



Sikorsky Archives News

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Sikorsky Serves the Presidents



The helicopter utilized by the President of the United States is strategic and symbolic, the flying office of America's Chief Executive at home and abroad. Sikorsky Aircraft has engineered, built, and supported the Presidential helicopters since 1957. The Sikorsky VH-3Ds and VH-60Ns of Marine Helicopter Squadron One (HMX-1) provide safe, timely, secure vertical lift for the Commander-in-Chief and other dignitaries as ordered by the White House Military Office. The polished "White Tops" built in Stratford, Connecticut are storied aircraft, modernized at the factory in accordance with a Special Progressive Aircraft Rework (SPAR) program. In 2017 alone, 50 years after the first official Presidential helicopter flight, they logged 6,300 flight hours in 160 Presidential lifts. The VH program marked a new chapter in June 2019 when Sikorsky received a low-rate initial production contract for the next Marine One. Visit us at Sikorskyarchives.com Contact us at iisha@snet.net 203.386.4356

Dwight Eisenhower became the first U.S. President to ride in a helicopter when he flew from the White House South Lawn to Camp David, Maryland in a three-seat Bell Model 47 (Air Force H-13J) on July 12, 1957. Operation Alert evacuated the President from Washington in a simulated nuclear attack, but a real emergency that September rushed the vacationing Eisenhower on a Sikorsky S-58 (Marine HUS-1) from Newport, Rhode Island to his fixed-wing Air Force One at Quonset Point, Rhode Island, for return to Washington, D.C. The White House soon after asked Sikorsky for an executive-appointed S-58 (Army VCH-34) built in Bridgeport, Connecticut with 12 airliner-style passenger seats, carpeting, curtains, and emergency floats.



Overall green Sikorsky S-58s equipped the Army Executive Flight Detachment and Marine Corps HMX-1 in 1958. (Sikorsky Archives)

The 14,000 lb S-58 was powered by a single Wright R-1820-84 piston engine and later introduced automatic stabilization equipment. Sikorsky News quoted Presidential pilot Army Major William Howell saying, "That equipment certainly takes the strain out of flying helicopters, and its automatic features contribute considerably to flight safety."

The Army stood up its Presidential helicopter detachment in the fall of 1957 with four VCH-34s at Davison Army Airfield in Fort Belvoir, Virginia. Marine experimental squadron HMX-1 meanwhile received five similar HUS-1Zs for a Presidential Flight Detachment at Quantico, Virginia. The Army formally named the Executive Flight Detachment in the summer of 1958 and with the

Marines kept five helicopters on 24-hour alert at Anacostia Naval Station in Washington.

The Army and Marine Corps shared the Presidential mission for 19 years and with the President aboard used the radio call signs Army One or Marine One, depending on the pilot in command. Soon after the Army olive and Marine green S-58s entered service, Sikorsky technical representative Harry Asbury suggested a white-top paint scheme to help cool the Presidential cabin. To this day, HMX-1 distinguishes White Top aircraft for the President from Green Tops for support and test missions. White Tops are maintained and modernized with isolated parts in secure facilities by squadron and factory personnel with Yankee White security clearances.

In September, 1959, President Eisenhower took Soviet Premier Nikita Khrushchev on a 30-minute aerial tour of Washington DC aboard Marine One. Sikorsky News reported the President told the Premier, ". . . he uses helicopters every chance he gets."



President Eisenhower took Soviet Premier Khrushchev on a tour of Washington in a Marine HSS-1Z White Top in 1959. (Sikorsky Archives)

In December 1959, a mix of Executive Flight Detachment aircraft and Fleet Marine helicopters supported Eisenhower on a 20,090-mile tour of 11 European, Asian, and North African countries in 19 days. The President arrived in foreign capitals by Air Force One, rode to ceremonies by car, and returned to airports by helicopter to save time.

In February and March 1960, Eisenhower visited Brazil, Argentina, Chile, and Uruguay supported by 15 helicopters from HMX-1. A formation flight at 14,000 ft over the Andes Mountains forced crews to wear oxygen masks. By January 1961, Army and Marine S-58s had flown 100 Presidential missions and the two overseas tours. Army One acquired a cabin air conditioner from a yacht at the request of Mamie Eisenhower. The Kennedy Administration continued to use the piston powered VCH-34s and HUS-1Zs, re-designated VH-34C/Ds in 1962. The first Army One is preserved in the U.S. Army Aviation Museum at Fort Rucker, Alabama.



John F. Kennedy started his presidency with Marine HUS-1Zs and Army VCH-34s in 1961. (Sikorsky Archives)

Sikorsky Sea Kings

The first Sikorsky S-61 (Navy YHSS-2) Sea King prototype powered by twin General Electric T58 turboshafts flew on March 11, 1959 and gave the Navy a new antisubmarine helicopter with record-setting performance and enhanced safety. In January, 1962, the joint Marine Corps-Army Executive Flight Detachment announced plans for eight Presidential HSS-2Zs. The 19,000 lb helicopters (soon redesignated VH-3As) were built in Stratford, Connecticut with picture windows on the left side, an auxiliary power unit on the right sponson, and a soundproofed, air-conditioned executive interior with radio telephones, a wet bar, and toilet.

President Kennedy had his first ride in a VH-3A

in May, 1962. In February 1964, four VH-3As – three Marine and one Army – flew cross-country to Los Angeles and later Palm Springs for Johnson to meet with Mexican President Mateos and former U.S. President Eisenhower. Johnson later split the Army Executive Flight Detachment to keep at least one VH-3A near his Texas ranch.



Kennedy transitioned to the relatively spacious Army One VH-3A in 1962. (Sikorsky Archives)

In July 1969, a VH-3A transported President Nixon 200 miles over water to the aircraft carrier USS Hornet for the recovery of the Apollo XI astronauts returning from the moon. Two more Navy SH-3As were subsequently converted to executive transports. Presidential Sea Kings had to be partly disassembled for deployment via Air Force jet transports. Teardown for “Glory Missions” took about eight hours and reassembly around 11 hours, plus a five-hour “penalty flight” for safety. In 1969, President Nixon took three VH-3As to London, Belgium, and Rome via C-5A Galaxy transport. He also took VH-3As to Cairo in June 1974 and gifted one air-conditioned helicopter to Egyptian President Sadat. (That long-serving aircraft was eventually refurbished in the US and returned to Egypt in May 2009.)



The VH-3A gifted by President Nixon to Egyptian President Sadat was refurbished by Clayton International and returned to Egypt in 2009. (U.S. Navy)

Nixon rode Army One from the White House to Andrews Air Force Base after his resignation on August 9, 1974; that VH-3A remains on display at Nixon's Presidential library in California. An additional White Top Sea King was restored and is in the National Naval Aviation Museum in Pensacola, Florida.

Sikorsky News in October 1973 reported on two VH-3As returned to HMX-1 after SPAR in Stratford. These overhauls refurbish components to blueprint tolerances rather than normal repair standards, and they replace parts with finite service lives at half the normal removal times. SPAR also incorporates Presidential fleet improvements. One of the SPAR VH-3As was the first executive Sea King delivered with the bifilar vibration absorber, bigger tail pylon, and larger tail rotor introduced on commercial S-61s and later Navy SH-3s. It was a forerunner of 11 new-build VH-3Ds delivered from December 1974.



Lyndon Johnson split the Army Executive Flight Detachment to keep a VH-3A near his Texas ranch. (Sikorsky Archives)

Sikorsky engineering remedied a VH-3D problem early in the Gerald Ford presidency. The six-foot-tall President frequently bumped his head boarding the helicopter. VH Program Manager Bill Hahn later told industry magazine *Rotor & Wing*, "Then someone on my staff came up with a simple solution: Install a rubber bumper around the top of the helicopter door. That way if President Ford banged his head against the aircraft he would be hitting it against a rubber cushion instead of the aluminum side of the helicopter."

In the spring of 1976 during the Ford Administration, a Department of Defense analysis recommended HMX-1 consolidate the Presidential helicopter fleet to save aircraft and personnel. Gerald Ford made the last flight on Army One, and the VH-3As were retired by VH-3Ds by the end of 1976. The VH-3Ds have moved Presidents and dignitaries ever since. One flew British Prime Minister Margaret Thatcher to and from Camp David for talks with President Reagan in 1986, another landed Pope Francis at the Downtown Manhattan/Wall Street Heliport in 2015 and Marine One glassware signed by President Jimmy Carter is still sold online today.



The VH-3D was upgraded with Carson composite main rotor blades. (Carson Helicopters)

The 21,500 lb VH-3D dispensed with the folding rotors of Navy sub-hunters and added a rear left cabin door with stairs. Through successive SPAR cycles, it acquired more powerful T58-GE-400B engines, high-lift composite main rotor blades, inertial and GPS navigators, the Traffic Collision Advisory System, survivability equipment, and crash-survivable flight recorders. With the President aboard, the VH-3D is the command and control platform of the US Commander-in-Chief,

and the Marine One communications suite includes secure and non-secure systems hardened against electromagnetic pulse.



The VH-3D retired the VH-3A in 1976 and has equipped HXM-1 ever since. (Sikorsky Archives)

A SPAR completed in 2002 increased VH-3D airframe life from 10,000 to 14,000 flight hours. The retractable landing gear of Presidential Sea Kings is now secured in the down position to save weight and maximize availability.

White Hawks

The VH-3D with its smooth ride and stand-up cabin big enough to seat 14 passengers gave the Executive Flight Detachment a helicopter popular with Presidents. (White Top utilization traditionally spikes in election years.) The smaller Sikorsky S-70 nevertheless offered a new deployable, survivable, crashworthy aircraft well-suited to contingency missions abroad. The 22,000 lb VH-60N mixed the energy-absorbing structures and landing gear of the Army Black Hawk with the Automatic Flight Control System and folding main rotor and horizontal stabilator of the Navy Seahawk. It enhanced Presidential safety with weather radar and engine exhaust suppressors. The new White Hawk cabin seated 11 and introduced limousine-like doors with power-folding steps. Delivery of the first VH-60N was acknowledged by President Ronald Reagan with a letter of thanks to Sikorsky workers in November 1988. Reagan rode the new Marine One to Camp David in January 1989.

During Operation Desert Shield in November 1990, President George H.W. Bush landed in a VH-60N on the amphibious assault ship USS



The first VH-60N White Hawk was delivered in 1988 (Sikorsky Archives)

Nassau to offer Thanksgiving greetings to military personnel in the Persian Gulf. He also arrived by White Hawk in troubled Mogadishu, Somalia in December 1992. The White Hawks self-deploy to domestic emergencies and fold without disassembly to fit C-17 and C-5 transports on Phoenix Banner missions around the world. A VH-60N carried President Bill Clinton over flooded North Carolina after Hurricane Floyd in September 1999. In September, 2005, a White Hawk landed President George W. Bush aboard the LHD USS Iwo Jima for briefings on Hurricane Katrina relief efforts in and around New Orleans.



George H.W. Bush arrived by VH-60N at the American Embassy Compound in Mogadishu, Somalia in 1992. (U.S. Army)

Nine White Hawks were delivered to replace the VH-1N Hueys then with HMX-1; eight still serve the President today. A VH-60N mid-life upgrade completed in 2002 upgraded White Hawk mission equipment. Marine White Hawks now have

the same General Electric T700-GE-401C engines used in Navy Seahawks. A VH-60N cockpit upgrade in 2012 gave them a digital “glass” cockpit built around the Common Avionics Architecture System used in the latest Army Special Operations Black Hawks and modernized Coast Guard Jayhawks.

VH-60Ns remain visible tools of U.S. foreign policy, deployed in detachments of two or three aircraft with 20 or 25 Marines. President Barack Obama deplaned Air Force One and boarded Marine One in Saudi Arabia in April 2016 to meet with allies about combatting the Islamic State. In November 2017, VH-60Ns shuttled President Donald Trump during crisis talks in South Korea.



George W. Bush landed in a VH-60N after Hurricane Katrina struck New Orleans in 2005. (U.S. Navy)

New 92's

President George W. Bush rode Marine One to lower Manhattan days after September 11, 2001. The magnitude of new threats led the White House to fast-track a VXX Presidential Helicopter Replacement in 2002. With aging VH-3Ds and VH-60Ns limited in performance and growing more expensive to operate, the Navy and Marine Corps sought a new helicopter with lower operating and support costs, and one able to add modern survivability equipment and Oval Office-in-the-sky communications. The Collier Award-winning S-92 was certified by the Federal Aviation Administration (FAA) in July

2004, and Sikorsky launched a VH-92 All-American tour with a stretched S-92 demonstrator to compete for the VXX contract. The stakes were high. Sikorsky President Steve Finger stated, “The government is not simply buying Presidential helicopters off the shelf. In fact, the winner receives hundreds of millions of dollars for research and development to advance their helicopter.”¹⁷ A Lockheed Martin - Agusta Westland bid to import, integrate, and re-engineer the Anglo-Italian EH101 in two concurrent increments won the VXX System Design and Development contract in 2005, but the three-engined VH-71A/B Kestrel was canceled in 2009 due to ballooning costs. The effort nevertheless built a new Presidential Helicopter Support Facility for future SPAR work at Naval Air Station Patuxent River, Maryland. The Naval Air Systems Command (NAVAIR) re-evaluated VXX requirements and formulated a streamlined plan that integrates mature mission systems and a 14-passenger executive interior into the rugged, flaw-tolerant S-92A, yet preserves the helicopter’s FAA airworthiness certification. Sikorsky received the VH-92A Engineering and Manufacturing Development contract on May 7, 2014. The 27,000 lb Presidential helicopter with an enhanced environmental control system is shielded against electromagnetic interference and pulse from nuclear events. It uses updated GE CT7-8A6 engines with added high-and-hot power for HMX-1 administrative and contingency missions.



Sikorsky stretched an S-92 demonstrator for the original VXX competition. (Sikorsky Archives)

The first VH-92 Engineering Development Model (EDM 1) first flew on July 28, 2017 at Stratford and soon after went to Sikorsky Systems Integration in Owego for instrumentation. EDM 2 followed with its first flight on November 11, 2017. Four System Demonstration Test Articles (SDTAs) built in Coatesville, modified in Stratford, and missionized in Owego are earmarked for Initial Operational Test and Evaluation and will ultimately join the Presidential fleet.

NAVAIR plans to follow the SDTA helicopters with 17 VH-92A production aircraft delivered

to HMX-1 through 2023. HMX-1 expects Initial Operational Capability in early 2021, and the 21 new VH-92As will ultimately retire the historic VH-3Ds and VH-60Ns. Donald Trump first toured the new Presidential helicopter in June, 2019, when a VH-92A test aircraft practiced landings on the White House South Lawn.

On July 4, a White Top VH-92 led two Green Top MV-22s in an HMX-1 formation over the nation's capital.



A VH-92 Engineering and Manufacturing Development aircraft practiced landings on the White House South Lawn. (U.S. Dept. of Defense)

Corrections:

To correct the April 2019 Archives newsletter, the pioneering flights from San Francisco to Honolulu by the Sikorsky S-42 were route survey flights without passengers. In addition, the photo on page 2 captioned S-38A actually shows an S-38B.

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The Official White House 2019 Christmas ornament honors Dwight D. Eisenhower, the first president to fly in a helicopter while in office. It can be purchased (\$22.95) through the web at <https://shop.whitehousehistory.org/>

Prepared by Frank Colucci and John Bulakowski with graphic art and layout by Jodi Buckley.

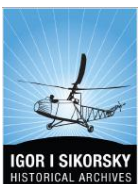


“America must carry the torch of free life with all the immense value which this involves for individuals and nations, and even for the whole world.”

Excerpt from Igor Sikorsky letter to Capt. E. Rickenbacker, December 21, 1945

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