Sikorsky UH-60 Black Hawk Utility Helicopter



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| **DESCRIPTION:** The US Army announced the Utility Tactical Transport Aircraft System (UTTAS) competition in 1972. The purpose of this effort was to develop a replacement for the UH-1 series of utility helicopters. Both Boeing Vertol and Sikorsky submitted designs, but the Sikorsky YUH-60 was eventually selected over Boeing's YUH-61. As a result of Army specifications, the Black Hawk can be quickly broken down for transport aboard large cargo aircraft such as one aboard a [C-130](http://www.aerospaceweb.org/aircraft/transport-m/c130/), two on a [C-141](http://www.aerospaceweb.org/aircraft/transport-m/c141/), and up to six on a [C-5](http://www.aerospaceweb.org/aircraft/transport-m/c5/). The UH-60 is also designed with extensive combat survivability features, including armor protection for the pilots, rotor blades able to survive 23-mm cannon fire, and bullet-proof fuel tanks. Although original requirements called for the design to carry 11 armed troops, the Black Hawk so exceeded expectations that up to 20 troops or 8,000 lb. (3,630 kg) external loads can be carried. Though the Army hoped to acquire over 2,260 of the machines, only 1,400 were eventually built for that service. However, the US Air Force has also procured the HH-60G and MH-60G combat search-and-rescue/special operations models while the US Navy has developed the [SH-60B](http://www.aerospaceweb.org/aircraft/helicopter-m/sh60/) anti-submarine variant. The US Coast Guard and a variety of foreign nations have also purchased members of the H-60 family. *Data below for UH-60A**Last modified 29 November 2005*  |
| **HISTORY:**  |
| **First Flight**  | (YUH-60A) 17 October 1974(UH-60A) October 1978(YSH-60B) 12 December 1979(SH-60B) 11 February 1983(YEH-60C) 24 September 1981(YUH-60L) 22 March 1988(UH-60M) 17 September 2003  |
| **Service Entry**  | (UH-60A) June 1979(SH-60B) 1984(UH-60L) 7 November 1989  |
| **CREW:**  | 2 pilots and 2 crew  |
| **PASSENGERS:**  | (typical) 11 to 14 armed troops(maximum) up to 20 armed troops  |
| **ESTIMATED COST:**  | unknown  |
| **AIRFOIL SECTIONS:**  |  |
| **Rotor Blade Root**  | [SC1095R8](http://www.uiuc.edu/ph/www/m-selig/ads/afplots/sc1095r8.gif)  |
| **Rotor Blade Tip**  | [SC1095](http://www.uiuc.edu/ph/www/m-selig/ads/afplots/sc1095.gif)  |
| **DIMENSIONS:**  |
| **Length**  | 64.83 ft (19.76 m) with rotors turning41.33 ft (12.60 m) folded  |
| **Rotor Diameter**  | 53.67 ft (16.36 m)  |
| **Height**  | 12.33 ft (3.76 m) to top of main rotor 16.83 ft (5.13 m) to top of tail rotor  |
| **Rotor Disk Area**  | 2,262.04 ft2 (210.14 m2)  |
| **WEIGHTS:**  |
| **Empty**  | 10,625 lb. (4,820 kg)  |
| **Normal Takeoff**  | 16,260 lb. (7,375 kg)  |
| **Max Takeoff**  | 20,250 lb. (9,185 kg)  |
| **Fuel Capacity**  | *internal:* unknown *external:* unknown  |
| **Max Payload**  | 8,000 lb. (3,630 kg) [external]  |
| **PROPULSION:**  |
| **Powerplant**  | two General Electric T700-700 turboshafts  |
| **Thrust**  | 3,120 shp (2,326 kW)  |
| **PERFORMANCE:**  |
| **Max Level Speed**  | *at altitude :* 165 mph (270 km/h)*at sea level:* 185 mph (295 km/h)  |
| **Maximum Climb Rate**  | 3,000 ft (915 m) / min at sea level  |
| **Service Ceiling**  | 19,000 ft (5,790 m)  |
| **Hover Ceiling**(out of ground effect)  | 10,400 ft (3,170 m)  |
| **Range**  | *typical:* 325 nm (600 km)*ferry:* 1,185 nm (2,200 km)  |
| **Endurance**  | 2 hr. 18 min  |
| **g-Limits**  | unknown  |
| **ARMAMENT:**  |
| **Gun**  | up to two 7.62-mm (0.3-in) M60 machine guns in cabin, two 7.62-mm (0.3-in) miniguns or two GECAL 0.50-in Gatling guns on pintle mount  |
| **Stations**  | (optional) 2 stub wings with 4 hardpoints (External Stores Support System)  |
| **Air-to-Air Missile**  | Stinger AAM  |
| **Air-to-Surface Missile**  | AGM-114 Hellfire, HOT, HOT-2, or TOW anti-tank  |
| **Bomb**  | none  |
| **Other**  | rocket pods, mine dispensers, combined gun-rocket pods, jamming pods, chaff and flare pods  |
| **KNOWN VARIANTS:**  |
| S-70A  | Sikorsky designation for the UH-60A  |
| YUH-60A  | Prototype  |
| UH-60A Black Hawk  | Production assault transport helicopter for the US Army; 985 built  |
| UH-60A Pot Hawk  | Anti-drug surveillance model for the US Customs Service  |
| UH-60A Credible Hawk  | Search-and-rescue model for the US Air Force  |
| GUH-60A  | Ground instructional model not equipped for flight  |
| JUH-60A  | Test aircraft  |
| YEH-60A  | Prototype electronic countermeasures model for the US Army  |
| EH-60A  | Initial designation for the ECM version  |
| HH-60A  | Prototype of the US Air Force HH-60D; 1 built  |
| MH-60A Velcro Hawk  | Original US Army special operations model used until the dedicated MH-60L and MH-60K variants entered service  |
| VH-60A  | Initial designation for the US Marine Corps VIP aircraft; 9 built  |
| UH-60B  | Improved Black Hawk model with new engines and an upgraded cockpit, not built but many features were incorporated into the UH-60L  |
| YEH-60B  | Modified UH-60A airframe for use as a target-acquisition platform, not built in favor of J-STARS  |
| [SH-60B](http://www.aerospaceweb.org/aircraft/helicopter-m/sh60/)  | US Navy anti-submarine warfare (ASW) and anti-ship surveillance and targeting (ASST) model  |
| EH-60C  | Re-designation for the electronic countermeasures model originally known as the EH-60A, equipped with radar jammers and operated by the US Army; 66 built  |
| HH-60D Night Hawk  | Combat search-and-rescue model for the US Air Force, cancelled  |
| CH-60E  | Proposed assault transport helicopter for the US Marine Corps, not built  |
| HH-60E  | Proposed simpler and less expensive version of the HH-60D, not built  |
| HH-60G  | US Air Force model similar to the MH-60G but optimized for search-and-rescue missions at the expense of full special operations equipment  |
| MH-60G Pave Hawk  | US Air Force combat SAR/special operations model with ESSS, in-flight refueling probe, FLIR turrets, and terrain-following radar  |
| HH-60J Jayhawk  | US Coast Guard search-and-rescue model  |
| UH-60J  | Japanese utility helicopter similar to the UH-60L but optimized for SAR, many license-built in Japan  |
| MH-60K  | US Army special operations model similar to the MH-60G but better equipped; 50 to be built  |
| AH-60L  | Assault gunship for the US Army  |
| MH-60L  | UH-60L airframes temporarily modified for special operations duties to replace the MH-60A  |
| UH-60L  | Improved UH-60A with more powerful engines and a 25% increase in weight; 190 to be built  |
| UH-60M  | Remanufactured UH-60A airframes modified with a new General Electric T700-701D engine, wide chord rotor blades, and new stabilator design  |
| VH-60N Presidential Hawk  | US Marine Corps VIP model equipped with extensive avionics and communications equipment  |
| UH-60P  | UH-60L model for South Korea; 100 to be built  |
| UH-60Q Dustoff Hawk  | Dedicated medical evacuation model based on the UH-60L  |
| S-70A-1 Desert Hawk  | UH-60 model for Saudi Arabia  |
| S-70A-L1  | Medevac model for Saudi Arabia  |
| S-70A-9  | UH-60 model for Australia, many license built; 77 built  |
| S-70C  | Black Hawk model for Taiwan and Brunei  |
| WS-70  | UH-60 model license built by Westland in United Kingdom  |
| **KNOWN COMBAT RECORD:**  | Grenada - Operation Urgent Fury (US Army, 1983)Panama - Operation Just Cause (US Army, 1989)Iraq - Operation Desert Storm (US Army, 1991)Somalia - Operation Continue Hope (US Army, 1993)Afghanistan - Operation Enduring Freedom (US Army, 2001-present)Iraq - Operation Iraqi Freedom (US Army, 2003-present)  |
| **KNOWN OPERATORS:**  | Argentina, Fuerza Aérea Argentina (Argentine Air Force)Argentina, Comando de Aviación del Ejército Argentina (Argentine Army Air Arm)Australia (Royal Australian Army Aviation)Bahrain, Bahrain Amiri (Royal Bahraini Air Force)Brunei, Angkatan Tentara Udara Diraja Brunei (Royal Brunei Air Force)Chile, Fuerza Aérea de Chile (Chilean Air Force)China (People's Liberation Army Aviation Corps)Colombia, Fuerza Aérea Colombiana (Columbian Air Force)Egypt, Al Quwwat al Jawwiya il Misriya (Egyptian Air Force)Greece, Elliniki Aerosporia Stratou (Hellenic Army Air Arm)Hong KongIsrael, Tsvah Haganah le Israel - Heyl Ha'Avir (Israeli Defence Force - Air Force)Japan, Nihon Koku-Jieitai (Japan Air Self Defence Force)Japan, Kaijo Jieitai (Japan Maritime Self Defence Force)Jordan, Al Quwwat al-Jawwiya al-Malakiya al-Urduniya (Royal Jordanian Air Force)Mexico, Fuerza Aérea Mexicana (Mexican Air Force)Morocco, Escadron Aerien Gendarmerie Royale (Royal Police Air Squadron)Philippines, Hukbong Himpapawid ng Pilipinas (Philippine Air Force)Saudi Arabia (Royal Saudi Army Air Arm)South Korea (Republic of Korea Army)Taiwan, Chung-Kuo Kung Chuan (Republic of China Air Force)Turkey, Türk Kara Kuvvetleri (Turkish Army Air Arm)United States (US Air Force)United States (US Air National Guard)United States (US Army)United States (US Customs Service)United States (US Marine Corps)  |
| **3-VIEW SCHEMATIC:**  |
| **SOURCES:** * Bishop, Chris, ed. The Encyclopedia of Modern Military Weapons: The Comprehensive Guide to Over 1,000 Weapon Systems from 1945 to the Present Day. NY: Barnes & Noble, 1999, p. 327, Sikorsky UH-60 Black Hawk.
* Bonds, Ray, ed. [The Modern US War Machine: An Encyclopedia of American Military Equipment and Strategy](http://www.amazon.com/exec/obidos/ASIN/0517560976/aerospacewebo-20). NY: Military Press, 1987, p. 212, Sikorsky S-70.
* Donald, David, ed. [The Complete Encyclopedia of World Aircraft](http://www.amazon.com/exec/obidos/ASIN/0760705925/aerospacewebo-20). NY: Barnes & Noble, 1997, p. 845-846, Sikorsky S-70.
* Donald, David and Lake, Jon, ed. [The Encyclopedia of World Military Aircraft](http://www.amazon.com/exec/obidos/ASIN/0760722080/aerospacewebo-20). NY: Barnes & Noble, 2000, p. 390-391, Sikorsky S-70A/UH-60 Black Hawk, Sikorsky S-70A/EH-60, Sikorsky S-70A/HH-60G and MH-60G Pave Hawk, Sikorsky S-70A/MH-60K.
* [FAS UH-60 site](http://www.fas.org/man/dod-101/sys/ac/uh-60.htm)
* Frase, Tuesday and Spohrer, Jennifer. Jane's Combat Simulations: Longbow Gold User’s Manual. Austin: Origin Systems, 1997, p. 8.4-8.5, UH-60 Black Hawk.
* [Global Security H-60 site](http://www.globalsecurity.org/military/systems/aircraft/h-60.htm)
* Gunston, Bill, ed. [The Encyclopedia of Modern Warplanes](http://www.amazon.com/exec/obidos/ASIN/1586632078/aerospacewebo-20). NY: Barnes & Noble, 1995, p. 254, Sikorsky S-70 (EH-60, HH-60, and UH-60 Black Hawk).
* Gunston, Bill and Spick, Mike. [Modern Fighting Helicopters](http://www.amazon.com/exec/obidos/ASIN/0861019458/aerospacewebo-20). London: Salamander Books, 1998, p. 154-155, Sikorsky S-70 (UH/EH-60A Black Hawk and HH-60A Night Hawk).
* Laur, Timothy M. and Llanso, Steven L. [Encyclopedia of Modern U.S. Military Weapons](http://www.amazon.com/exec/obidos/ASIN/0425164373/aerospacewebo-20). NY: Berkley Books, 1995, p. 125-127, 145-148, Blackhawk SOF (MH-60), Blackhawk (UH-60).
* Miller, David, ed. [The Illustrated Directory of Modern American Weapons](http://www.amazon.com/exec/obidos/ASIN/0760313466/aerospacewebo-20). London: Salamander Books, 2002, p. 120-123, 156-157, Sikorsky S-70 family/SH-60B Seahawk/SH-60F Ocean Hawk, Sikorsky MH-60G/HH-60G Pave Hawk/MH-60K.
* Munro, Bob and Chant, Christopher. [Jane's Combat Aircraft](http://www.amazon.com/exec/obidos/ASIN/0004708466/aerospacewebo-20). Glasgow: Harper Collins Publishers, 1995, p. 212-213, UH-60/SH-60.
* Rendall, David. [Jane's Aircraft Recognition Guide](http://www.amazon.com/exec/obidos/ASIN/0007137214/aerospacewebo-20), 2nd ed. London: Harper Collins Publishers, 1999, p. 479-480, Sikorsky S-70 UH-60 Black Hawk, Sikorsky MH-60 Pave Hawk.
* [Sikorsky UH-60 site](http://www.sikorsky.com/details/0%2C3036%2CCLI1_DIV69_ETI254%2C00.html)
* Taylor, Michael. [Brassey's World Aircraft & Systems Directory 1996/1997](http://www.amazon.com/exec/obidos/ASIN/1574880632/aerospacewebo-20). London: Brassey's, 1996, p. 359-361, Sikorsky S-70A/C, H-60 Black Hawk series and derivatives.
* Taylor, Michael J. H. [Brassey's World Aircraft & Systems Directory 1999/2000](http://www.amazon.com/exec/obidos/ASIN/1857532457/aerospacewebo-20). London: Brassey's, 1999, p. 367-369, Sikorsky S-70A/C, H-60 Black Hawk series and derivatives.
* Wilson, Jim. [Combat: The Great American Warplane](http://www.amazon.com/exec/obidos/ASIN/1588160645/aerospacewebo-20). NY: Hearst Books, 2001, p. 146-147, UH-60 Black Hawk.
* [US Air Force HH-60G Fact Sheet](http://www.af.mil/library/factsheets/)
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