron at NAS Patuxent River, Md. New avionics and software included a versatile computer language, the Omega worldwide navigation system, increased sound-processing sensitivity, a tactical display scope, improved magnetic tape transport, and a seven-fold increase in computer memory capacity from 65,000 to 458,000 words.

21 January *Saratoga*, along with three other surface vessels, was released from contingency response off Cyprus. *Saratoga* had been maintaining a response alert for possible assistance in the evacuation of American citizens from the strife-torn island.

28 January The AIM-54 Phoenix missile was given approval for service use.

9 February *Enterprise* responded to calls for disaster relief from the island nation of Mauritius which was struck on 6 February by Typhoon Cervaise. Arriving at Port Louis on the 12th, carrier personnel spent more than 10,000 man-hours rendering such assistance as restoring water, power and telephone systems, clearing roads and debris, and providing helicopter, medical, food and potable water support to the stricken area.

15 February The Sikorsky YCH-53E transport helicopter completed Navy Preliminary Evaluation conducted by the Naval Air Test Center, Patuxent River, Md., and HMX-1.

2 March The F-14A Tomcat and the Phoenix Missile system were given approval for service use.

17 March The S-3A Viking was given approval for service use.

18 March NAVAIR established an Assistant Commander for Test and Evaluation and assigned to him the functions involving management of T & E and its facilities. This important organizational development had its direct origins in a decision by the Secretary of Defense (SECDEF) made in mid-1960s which stressed the need for adequate Test and Evaluation (T & E) data to provide a basis for determining whether new equipment was developed sufficiently to warrant procurement for service use. In a much more historic sense, the establishment of the Assistant Commander, Test and Evaluation was part of Naval Aviation's long-standing commitment to a consolidation of T & E. This commitment resulted, as early as 1942, in the creation of NAS Patuxent River, Md., as a facility for testing experimental airplanes, equipment, and material.

1975—Continued

23 March *Hancock,* en route from Subic Bay, R.P., as relief for *Enterprise,* on station in the South China Sea, loaded HMH-463 at Pearl Harbor, Hawaii, for transport to the southwest Pacific. The unit would support operations in case evacuations of American and other nationals from areas of the Indochinese peninsula became necessary. Meanwhile, North Vietnamese forces continued their advance southward and were poised to cut off the entire northern quarter of the Republic of Vietnam some 300 miles north of Saigon.

1 April Eugene Taylor "Smokey" Rhoads, Chief Aviation Pilot, USN, died at the Veterans Hospital, San Diego, Calif. Rhoads was a member of the flight crew that made the first trans-Atlantic flight in May 1919 in the NC-4.

12 April Operation Eagle Pull was activated for Cambodia. Twelve CH-53 Sea Stallions of HMH-462 evacuated 287 persons from Phnom Penh to *Okinawa.* Among those evacuated were U.S. Ambassador John Gunther Dean and Cambodian President Saukhm Khoy, as well as newspapermen and other foreign nationals. Upon completion of the evacuation, helicopters of HMH-463 from *Hancock,* retrieved the elements of the 31st Marine Amphibious Unit which had established the perimeter from which the evacuees had been rescued.

13 April The Naval Aviation Museum was dedicated at Pensacola, Fla. All funds for construction of the 68,000-square-foot structure had been donated privately. The building was presented to the Navy by the Naval Aviation Museum Foundation, Inc. It replaced the small temporary museum set up in 1962. Among the 72 vintage aircraft at the museum, a feature attraction was the original NC-4, the first airplane to fly the Atlantic Ocean. Plans, and an ongoing drive for privately donated funds, called for continued expansion of the new museum through three more stages to eventually reach 260,000 square feet of floor space.

19 April *Midway, Coral Sea, Hancock, Enterprise* and *Okinawa* responded to possible evacuation contingencies by deploying to waters off Vietnam as North Vietnam overran two-thirds of South Vietnam and pronounced the carriers' presence a brazen challenge and a violation of the 1973 Paris Peace Accords.

Sailors from Durham (LKA 114) lending a hand K-107587

Sailor from Durham (LKA 114) cares for two Vietnamese children separated from their mother during the evacuation K-107619

1975—Continued

29 April In a period of three hours, Operation Frequent Wind was carried out by U.S. Navy and Marine Corps helicopters from the Seventh Fleet. Frequent Wind involved the evacuation of American citizens from the capital of South Vietnam under heavy attack from the invading forces of North Vietnam. The military situation around Saigon and its Tan Son Nhut airport made evacuation by helicopter the only way out. President Ford ordered the evacuation when Viet Cong shelling forced the suspension of normal transport aircraft use at Tan Son Nhut. With fighter cover provided by carrier aircraft, the helicopters landed on Saigon rooftops and at Tan Son Nhut to evacuate the Americans. The airport became the main helicopter landing zone; it was defended by Marines from the 9th Amphibious Brigade flown in for that purpose. All but a handful of the 900 Americans in Saigon were evacuated. The last helicopter lifted off the roof of the United States Embassy at 7:52 p.m. carrying Marine security guards.

Flight from Saigon as Communists take over in 1975.

Escaping South Vietnamese pilot and family land aboard Midway, plane is now at Naval Aviation Museum, Pensacola, Fla.

1975—Continued

30 April VW-4, the Hurricane Hunters, was disestablished. Established 15 November 1952 as VJ-2 and redesignated VW-4 in 1953, it was the Navy's last squadron specifically detailed for hurricane reconnaissance. During its more than 30 years of service, VW-4 made major contributions to meteorological science, oceanographic research, the National Weather Service, and the Naval Weather Service Command.

2 May *Midway* off-loaded at Utapao, Thailand, over 40 USAF helicopters used in South Vietnam evacuation operations. At the same time, carrier personnel assisted in the recovery and on-loading from the Utapao Airport of over 95 South Vietnamese Air Force craft, including F-5 fighters and A-37 light bombers, which had been flown into Utapao when South Vietnam fell to the Communists. The aircraft were transported to Guam.

2 May Development of a new carrier-based fighter by the McDonnell Douglas and the Northrop aircraft corporations was announced by NAVAIR. To be designed for speeds in excess of Mach 1.5, a combat ceiling in excess of 45,000 feet and a radius of action of more than 400 nautical miles, development was to emphasize improved maneuvering performance, reliability, and maintainability.

5 May The first training class for a new type of physician, the Aviation Medical Officer (AMO), began at the Naval Aerospace Medical Institute, Pensacola, Fla. The program was initiated because of the acute shortage of flight surgeons. The AMOs were not scheduled to undergo flight training nor be assigned duty involving flying; instead, they were to augment the efforts of flight surgeons where aeromedical workloads were heavy, performing flight physicals and providing routine medical care.

12–14 May *Coral Sea* participated with other Navy, Air Force and Marine forces in the recovery of the American merchantship SS *Mayaguez* and her 39 crewmen, illegally seized on 12 May in international waters by a Cambodian gunboat controlled by the Communist Khmer Rouge. Protective air strikes were flown from the carrier against the Cambodian mainland naval and air installations as USAF helicopters with 288 Marines from Battalion Landing Teams 2 and 9 were launched from Utapao, Thailand, to rescue the crew and secure the merchantman. Eighteen Marines, airmen and Navy corpsmen were lost in action. Alerted for response, but not utilized before the release of the commandeered ship and crew on the 14th, were *Hancock*, operating as an LPH platform, and *Okinawa*.

1 July All U.S. naval gunfire training activities at the Puerto Rican island of Culebra were terminated through a joint Washington-San Juan agreement, ending a controversy that had dragged on for years. The announcement indicated that air-to-ground weapons training at Culebra Cays would continue for a limited time only because of previously scheduled training activities.

1 July The aircraft carrier designation CVA was replaced with CV. This change was made to improve the accuracy of designations in modern warfare. By removing the letter A, which stood for attack, the new designation CV could serve a multipurpose air, surface, and ASW role, depending on the type of aircraft carried.

24 July HS-6 operating off *New Orleans* recovered the Apollo spacecraft and astronauts Vance D. Brand (former Navy pilot), Thomas P. Stafford (USAF) and Donald K. Slayton (USAF). This splashdown marked the end of the Apollo-Soyuz mission, the first joint U.S.-Soviet space effort, and the end of the Apollo Program. It was also the final planned at-sea recovery in the U.S. space program.

28 July The U.S. Senate cleared the way for construction at Diego Garcia by voting to expand the U.S. support facility on the Indian Ocean island. It ended a long dispute over construction at the installation, permitting the Navy to begin an $18.1 million expansion to include aircraft runway extension, petroleum-oillubricants storage areas, a pier and additional power plant facilities.

29 July The Navy created the lighter-than-air project office at the Naval Air Development Center, Warminster, Pa. The purpose of this office was to enhance expertise in lighter-than-air technology within the Navy.

1 August A KA-3B Skywarrior, attached to VAQ-208, completed the longest nonstop flight ever made by a carrier-based tactical jet aircraft. The flight originated at the Naval Station, Rota, Spain, and ended at NAS Alameda, Calif. It covered a distance of 6,100 miles and lasted 13 hours.

2 August The Commandant of the Marine Corps announced that the twelve Marine Corps fighter/attack squadrons would remain an all F-4 Phantom force until their replacement by F-18 aircraft beginning in the early 1980s. The Marine Corps was scheduled originally to be equipped with four squadrons of the F-14 Tomcats, but instead these four would be used to transition four Navy fighter squadrons from F-4s to F-14s, thus retaining the authorized 18- squadron Navy force for overall air defense.

1975—Continued

14 August The newly commissioned *Nimitz* completed refresher training at Guantanamo Bay, Cuba, before beginning her cruise with a nuclear task force to northern European waters. The world's largest ship at the time, *Nimitz* had an overall length of 1,092 feet, an extreme breadth of 292 feet, a flight deck area of four and a half acres, and displaced 95,000 tons with a combat load. The Navy's second nuclear carrier, *Nimitz* was named in honor of the World War II hero and former Chief of Naval Operations, Fleet Admiral Chester W. Nimitz.

Nimitz commissioned on 3 May 1975 1161470

26 Septmber The Chief of Naval Operations approved the popular name Tomahawk for the Navy's SLCM.

3 October VMGR-352 took delivery of the first KC-130R Hercules refueler/transport.

22 October The Chief of Naval Operations and Defense Systems Acquisition Review Council initiated new policies on development and operational test and evaluation functions along with weapon system acquisition.

24 October The Navy reported that a new method of conducting Shrike pilot training programs had been developed. This method consisted of captive flight firings linked to a communications pod and was performed at the Air Combat Maneuvering Range at Yuma, Ariz. The new method could be adopted to all versions of the A-4 Skyhawk, A-6 Intruder and A-7 Corsair aircraft.

27 October *Inchon* and five surface vessels served as a contingency evacuation force, with *John F. Kennedy* in support, as U.S. citizens were advised to evacuate their dependents from Lebanon due to prolonged government instability and increased armed skirmishing among political factions in the country.

1 November Effective this date, the Naval Aerospace Recovery Facility at NAF El Centro, Calif., was disestablished and the mission statement of the National Parachute Test Range, also at El Centro, was modified to absorb its function. The Naval Air Facility was assigned to the CNO for command and support.

25 November The first launch in the XJ521 Program took place at Point Mugu. The XJ521 was an air-to-air medium range missile resulting from modifications by the United Kingdom to the American Sparrow AIM-7E-2. The missiles were fired from an F-5 aircraft at QT-33 targets.

6 December H-46 Sea Knight helicopters from NAS Whidbey Island, Wash., began search and rescue operations in the northwestern Washington state areas flooded by heavy rains. Four days of this humanitarian work saw a total of 113 people evacuated after being stranded by the flood waters.

8 December The first production prototype of Sikorsky's three-engine, multimission CH-53E transport helicopter made its first flight at the company's Connecticut plant. The flight of about 30 minutes consisted of low-altitude hovering and limited maneuvering.

1976

28 January The Navy awarded a contract for an initial funding of $16 million to the McDonnell Douglas Corporation to begin full-scale development of the new F-18 Air Combat Fighter.

11 February The first Terrain Contour Matching (TERCOM) Guidance Test Vehicle was flown using a modified Navy Firebee drone. TERCOM was then used in the Tomahawk Cruise Missile.

1976—Continued

18 February The night attack weapons system, a modified air-to-surface Maverick missile designed to enhance the performance of night tactical and strike aircraft, scored a direct hit on a moving M-48 tank during a test conducted at the Naval Weapons Center, China Lake, Calif.

2 March Two VS-22 Lockheed S-3A Viking aircraft landed aboard *Saratoga* off the coast of Italy, completing the first Atlantic crossing by S-3A Vikings. The S-3A Vikings departed NAS Cecil Field, Fla., and made stops at NAS Bermuda, NAS Lajes, Azores, and NS Rota, Spain, before landing on *Saratoga*. Their flight across the Atlantic proved that rapid augmentation of S-3A Viking carrier antisubmarine assets was possible from long distances.

20 May Bell Helicopter's AH-1T made its first flight. The following week the AH-1T flew to 120 knots and did mild sideslips, climbs and descents.

26 May A contract for a new Navy multi-engine aircraft trainer to be designated T-44A was awarded to Beech Aircraft. The aircraft would replace the TS-2A.

28 May Helicopter crews from HS-4 aboard *Ranger;* detachments from HC-3 on *Camden* (AOE 2), *Mars* (AFS 1) and *White Plains* (AFS 4); and helicopters from NAS Cubi Point, R.P., assisted in the Philippine disaster relief efforts in the flood ravaged areas of Central Luzon. Over 1,900 people were evacuated; more than 370,000 pounds of disaster relief supplies and 9,340 gallons of fuel were provided by Navy and Air Force helicopters.

29 May *Tarawa* was commissioned at Ingalls Shipbuilding Division of Litton Industries in Pascagoula, Miss. *Tarawa* was the first of five in a class of amphibious assault ships to join the fleet.

5 June The Navy launched the first fully guided Tomahawk cruise missile over the White Sands Missile Range in New Mexico. The missile was airborne for 61

CH-46 helicopters from HMM-163 operating from Tarawa K-114732

1976—Continued

minutes after it was released from the wing of a Pacific Missile Test Center, Patuxent River, Md., A-6 Intruder aircraft at an altitude of 11,500 feet. This was the first in a series of flights intended to test the functional operation of the test vehicle's capability to perform navigation, guidance updates, and low-terrain following maneuvers. It was also the first test flight using a turbofan engine, previous tests had utilized the turbojet engine.

6 June An A-6 Intruder successfully test fired the tactical version of the Tomahawk cruise missile using the TERCOM navigation system. The Tomahawk was designed as a long-range weapons system with strategic and tactical application which could be launched from tactical and strategic aircraft, surface ships, submarines and land platforms.

24 June The Navy accepted its first T-34C Mentor aircraft. The new aircraft would replace the aging T-34B and T-28B/C used in primary and basic flight training. It would be the first training command aircraft to have maintenance and supply support provided by civilian contractors.

24 June The Navy's Air-Launched Low Volume Ramjet (ALVRJ) set a new distance record traveling over 100 nautical miles at sustained speeds of over 1,700 miles per hour. This was the fifth flight for the ramjet at the Navy's Pacific Missile Test Center at Point Mugu, Calif.

30 June A new eight-inch laser-guided projectile, developed jointly by the Navy and Marine Corps, was fired successfully from the new major caliber light weight gun mounted in *Hull* (DD 945).

30 June A Naval Aviation tradition came to an end when brown shoes were stricken from the officers' and chiefs' uniforms. The tradition initially distinguished the Brown Shoe Navy of the aviators from the black shoes of the surface officers.

1 July The Navy's Sea-Air Operations Gallery, part of the new National Air and Space Museum of the Smithsonian Institution, was opened to the public. The Sea-Air Operations Gallery presented a "you are there" mock-up of an aircraft carrier's hangar deck, bridge and preflight operations room. Audio/visual presentations of take-offs and landings from a carrier were presented in the bridge areas. The hangar deck included Navy aircraft past and present. Famous events in Naval Aviation history were depicted throughout the gallery.

6 July *Coral Sea* was presented the Meritorious Unit Commendation for her actions during the *Mayaguez* crisis in May 1975. *Coral Sea* played a major role in the return of SS *Mayaguez* after Cambodian gunboats seized the merchant ship on the high seas off the coast of Cambodia. *Coral Sea* provided air support to the landing of Marines at Koh Tang Island as CVW-15 conducted strikes on specified military targets.

9 July The CH-46 Sea Knight helicopter's effectiveness and life were extended with the delivery of the first two CH-46E prototypes. The major modifications to the CH-46E helicopters were new T-58-GE-16 engines, an Omega-Doppler navigation system, new crashworthy pilot and copilot seats, a combat crashworthy fuel system, a new rescue hoist and an infrared suppressor for engine exhaust.

12 July *Ranger* and her escort ships of Task Force 77.7 entered the Indian Ocean and were assigned to operate off the coast of Kenya in response to a threat of military action in Kenya by Ugandan forces. A VP-17 P-3 aircraft visiting Nairobi and a U.S. Middle East Force ship visiting Mombassa further demonstrated U.S. friendly ties and support for Kenya during her crisis with Uganda.

12 July The Navy phased out the last C-117 (Douglas DC-3), perhaps the most famous transport plane of all time. The last C-117 was flown from Pensacola, Fla, to Davis Monthan Air Force Base, Ariz., the boneyard for obsolete military aircraft.

27 July *America* and other elements of Task Force 61, with *Nimitz* standing by, supported the evacuation of 160 Americans and 148 other nationals from Beirut, Lebanon. The amphibious transport ship *Coronado* (LPD 11) removed the evacuees from Lebanon and arrived in Athens on 29 July. During January through July 1976 the contingency evacuation force for the "Lebanon Civil War Crisis" involved, at different intervals, the support of *America*, *Nimitz*, *Iwo Jima*, *Independence*, *Guadalcanal* and *Saratoga*.

27 July The first phase of a program to develop the AV-8B Harrier, a version of the current AV-8A with improved payload and range, was approved by the Department of Defense.

13 August An HU-16 Albatross, the Navy's last operational seaplane made its final water landing in Pensacola Bay, Fla. After two-touch-and-go landings the aircraft was flown to Sherman Field where it was turned over to the Naval Aviation Museum in Pensacola.

1976—Continued

A P-3B Orion from VP-17 on patrol in the Pacific Ocean.

20 August *Ainsworth* (FF 1090) became the first ship to have installed a production version of the Harpoon Command and Launch Missile System.

21 August A Navy task force headed by *Midway* made a show of force off the coast of Korea in response to an unprovoked attack on two U.S. Army officers who were killed by North Korean guards on 18 August. *Midway's* response was in support of a U.S. demonstration of military concern vis-à-vis North Korea.

29 August The Navy's last S-2 Tracker aircraft, operating with VS-37, was withdrawn from active service. Many of the pilots who flew the Tracker credit it with being the Navy's most versatile airplane of its era. The S-2 entered service with VS-26 in February 1954 and provided the Navy with 22 years of active service.

15 September Test flights began on the east coast air combat maneuvering range (ACMR) under construction off the coast of Cape Hatteras, N.C. This follow-on system to the Navy ACMR at Yuma, Ariz., would provide air combat training for East Coast squadrons.

17 September The new space shuttle program was unveiled by NASA. Of the 28 astronauts in the space program, 12 had either a Navy or Marine Corps aviation background.

29 September The Navy's Ship-Deployable, Tactical, Airborne Remotely-Piloted Vehicle (RPV) (STAR) achieved the first automatically closed-loop recovery of an RPV into a net-encapsulated arresting assembly. The test occurred at the National Parachute Test Range, El Centro, Calif.

30 September *Oriskany*, the last Essex-class attack carrier, was decommissioned at San Francisco, Calif., and placed in the mothball fleet. *Oriskany* saw extensive action in the Korean and Vietnam conflicts.

4 October The first overseas operational commitment on a carrier for the AV-8A aircraft began when VMA-231, equipped with the AV-8A Harrier, embarked on *Franklin D. Roosevelt* and departed for the Mediterranean Sea for a Sixth Fleet deployment.

5 November The latest model of the Sea Cobra helicopter, the AH-1T, was turned over to the Marine Corps from Bell Helicopter Textron for further testing. The new version offered an improved payload of 4,392 pounds over the previous payload of 2,739 pounds.

13 November The first at-sea firing tests of the SM-2 (extended range) guided missile from *Wainwright* (CG 28) were completed, using a modified Terrier fire control system to control the missile flight. *Wainwright's* test capped a highly successful five-year program with observers reporting excellent accuracy.

1976—Continued

1 December Naval Air Facility, China Lake, Calif., was disestablished after more than 30 years as a separate command, and became part of the Naval Weapons Center.

1 December NAAS Saufley Field, Fla., was disestablished. The closing of the basic tactical and combat flying base brought to an end one of the early fields used in association with the training of Naval Aviators at NAS Pensacola, Fla. The primary training installation was opened for flight purposes in 1940 and named after Richard C. Saufley, Naval Aviator #14, who was killed while on a record endurance flight on 9 June 1916 after being in the air 8 hours and 51 minutes. Saufley Field was used initially by aviation students practicing landings and takeoffs away from the normal flight pattern at NAS Pensacola. Established as NAAS Saufley Field in 1943, aviation students in basic training received instructional courses in ground training, formation flying, and cross-country flying employing the SNJ Texan and T-28 aircraft.

1977

6 January The first F404 development engine was tested successfully at the General Electric plant in Lynn, Mass., approximately a month ahead of schedule.

13 January NAS Jacksonville, Fla., announced that two AV-8A Harrier aircraft had made a bow on approach and landing aboard *Franklin D. Roosevelt*. This may have been the first time in Naval Aviation history that a fixed-wing aircraft made a bow-on, downwind landing aboard a carrier at sea. This landing, with jets facing aft, demonstrated that V/STOL aircraft could be landed aboard a carrier without many of the conditions necessary for fixed-wing, non-V/STOL aircraft.

14 January For the first time, an all-nuclear-powered task group was operating in both deployed fleets. The Seventh Fleet task group was composed of *Enterprise* and her nuclear-powered escort ships, while the Sixth Fleet task group had *Nimitz* with her nuclearpowered escort ships.

31 January The TA-7C, a two-seat Corsair II converted from an earlier model and designated a combat crew and instrument trainer, was delivered to the Navy for use at NAS Cecil Field, Fla., and NAS Lemoore, Calif. Replacement pilots for the light attack squadrons flying A-7s would train in the TA-7Cs.

27 February *Enterprise* and her escort ships were directed to operate off the east African coast in response to public derogatory remarks against the U.S. by the President of Uganda and his order that all Americans in Uganda meet with him.

1 March The Naval Air Rework Facility and Naval Air Station at Lakehurst, N.J., were disestablished and the mission of the Naval Air Engineering Center was modified to absorb their functions.

1 March The Navy's new F/A-18 fighter/attack aircraft was assigned the name Hornet, a name often used for Navy ships-of-the-line. The plane, scheduled for fleet delivery in the early 1980s, would replace the F-4 Phantom II and the A-7 Corsair II.

24 March Initial service acceptance trials for the CH-53E Super Stallion were completed at NATC. The growth version of the CH-53E had three turbine engines instead of two. The Super Stallion carried mission loads of 16 tons compared to nine tons for the CH-53D. It had 7 rotor blades instead of 6 and could accommodate 56 troops.

25 March NAVAIR announced that its Advanced Concepts Division and the Naval Air Development Center, Warminster, Pa., were testing a lighter-than-air craft known as Aerocrane. This project represented the first government-sponsored study of lighter-than-air flight in several years.

5 April The Navy took delivery of the new T-44A trainer at NAS Corpus Christi, Tex. The Beech aircraft signaled a significant modernization trend in the Navy's flight program. The T-44A would eventually replace the TS-2A Tracker, flown by training squadrons since the early 1960s.

8 April The Navy's first E-2C ARPS aircraft joined the fleet at NAS Norfolk, Va., assigned to VAW-121. The ARPS aircraft was designed to improve the radar capability in its mission of airborne early warning. VAW-121 was scheduled to receive three additional ARPS aircraft that year, making it the first ARPS squadron.

12 April An operational requirement was established for night vision capability in U.S. Marine Corps transport helicopters.

21 April *Franklin D. Roosevelt*, the first carrier to launch a jet plane, 21 July 1946, returned to the U.S. from her last overseas deployment prior to her decommissioning on 1 October 1977.

1977—Continued

22 June The new OV-10D Bronco series, undergoing test and evaluation at NATC's Strike Aircraft Test Directorate, Patuxent River, Md., was equipped with a night vision sensor which allowed the two-man crew to pinpoint targets in the dark. Called FLIR, for Forward Looking Infrared Radar, the sensor could detect the thermal radiation from all objects in its field of view, including individual soldiers. While primarily designed to provide a "night eyes" capability, FLIR also offered various degrees of vision through camouflage, dust, smoke, haze and light fog. It was also to be used for navigation; terrain avoidance and surveillance; target detection, recognition and tracking; gun laying; and as a landing aid.

13 July An F-4J Phantom II landed for the first time using the microwave landing system (MLS) at the FAA Test Facility at Atlantic City, N.J. A pilot from the Naval Air Test Center, Patuxent River, Md., was at the controls. The MLS was designed to reach out electronically, catch the target aircraft, and fly it to a safe landing without the aircraft's pilot touching the controls.

23 July Rear Admiral Alan B. Shepard, Jr., USN, was inducted into the Aviation Hall of Fame. He was cited for outstanding contributions to aviation as a Naval Aviator, instructor and test pilot, and for his contributions to space technology. He was the first American launched into space and the fifth to walk on the moon.

11 August The first CH-46E Sea Knight with newly developed fiberglass rotor blades was flown by Marine Corps helicopter pilots. The helicopter was the first of 400 to be retrofitted with new rotor blades which were less susceptible to corrosion and fatigue damage.

26 August The Navy unveiled its new XFV-12A vertical/short takeoff and landing research aircraft at the Rockwell International facility in Columbus, Ohio. The XFV-12A, a single engine, single seat, thrust-augmented wing prototype high-performance fighter aircraft, was designed to operate from small ships.

29 August The first production model of the P-3C Orion update II arrived at NATC for technical evaluation. It incorporated the latest in avionics and weapons systems, including a turret-mounted infrared detection device to drop out of the nose to identify targets day or night. The aircraft also had the Harpoon air-to-surface missile system.

1 September The LAMPS MK III helicopter contractors were selected by the Navy. Sikorsky Aircraft Division was selected to build the helicopter and General Electric's aircraft engine group was selected to provide the engines. The LAMPS helicopter was intended to carry a crew of three, fly 170 miles an hour and operate at altitudes up to 10,000 feet.

30 September The Joint Cruise Missile Project Office was established in the Naval Material Command with the Navy and Air Force sharing responsibility for developing a cruise missile. The Cruise Missile Project Office had been a project of the Naval Air Systems Command.

1 October The Naval Aviation Logistics Center became fully operational at Patuxent River, Md. The new center was responsible for the implementation, coordination and management of Navy-wide depot-level aviation maintenance programs.

31 October The Department of Defense directed a significant relocation of the essential mission of the National Parachute Test Range at El Centro, Calif. The Range had been responsible for RDT&E for parachute systems and for providing common airfield support to aviation units. With this change, the RDT&E mission was moved to the Naval Weapons Center at China Lake, Calif. The airfield support mission remained at El Centro with the existing Naval Air Facility there.

14 November The Chief of Naval Air Training formally accepted the T-34C aircraft manufactured by Beech Aircraft Corporation. The T-34C, a turboprop, two-place trainer, was to replace the T-34B and T-28 training aircraft.

1978

2 February The Tomahawk cruise missile was launched successfully from the submarine *Barb* (SS 220) and flew a fully guided land attack test flight that terminated at Edwards AFB, Calif. This was the first launch of the Tomahawk from a submarine.

9 February The first satellite of the new Navy Fleet Satellite Communications System was launched. This system satisfied the need for worldwide tactical command, control and communications for the entire fleet.

16 February Eleven of the 35 astronaut candidates selected to participate in NASA's space shuttle program were Navy personnel. Eight of the Navy selectees were in the pilot training program and the other three were trained as mission specialists.

1978—Continued

27 February A contract for the CH-53E Super Stallion helicopter was awarded to Sikorsky Aircraft to begin full-scale production. The CH-53E provided the Navy and Marine Corps with a heavy-lift helicopter, able to lift twice as much as the earlier D model.

28 February The Department of Defense authorized full-scale development of Sikorsky Aircraft's SH-60B LAMPS MK III helicopter. The aircraft was designed primarily for antisubmarine and antiship missions and to be deployed aboard frigates, destroyers and cruisers.

17 March NASA selected four two-man crews for early orbital flights of the space shuttle. Captain John W. Young, USN, was selected as commander and Commander Robert L. Crippen, USN, as pilot for the first scheduled orbital test. Colonel Joe H. Engle, USAF, and Commander Richard H. Truly, USN, were selected as the backup crew. Also included in the first group of two-man crews was Lieutenant Colonel John R. Lousma, USMC.

10 April The first TA-7C attack trainer arrived at NATC Patuxent River, Md., for Board of Inspection and Survey trials. The TA-7C was designed to provide a position for both the instructor and the student in the aircraft, thus providing a more efficient method of instruction while reducing fuel consumption about one-half. The new two-seater would also reduce the number of aircraft required for transition training.

14 April The first of 12 C-2A Greyhounds rolled off the SLEP line at NARF North Island, Calif. SLEP would add between seven and ten years of service to the carrier-on-board-delivery aircraft. There was no other aircraft in the Navy's inventory which could carry as many supplies and personnel to a carrier at sea.

9 June Rear Admiral William L. Harris, NWC Commander, accepted the Daedalian Weapons Systems Award in San Antonio, Tex., on behalf of the Naval Weapons Center and the Naval Air Systems Command. The Order of Daedalians, a national fraternity of military pilots, selected NWC and NAVAIR as co-winners of the 1978 award in recognition of the success of these two Navy commands in working together as a team in the development and improvement of a family of heat-seeking guided missiles known as Sidewinder. The Daedalian Weapons System Award and accompanying perpetual trophy was presented annually by the Order of Daedalians to the individual, group or organization, military or civilian, judged to have developed the most outstanding weapon system. The recipient was selected from nominations submitted by the Departments of the Army, Navy, and Air Force on a rotating basis.

8 July The Naval Air Test and Evaluation Museum at NAS Patuxent River, Md., opened its doors to the public for the first time. Its premier exhibition depicted the full scope of test and evaluation in Naval Aviation. The displays were varied, showing the many different types of aircraft which have passed through the Patuxent River test facility over the years.

21 July The final flight of the service acceptance trials for the AH-1T Cobra helicopter gunship was made at Naval Air Test Center, Patuxent River, Md. The helo carried an increase of more than 200 percent in its armament payload and was designed to fly farther and fight longer and harder over a target than previous models of the Cobra.

22 July Captain Holden C. Richardson was inducted into the National Aviation Hall of Fame at Dayton, Ohio. Naval Aviator #13, Captain Richardson was the first Naval Aviation engineering officer to be so honored.

2–3 August The mock-up of the SH-60B ASW helicopter was put through shipboard compatibility trials aboard *Arthur W. Radford* (DD 968). Earlier trials were conducted July 25-26 aboard *Oliver Hazard Perry* (FFG 7). The SH-60B was being developed by Sikorsky Aircraft.

3 August NAVAIR reported a major advance in the technology of escape systems. During the summer, the Naval Weapons Center at China Lake, Calif., successfully tested a vertical-seeking ejection seat. While carrying a dummy crew member, the seat was fired downward from a suspended test module. It traveled downward less than 45 feet before reversing direction and traveling upward; it then parachuted safely to the ground. These tests demonstrated that the vertical-seeking seat would make it possible to safely eject upside down, within 50 feet of the surface, thus greatly increasing the safety envelope of ejection seats.

14 September A Navy technical evaluation was completed on the CH-53E Super Stallion helicopter to determine if performance had been altered by changes made since the initial trials conducted by the Board of Inspection and Survey. The Super Stallion successfully completed the 60-hour test program.

1978—Continued

15 September The test-bed P-3C Orion was delivered to the Naval Air Development Center, Warminster, Pa., for the Update III program. The aircraft featured an advanced signal processor developed by IBM which provided a four-fold improvement in isolating sounds of submerged targets from ocean background noise. Lockheed California Company was the prime contractor of the P-3C and had been involved with its development over the past 17 years.

9 November The U.S. Marine Corps' newest light attack aircraft, the AV-8B, flew for the first time at McDonnell Douglas Corporation in St. Louis, Mo. The AV-8B Harrier had more than double the payload and radius of its predecessor, the AV-8A.

18 November The Navy's new strike fighter, the F/A-18 Hornet, made its first flight at McDonnell Douglas Corporation in St. Louis, Mo. The Hornet was designed for a combat radius of more than 550 miles and a ferry range of more than 2,000 miles.

18 December Commander, NAVAIR formally established the undergraduate Jet Pilot Training System Project. This project was designed to provide Naval Aviation with an integrated training program consisting of aircraft, simulators, academics, and training management. VTXTS was aimed at the intermediate and advanced jet training levels.

27 December *Constellation* and her escort ships were directed to the vicinity of Singapore in response to the internal crisis in Iran and because of vital U.S. interests in the Persian Gulf area. On 2 January 1979, the president directed *Constellation* and her escort ships to remain on station in the South China Sea and not enter the Indian Ocean.

1979

16 January The first F/A-18 Hornet arrived at NATC Patuxent River, Md., for evaluation trials. Testing during the year included in-flight refueling, land-based catapult launchings and arrested landings, speed tests and at-sea carrier takeoffs and traps aboard *America*.

24 January Vice President Walter P. Mondale presented Lieutenant Colonel Herbert Fix with the Harmon International Aviation Trophy. Colonel Fix received the award for his role as Commanding Officer of HMH-463 during the evacuations of Phnom Penh and Saigon in 1975. The citation praised Colonel Fix for carrying out his missions "without casualties among the aircrews of 16 rotary wing aircraft in HMH-463, although the operations took place under combat conditions involving antiaircraft fire, machine gun and small arms fire, and in part at night with few navigational aids." Colonel Fix was the first U.S. Marine Corps pilot to receive the Harmon Trophy. At the time of the award, he was Project Manager for the H-1/H-3 Helicopters Project Office at the Naval Air Systems Command.

25 January The Navy's YAV-8B, the Harrier prototype built by McDonnell Douglas, arrived at the Naval Air Test Center, Patuxent River, Md., to test its aerodynamic improvements not found in the AV-8A.

28 January *Constellation* and her escort ships were released from contingency operations in the South China Sea. The contingency operations had been issued in response to the internal crisis in Iran. The crisis abated when the Shah of Iran departed for exile on 16 January. Due to the uneasy situation in Iran all U.S. government dependents and nonessential American citizens were ordered to evacuate the country on 30 January.

9 February The Secretary of the Navy announced that the helicopter portion of the Navy's LAMPS MK III was to be known officially as the Seahawk. Designated SH-60B, the Sikorsky helicopter took its name from the Curtiss SC-1 Seahawk which was a catapult launched, noncarrier, float plane of late World War II.

The newest plane in the Navy inventory, the F/A-18 Hornet, is examined by naval officers.

1979—Continued

14 February The Tomahawk missile was launched from the nuclear powered attack submarine *Guitarro* (SSN 665) off the California coast. This successful test was part of a planned series of three submarine launches and flight tests of the Tomahawk conducted between February and June which demonstrated the missile's over-the-horizon capability to search for, locate, and conduct simulated attacks on a target ship at sea.

27 February The Navy took delivery of the last A-4 Skyhawk from the McDonnell Douglas Corporation, setting a record for the longest production run for any U.S. military aircraft. Built as an attack bomber and as a two-place trainer, the A-4 had been in continuous production for 26 years. The final Skyhawk off the production line was an A-4M attack bomber built for operation by the Marine Corps. It was the 2,960th Skyhawk manufactured by McDonnell Douglas and was delivered to VMA-331.

7 March *Constellation* and her escort ships were ordered to the Gulf of Aden in response to the conflict between North and South Yemen. The Gulf of Aden and the Persian Gulf were considered vital waterways for the passage of petroleum products to the U.S. and her allies.

11 March A P-3B Orion from NATC Patuxent River, Md., flew the first transoceanic flight guided by NavStar, the space-based radio navigation system. The six-hour flight was from NAS Barbers Point, Hawaii, to NAS Moffett Field, Calif. The NavStar system comprised 24 satellites in earth orbit providing radio navigational information.

20 March The last variant of the P-2 Neptune rolled off the production line at ceremonies in Japan. This was the longest production run of any aircraft type in history, 34 years from the first model which was built in 1945 in Burbank, California by the Lockheed Corporation. The P-2 was the mainstay of the U.S. Navy's ASW patrol fleet during the 1950s and early 1960s until it was replaced by the P-3 Orion.

26 March The AV-8A Harrier was used at NATC Patuxent River, Md., to test a new ski jump ramp developed by the British to cut down the takeoff distance for the Harrier. The new ski jump ramp was designed with a 12-degree angle of elevation and was 130 feet long. The total takeoff distance for a Harrier using the new ramp was 230 feet compared with the 930-foot runway necessary for a Harrier to make a no-catapult, flat-surface launch. NATC Patuxent River was evaluating the ramp for possible use in the fleet.

16 April *Midway* relieved *Constellation* as the Indian Ocean contingency carrier. *Midway* and her escort ships continued a significant American naval presence in the oil-producing region of the Arabian Sea and Persian Gulf.

21 April The Navy's Supersonic Tactical Missile test vehicle made its first flight at the Pacific Missile Test Center, Point Mugu, Calif. This advanced integral rocket/ramjet test vehicle was developed by Vought. It was described as a major step toward development of a new generation of high performance, air-to-surface tactical standoff missiles.

23 April In a ceremony at NAS Norfolk, Va., Vice Admiral Forrest S. Petersen transferred ownership of the last Kawanishi H8K2 flying boat to the Japanese Museum of Maritime Science. Code named Emily by the allies during World War II, the big craft was brought to the United States by the Navy late in 1945 to undergo tests at Patuxent River, Md. When the tests were completed, the Emily was stored at Norfolk and outlasted all its sister aircraft. In July 1979, the Museum of Maritime Science transported the Emily to Tokyo.

30 April A RH-53D Sea Stallion from HM-12 set a new nonstop, transcontinental flight record by flying from Norfolk, Va., to San Diego, Calif. The helicopter flew 2,077 nm in 18.5 hours, air refueling from an Air National Guard HC-130 Hercules. The flight demonstrated the long-range, quick-response capability of the RH-53D helicopter and was commanded by Lieutenant Rodney M. Davis.

22 May The first of two McDonnell Douglas AV-8C Harriers arrived at NATC Patuxent River, Md., for service acceptance trials. Improvements built into this aircraft over the AV-8A included a new UHF radio, a chaff and flare dispensing system, lift improvement devices, a radar warning system and secure voice equipment.

30 May *Midway* and her escort ships were released from contingency operations in the Arabian Sea and departed for the Pacific.

12 June The Deputy Secretary of Defense approved the mission element need statement for the VTXTS. This system represented a major step toward meeting the continuing requirement to provide undergraduate pilot training for student Naval Aviators and transition students of the U.S. Navy and Marine Corps.

1979—Continued

20 June Lieutenant Donna L. Spruill became the first Navy woman pilot to carrier qualify in a fixed-wing aircraft. Lieutenant Spruill piloted a C-1A Trader to an arrested landing aboard *Independence.*

1 July With the disestablishment of U.S. Army Executive Flight Detachment, HMX-1 became the single source of helicopter support for the White House.

17 July *Saipan* was operating off the coast of Nicaragua for possible evacuation of American diplomats and others due to the turmoil surrounding the fall of that government.

18 July VP-23, flying the P-3C Orion, fired the new Harpoon missile. VP-23 was the first operational fleet patrol squadron to receive, fire and make an operational deployment with the Harpoon missile. On August 17, a ceremony at NAS Brunswick, Maine, marked the introduction of the Harpoon antiship missile into operational service as an air-launched weapon.

19 July The President announced he had instructed the U.S. Seventh Fleet to aid the Vietnamese "boat people" and assist them to safety. U.S. Naval Aviation and surface units of the Seventh Fleet stepped up patrolling, assistance and rescue efforts in support of these Vietnamese refugees.

Vietnamese refugee boarding White Plains (AFS 4) after being rescued from their 35 foot boat in the South China Sea NAH-002785

Aerial view, taken by a P-3B Orion from VP-22, of boat people aboard their small craft displaying an "SOS" sign 1175289

21 July Neil A. Armstrong, a Navy pilot during the Korean War, was inducted into the Aviation Hall of Fame in Dayton, Ohio. He served as an experimental test pilot for the National Advisory Committee for Aeronautics and flew a variety of high speed aircraft including the X-15. Later, after being selected as an Astronaut by NASA, he served as command pilot of the Gemini 8 mission, during which he participated in the first docking of a spacecraft. His most notable achievement came as commander of the Apollo 11 Lunar Landing Mission when he became the first man to step on the moon.

24 July The Bell XV-15 successfully converted in flight from the helicopter mode to the fixed-wing mode. The XV-15 flight test program was founded as a joint U.S. Navy/NASA/Army research effort to evaluate the tilt rotor concept.

27 July The Navy's newest turbo-jet-powered aerial target, the Northrop BQM-74C, successfully completed its first flight over the Pacific Missile Test Center, Point Mugu, Calif. The 33-minute flight also marked the first airborne launch of the BQM-74C when the target was launched from under the wing of an A-6 Intruder. Following completion of the flight, the BQM-74C was safely landed at sea, retrieved, and returned to Point Mugu for inspection, refurbishment, and eventual reuse. The BQM-74C was the only target in the world using a Digital Avionics Processor which allowed it to provide realistic low cost antiship cruise missile simulation in training.

30 August The first prototype of the Navy's SH-60B Seahawk helicopter was unveiled at the Sikorsky

1979—Continued

Aircraft Division at Stratford, Conn. The SH-60B was designed to operate from destroyers, frigates and cruisers in performing its role in the LAMPS mission—detecting, classifying, locating and destroying hostile submarines and surface vessels over extended ranges. Secondary missions for the helicopter included search and rescue, medical evacuation and general fleet support. The SH-60B was officially dubbed the Seahawk in February 1979.

30 August A U.S. Navy CH-53D Sea Stallion helicopter of VR-24 lifted a 12-foot bronze statue of the Madonna and Child to the top of Mt. Tiberius on Capri, Italy, to replace one which had been destroyed by lightning. The statue was too large to be transported overland.

15 September The first UC-12B for the Navy arrived at NATC Patuxent River, Md., for preliminary evaluation tests. The UC-12B is the military version of the Beechcraft Super King Air 200 which was purchased by the Navy to replace aging reciprocating engine aircraft and supplement the Navy's transport inventory. The UC-12B was designed to carry 8 to 12 passengers. It had a maximum cruise speed of 300 mph and a range up to 1,760 miles. The aircraft could operate from short, grass runways and fly at 31,000 feet. It had advanced solid state avionics which could automatically navigate the plane through bad weather conditions. The UC-12B had been designed for reliability, maintainability and low cost of operation, with a configuration which lent itself to a variety of transport, training and utility missions.

18 September The Circulation Control Rotor made its first flight using the airframe and propulsion system from an HH-2D helicopter. This CCR was initiated by the Navy as an advanced rotor system with improved performance, reduced maintenance requirements, and reduced vibration levels from extant rotor systems.

28 September RVAH-7 was disestablished, closing the history on the last RA-5C Vigilante squadron in the Navy. The Vigilante had provided 15 years of tactical support to the fleet as a photographic reconnaissance plane and had served valiantly in Vietnam with integrated intelligence sensors and photographic equipment. Some of the RA-5C Vigilantes were planned for use as drones.

1–8 October The AV-8C Harrier shipboard trials were conducted aboard *Saipan*. Testing consisted of 33 flights involving short take-offs, vertical take-offs and vertical landings by the AV-8C.

11 October *Nassau* and other amphibious ships headed for Guantanamo Bay, Cuba, in a show of force ordered by the President in response to maneuvers by a Russian combat brigade in Cuba. On 17 October, 1,800 Marines landed in Guantanamo Bay as a demonstration of naval power in the wake of the Soviet refusal to withdraw the Russian combat brigade from Cuba.

14 October The A-6E TRAM aircraft was introduced into the fleet, at NAS Oceana, Va. The A-6E TRAM provided the U.S. Navy with the finest all-weather attack system in the world.

28 October *Kitty Hawk* and her escort ships were directed to operate south of the Korean peninsula in response to the assassination of South Korean President Park Chung Hee on 26 October.

30 October The F/A-18 Hornet made its first landing at sea aboard *America* for five days of sea trials. A total of 32 catapult and arrested landings were completed.

4 November One Naval Aviator and 14 Marines were among the more than 60 Americans taken hostage when the United States Embassy in Tehran, Iran, was seized by a mob of Iranian revolutionaries. Spokesmen for the mob demanded that the United States return to Iran the deposed Shah who was in a New York hospital at the time.

18 November *Midway* and her escort ships, which had been operating in the Indian Ocean, arrived in the northern part of the Arabian Sea in connection with the continuing hostage crisis in Iran.

20 November The last RA-5C Vigilante in the Navy departed NAS Key West, Fla., on her final flight. The RA-5C was one of the Navy's finest and only all-weather carrier based reconnaissance aircraft. With this final flight, the entire reconnaissance inventory of 156 Vigilante aircraft was phased out.

21 November *Kitty Hawk* and her escort ships were directed to sail to the Indian Ocean to join *Midway* and her escort ships which were operating in the northern Arabian Sea. The two carrier forces provided the U.S. with A-6 and A-7 attack aircraft and F-4 and the modern F-14 fighter aircraft, which could respond to a variety of situations if called upon during the Iranian hostage crisis.

1979—Continued

3 December *Kitty Hawk* and her escort ships arrived on station in the northern Arabian Sea for contingency operations during the Iranian hostage crisis. This was the first time since World War II that the U.S. Navy had two carrier task forces in the Indian Ocean in response to a crisis situation.

12 December The development program for the LAMPS MK III SH-60B Seahawk helicopter reached a major milestone when the aircraft completed its first flight at the Sikorsky test facility in West Palm Beach, Fla.

17 December The first two-seater F/A-18 Hornet arrived at NATC Patuxent River, Md., for armament and stores separation testing. During 1979 NATC had conducted 416 flights in the F/A-18 for a total of 555 hours testing the new fighter/attack plane. On 12 December NATC completed a successful live firing of a Sidewinder missile from the F/A-18.

21 December The Defense Department announced a three-ship nuclear-powered carrier battle group from the Sixth Fleet would deploy to the Indian Ocean to relieve the Seventh Fleet carrier battle group led by *Kitty Hawk*. The Sixth Fleet carrier battle group consisted of the nuclear-powered *Nimitz* and her nuclear-powered escort ships.

24 December A massive Soviet airlift of 5,000 Russian airborne troops and equipment into the Afghanistan capital of Kabul was conducted. The U.S. protested the large influx of Soviet troops which the Soviet Union claimed were there at the request of the Afghanistan government. On 27 December, a Soviet-backed coup installed a new president in Afghanistan. Two carrier task forces centering around *Midway* and *Kitty Hawk* continued contingency operations in the northern Arabian Sea.

31 December During 1979, Navy carrier forces responded to five crisis situations around the world. The following carriers responded for contingency operations: *Constellation* responded to the crisis which involved North and South Yemen; *Saipan* responded during the Nicaraguan turmoil; *Nassau* was involved in the response to Russian combat troops in Cuba; *Kitty Hawk* responded to the alert in Korea; and *Midway* and *Kitty Hawk* conducted contingency operations during the Iranian hostage crisis.

31 December U.S. Navy surface and aviation forces of the Seventh Fleet continued their patrols and rescue assistance efforts connected with the Vietnamese boat people following the President's order in July. During the last six months of 1979, Navy ships embarked over 800 Vietnamese refugees. Vietnamese refugees picked up by merchant vessels with the aid of P-3 patrol aircraft totaled over 1,000.

1980

1 January *Midway* and *Kitty Hawk* continued on contingency operations in the Arabian Sea in response to 53 Americans held hostage at the American Embassy in Teheran, Iran, since 4 November 1979.

1 January VP-23 deployed from Keflavik, Iceland, to Diego Garcia and made its first operational flight out of the Indian Ocean base within ten days after receiving orders, thereby demonstrating its rapid deployment capability.

2 January A detachment of P-3B Orions of VP-10, deployed at Rota, Spain, flew photoreconnaissance missions to locate areas damaged in an earthquake which struck the Azores the day before, killing some 50 persons and injuring another 500.

4 January *Nimitz* rendezvoused with her nuclear-powered escort ships in the Mediterranean and headed to the Indian Ocean via Africa's Cape of Good Hope to relieve *Kitty Hawk* which was on contingency duty. This left *Forrestal*, the only carrier with the Sixth Fleet, in the Med.

4 January The first TA-7C Corsair II assigned to the Pacific Missile Test Center, Point Mugu, Calif., was test flown.

7 January Reconnaissance Attack Wing One was disestablished. The wing had consisted of nine fleet squadrons, one training squadron and a support command which had provided tactical reconnaissance for Navy carrier deployments. The phaseout coincided with the final retirement from the fleet of all RA-5C Vigilantes on 20 November 1979 and the disestablishment of the last RVAH squadron on 28 September 1979.

22 January *Nimitz* and her escort ships joined *Midway* and *Kitty Hawk* and their escort ships on station in the Arabian Sea. The following day *Kitty Hawk* departed for Subic Bay, R.P., having spent 64 days in operations connected with the Iranian crisis.

1980—Continued

5 February *Coral Sea* relieved *Midway* which had been on contingency operations in the Arabian Sea since the Iranian hostage crisis broke out in November 1979.

29 February VMO-1 began flying the new OV-10D Bronco observation plane at New River, N.C. The D version, manufactured by Rockwell International, had the FLIR and laser rangefinder designator systems. The new systems enabled the pilot to locate a target at night or in bad weather and then pinpoint the exact range and location with a laser beam. An automatic video tracker computer system locked on to a moving target with information provided by the infrared system. The TV-like video display gave the pilot and observer a computer-assisted sighting capability. Conventional improvements included the upgraded T-76 turboprop engine, larger fiberglass propellers and an increased fuel capacity.

1 March It was reported that the CNO had proposed to the Secretary of Defense a plan to reactivate the *Essex*-class carrier *Oriskany* and several other major moth-balled ships to help fulfill the Navy's missions in the Indian Ocean and other areas.

6 March *Nassau* began a month-long cruise to the Caribbean to demonstrate U.S. capability to defend the Panama Canal in accordance with the 1979 treaty with Panama. *Nassau* had a 400-man Marine detachment, CH-46 Sea Knight and CH-53 Sea Stallion helicopters and AV-8A Harriers on board.

16 April *Dwight D. Eisenhower* and her nuclear-powered escort ships departed East Coast ports en route to the Indian Ocean to relieve *Nimitz*. This was the second all nuclear-powered task force to head for the Indian Ocean since the beginning of the Iranian hostage crisis. Two days later, *Constellation* and her escort ships departed Subic Bay, R.P., steaming to the Indian Ocean to relieve C*oral Sea*.

24 April Eight RH-53D Sea Stallions operating from *Nimitz* in the Arabian Sea took part in a joint task force operation to rescue the American hostages in Tehran, Iran. The mission was later aborted at a desert refueling site. Subsequently, one of the helicopters collided with a C-130 Hercules aircraft resulting in the loss of eight lives. All other personnel were evacuated on the remaining C-130s.

30 April *Constellation* and her task group relieved *Coral Sea* and her escort ships. *Coral Sea* had been on station for 89 days in connection with the Iranian crisis.

5 May *Saipan* and other Navy ships provided humanitarian search and rescue support operations for the vast sealift of Cuban refugees heading for the U.S. through the Florida Straits. The Navy ships had been diverted from the annual combined training exercise Solid Shield to undertake the mission.

8 May Arriving in the Arabian Sea from the U.S. via the Cape of Good Hope, *Dwight D. Eisenhower* conducted turnover with *Nimitz*, which had been involved in Iranian contingency operations for 115 consecutive days.

26 May The President embarked on *Nimitz* off Norfolk, Va., and thanked the men of *Nimitz* and her escort ships for their sacrifice during an extended nine-month deployment to the Mediterranean and the Indian Ocean. *Nimitz* had spent 144 straight days at sea in connection with the Iranian hostage crisis.

27 May *Coral Sea* was diverted to standby duty south of the Cheju-Do Islands in the Sea of Japan in response to conditions of civil unrest in the Republic of Korea. She was relieved by *Midway* three days later.

31 May P-3 Orions from various patrol squadrons of Patrol and Reconnaissance Force, Seventh Fleet, continued their search, begun the previous year, for refugees in the South China Sea and Gulf of Thailand. These aircraft had investigated more than 15,000 radar contacts and dropped radio transmitters and/or refugee survival packs to people in distress. To this date, over 2,500 refugees had been rescued through efforts by all elements of the Navy.

3 June The first AGM-65E laser Maverick missile was fired at Eglin AFB, Fla., from a Marine Corps A-4M Skyhawk. The missile was the laser-guided version of the USAF's air-to-ground Maverick with a heavier warhead. It was being developed by Hughes Aircraft Company for use by the Marine Corps in close-air support of combat troops.

15 June A loading demonstration of the F/A-18 Hornet was held at NATC Patuxent River, Md. The aircraft showed off some of its weapons capabilities, among them the 20mm Vulcan cannon, AIM-7F advanced Sparrow, AIM-9L Sidewinder, flare dispensers, rocket launchers, advanced fuel-air explosives, and a Rockeye and other bombs. Hornet weaponry also included Walleye, Maverick, Harpoon and HARM missiles, and laser-guided bombs.

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23 June The Navy granted approval for service use for two advanced sonobuoys. The AN/SSQ-2 Directional Command Active Sonobuoy System and the AN/SSQ-77 Vertical Line Array DIFAR represented the first major improvements in the sonobuoy field since the AN/SSQ-53 DIFAR was introduced in 1968. These sonobuoys reinforced their article's unique position as the vital link between the search aircraft and "enemy in liquid space." They provided a three-to-five fold improvement over existing active and passive airborne sensors.

8 July The Navy terminated its support operations at Key West, Fla., for the Cuban refugees. Eleven Navy ships as well as P-3 Orion patrol aircraft assisted the unofficial freedom flotilla which involved civilian boats crossing the Florida Straits to transfer Cuban refugees to the U.S. Over 115,500 had arrived from Mariel, Cuba, since the freedom flotilla began.

18 July Charles "Pete" Conrad, former Navy pilot and NASA astronaut, became the twelfth former Naval Aviator to be enshrined in the prestigious Aviation Hall of Fame, Dayton, Ohio.

30 July An automatic parachute release system developed by Vought Corporation was designed to save the lives of pilots who ejected from their aircraft under adverse conditions. The new system, developed with U.S. Navy funding, was called SEAPAC. It had seawater activated switches which automatically released the parachute harness when a pilot entered the water.

31 July A T-2C Buckeye was launched successfully from a fixed-angle, three-degree ski jump at Naval Air Test Center, Patuxent River, Md. This launch was the first part of feasibility demonstrations to evaluate the use of ramps for takeoffs by conventional, as opposed to V/STOL, aircraft.

31 July A Limited Duty Officer aviator program for second class, first class and chief petty officers, pay grades E-5 through E-7, was established, with the first 35 enlisted personnel selected and scheduled to report to NAS Pensacola, Fla., in April 1981. After completing aviation officer indoctrination, primary flight and maritime (prop) training, the new officers were assigned to an initial three-year tour as primary flight instructors. Major objectives of the program were to improve utilization and retention of aviators, provide further upward mobility for enlisted personnel, improve the flight instructor program and provide for replacement of aviators in selected shipboard billets.

17 August *Midway* relieved *Constellation* to begin another Indian Ocean deployment and complement the *Dwight D. Eisenhower* task group still on contingency duty in the Arabian Sea.

22 September *Dwight D. Eisenhower* and *Midway* continued contingency operations in the northern Arabian Sea as war erupted between Iraq and Iran.

12 October Ships of the Amphibious Force, Sixth Fleet, including *Guadalcanal,* began assisting the victims of a massive earthquake which devastated the Algerian city of Al Asnam. The ships took up positions 20–25 miles offshore to render helicopter support in the disaster relief efforts.

6 November *Ranger* and accompanying ships of her task group relieved *Midway* in the northern Arabian Sea. *Midway* thus completed her second Indian Ocean deployment in connection with the Iranian crisis, for a total of 157 days on the line.

11 November For the first time, the LAMPS SH-60B Seahawk worked with the RAST system aboard a ship underway. The guided-missile frigate *McInerney* (FFG 8) conducted the shipboard aspect of the exercise which included mainly electronic communications and not an actual landing. This test was conducted from the Bath Ironworks and Yard at Bath, Maine.

13 November VFA-125, the Navy's first F/A-18 Hornet squadron, was established at NAS Lemoore, Calif. The new squadron would train Navy and Marine Corps personnel to fly and maintain the new fighter-attack aircraft.

22 November Aircraft carrier suitability tests of the Tomahawk II medium range air-to-surface missile were completed.

25 November RH-53D Sea Stallions from VR-24, together with units of the U.S. Army and Air Force, began disaster relief assistance to victims of the devastating earthquake at Avellino, Italy, on 23 November which killed over 3,000 persons and made many more homeless. Commander, Fleet Air Mediterranean, headquartered at Naples, was director of U.S. military support efforts.

8 December *Independence* and her escort ships relieved *Dwight D. Eisenhower* and her task force which had been involved in Iranian contingency operations since 8 May. *Dwight D. Eisenhower* returned to Norfolk, Va., on 22 December after a 251-day deployment, the longest underway deployment for a Navy

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ship since World War II. She had been underway for 152 continuous days.

31 December Carrier operations during 1980 in connection with the Iranian crisis consisted of 10 tours by eight attack carriers (two with two tours each) in the Indian Ocean/Arabian Sea. The carriers accumulated a grand total of 723 days on station. Those with over 100 contingency days on station during the year included *Dwight D. Eisenhower,* whose two tours totaled 199 days; *Midway,* with two tours representing 118 days; *Constellation,* with 110 days; and *Nimitz,* with 108 days. Other carriers involved in contingency operations in the Indian Ocean were *Coral Sea, Ranger, Independence* and *Kitty Hawk.*

An F-4 Phantom II in colorful 1976 bicentennial markings.

An E-2 Hawkeye in colorful 1976 bicentennial markings.

An H-3 in colorful 1976 bicentennial markings.

A TA-4J Skyhawk in colorful 1976 bicentennial markings.

Pilot ejecting from aircraft aboard Shangri-La NH-90350

F-4J Phantom of VF-21 making a successful barricade arrested landing aboard Ranger.