

Lockheed C-130 Hercules



A U.S. Air Force C-130 E Hercules from the 43rd Airlift Wing, Pope Air Force Base, North Carolina, flies over the Atlantic Ocean.

Role:	Tactical Airlifter
Manufacturer:	Lockheed Corporation Lockheed Martin
First Flight:	23 August 1954
Introduction:	December 1956
Status:	In Service
Produced:	1954 –Present
Number built:	Over 2,500 as of 2015
Variants:	Lockheed AC-130 Lockheed DC-130 Lockheed EC-130 Lockheed EC-130H Compass Call Lockheed HC-130 Lockheed Martin KC-130 Lockheed LC-130 Lockheed MC-130

Lockheed RC-130
Lockheed WC-130
Lockheed L-100 Hercules
Lockheed Martin C-130J Super Hercules

The Lockheed C-130 Hercules is an American four-engine turboprop military transport aircraft designed and built by Lockheed (now Lockheed Martin). Capable of using unprepared runways for takeoffs and landings, the C-130 was originally designed as a troop, medevac, and cargo transport aircraft. The versatile airframe has found uses in other roles, including as a gunship (AC-130), for airborne assault, search and rescue, scientific research support, weather reconnaissance, aerial refueling, maritime patrol, and aerial firefighting. It is now the main tactical airlifter for many military forces worldwide. More than 40 variants of the Hercules, including civilian versions marketed as the Lockheed L-100, operate in more than 60 nations.

The C-130 entered service with the U.S. in 1956, followed by Australia and many other nations. During its years of service, the Hercules has participated in numerous military, civilian and humanitarian aid operations. In 2007, the transport became the fifth aircraft to mark 50 years of continuous service with its original primary customer, which for the C-130 is the United States Air Force (USAF). The C-130 is the longest continuously produced military aircraft at more than 60 years, with the updated Lockheed Martin C-130J Super Hercules being produced as of 2023.

Design and Development

Background and requirements

The Korean War showed that World War II-era piston-engine transports—Fairchild C-119 Flying Boxcars, Douglas C-47 Skytrains and Curtiss C-46 Commandos—were no longer adequate. On 2 February 1951, the United States Air Force issued a General Operating Requirement (GOR) for a new transport to Boeing, Douglas, Fairchild, Lockheed, Martin, Chase Aircraft, North American, Northrop, and Airlifts Inc.

The new transport would have a capacity of 92 passengers, 72 combat troops or 64 paratroopers in a cargo compartment that was approximately 41 ft (12 m) long, 9 ft (2.7 m) high, and 10 ft (3.0 m) wide. Unlike transports derived from passenger airliners, it was to be designed specifically as a combat transport with loading from a hinged loading ramp at the rear of the fuselage. A notable advance for large aircraft was the introduction of a turboprop powerplant, the Allison T56 which was developed for the C-130. It gave the aircraft greater range than a turbojet engine as it used less fuel. Turboprop engines also produced much more power for their weight than piston engines. However, the turboprop configuration chosen for the T56, with the propeller connected to the compressor, had the potential to cause structural failure of the aircraft if an engine failed. Safety devices had to be incorporated to reduce the excessive drag from a windmilling propeller.

Design phase

The Hercules resembles a larger, four-engine version of the Fairchild C-123 Provider with a similar wing and cargo ramp layout. The C-123 had evolved from the Chase XCG-20 Avitric first flown in 1950. The Boeing C-97 Stratofreighter had rear ramps, which made it possible to drive vehicles onto the airplane (also possible with the

forward ramp on a C-124). The ramp on the Hercules was also used to airdrop cargo, which included a Low-altitude parachute-extraction system for Sheridan tanks and even dropping large improvised "daisy cutter" bombs. The new Lockheed cargo plane had a range of 1,100 nmi (1,270 mi; 2,040 km) and it could operate from short and unprepared strips.

Fairchild, North American, Martin, and Northrop declined to participate. The remaining five companies tendered a total of ten designs: Lockheed two, Boeing one, Chase three, Douglas three, and Airlifts Inc. one. The contest was a close affair between the lighter of the two Lockheed (preliminary project designation L-206) proposals and a four-turboprop Douglas design.

The Lockheed design team was led by Willis Hawkins, starting with a 130-page proposal for the *Lockheed L-206*. Hall Hibbard, Lockheed vice president and chief engineer, saw the proposal and directed it to Kelly Johnson, who did not care for the low-speed, unarmed aircraft, and remarked, "If you sign that letter, you will destroy the Lockheed Company." Both Hibbard and Johnson signed the proposal and the company won the contract for the now-designated Model 82 on 2 July 1951.



A C-130 Hercules flight deck. Aircraft displayed at the Norwegian Armed Forces Aircraft Collection.

The first flight of the *YC-130* prototype was made on 23 August 1954 from the Lockheed plant in Burbank, California. The aircraft, serial number 53-3397, was the second prototype, but the first of the two to fly. The *YC-130* was piloted by Stanley Beltz and Roy Wimmer on its 61-minute flight to Edwards Air Force Base; Jack Real and Dick Stanton served as flight engineers. Kelly Johnson flew chase in a Lockheed P2V Neptune.

After the two prototypes were completed, production began in [Marietta, Georgia](#), where over 2,300 *C-130s* have been built through 2009.

The initial production model, the *C-130A*, was powered by Allison T56-A-9 turboprops with three-blade propellers and originally equipped with the blunt nose of the prototypes. Deliveries began in December 1956, continuing until the introduction of the *C-130B* model in 1959. Some A-models were equipped with skis and re-designated *C-130D*. As the *C-130A* became operational with Tactical Air Command (TAC), the *C-130's* lack of range became apparent and additional fuel capacity was added with wing pylon-mounted tanks outboard of the engines; this added 6,000 pounds (2,700 kg) of fuel capacity for a total capacity of 40,000 pounds (18,000 kg).

Improved versions



A Michigan Air National Guard *C-130E* dispatches its flares during a low-level training mission.



Two C-130 Hercules in South Korea, 1984A C-130 conducts a night flight mission over [Yokota Air Base](#)

The C-130B model was developed to complement the A-models that had previously been delivered, and incorporated new features, particularly increased fuel capacity in the form of auxiliary tanks built into the center wing section and an AC electrical system. Four-bladed Hamilton Standard propellers replaced the Aero Products' three-blade propellers that distinguished the earlier A-models. The C-130B had ailerons operated by hydraulic pressure that was increased from 2,050 to 3,000 psi (14.1 to 20.7 MPa), as well as updated engines and four-blade propellers that were standard until the J-model.

The B model was originally intended to have "blown controls", a system that blows high-pressure air over the control surfaces to improve their effectiveness during slow flight. It was tested on an NC-130B prototype aircraft with a pair of T-56 turbines providing high-pressure air through a duct system to the control surfaces and flaps during landing. This greatly reduced landing speed to just 63 knots and cut landing distance in half. The system never entered service because it did not improve takeoff performance by the same margin, making the landing performance pointless if the aircraft could not also take off from where it had landed.

An electronic reconnaissance variant of the C-130B was designated C-130B-II. A total of 13 aircraft were converted. The C-130B-II was distinguished by its false external wing fuel tanks, which were disguised signals intelligence (SIGINT) receiver antennas. These pods were slightly larger than the standard wing tanks found on other C-130Bs. Most aircraft featured a swept blade antenna on the upper fuselage, as well as extra wire antennas between the vertical fin and upper fuselage not found on other C-130s. Radio call numbers on the tail of these aircraft were regularly changed to confuse observers and disguise their true mission.

The extended-range *C-130E* model entered service in 1962 after it was developed as an interim long-range transport for the Military Air Transport Service. Essentially a B-model, the new designation was the result of the installation of 1,360 US gallons (5,100 liter) *Sargent Fletcher* external fuel tanks under each wing's midsection and more powerful Allison T56-A-7A turboprops. The hydraulic boost pressure to the ailerons was reduced back to 2,050 psi (14.1 MPa) as a consequence of the external tanks' weight in the middle of the wingspan. The E model also featured structural improvements, avionics upgrades, and a higher gross weight. Australia took delivery of 12 C130E Hercules during 1966–67 to supplement the 12 C-130A models already in service with the RAAF. Sweden and Spain fly the TP-84T version of the C-130E fitted for aerial refueling capability.

The *KC-130* tankers, originally *C-130F* procured for the US Marine Corps (USMC) in 1958 (under the designation *GV-1*) are equipped with a removable 3,600 US gallons (14,000 L) stainless steel fuel tank carried inside the cargo compartment. The two wing-mounted

hose and drogue aerial refueling pods each transfer up to 300 US gallons per minute (1,100 L/min) to two aircraft simultaneously, allowing for rapid cycle times of multiple-receiver aircraft formations, (a typical tanker formation of four aircraft in less than 30 minutes). The US Navy's *C-130G* has increased structural strength allowing higher gross weight operation.

Further developments



A Cameroon Air Force C-130H, 1989

The *C-130H* model has updated Allison T56-A-15 turboprops, a redesigned outer wing, updated avionics, and other minor improvements. Later *H* models had a new, fatigue-life-improved, center wing that was retrofitted to many earlier H-models. For structural reasons, some models are required to land with reduced amounts of fuel when carrying heavy cargo, reducing usable range.

The H model remains in widespread use with the United States Air Force (USAF) and many foreign air forces. Initial deliveries began in 1964 (to the RNZAF), remaining in production until 1996. An improved C-130H was introduced in 1974, with Australia purchasing 12 of the type in 1978 to replace the original 12 C-130A models, which had first entered Royal Australian Air

Force (RAAF) service in 1958. The U.S. Coast Guard employs the HC-130H for long-range search and rescue, drug interdiction, illegal migrant patrols, homeland security, and logistics.

C-130H models produced from 1992 to 1996 were designated as C-130H3 by the USAF, with the "3" denoting the third variation in design for the H series. Improvements included ring laser gyros for the INUs, GPS receivers, a partial glass cockpit (ADI and HSI instruments), a more capable APN-241 color radar, night vision device compatible instrument lighting, and an integrated radar and missile warning system. The electrical system upgrade included Generator Control Units (GCU) and Bus Switching units (BSU) to provide stable power to the more sensitive upgraded components.



A Royal Air Force C-130K (C.3)

The equivalent model for export to the UK is the *C-130K*, known by the Royal Air Force (RAF) as the *Hercules C.1*. The *C-130H-30* (*Hercules C.3* in RAF service) is a stretched version of the original Hercules, achieved by inserting a 100 in (2.5 m) plug aft of the cockpit and an 80 in (2.0 m) plug at the rear of the fuselage. A single C-130K was purchased by the Met Office for use by its Meteorological Research Flight, where it was classified as

the *Hercules W.2*. This aircraft was heavily modified, with its most prominent feature being the long red and white striped atmospheric probe on the nose and the move of the weather radar into a pod above the forward fuselage. This aircraft, named *Snoopy*, was withdrawn in 2001 and was then modified by Marshall of Cambridge Aerospace as a flight testbed for the A400M turbine engine, the TP400. The C-130K is used by the RAF Falcons for parachute drops. Three C-130Ks (Hercules C Mk.1P) were upgraded and sold to the Austrian Air Force in 2002.

Enhanced models



A USAF HC-130P refuels a [HH-60G Pavehawk](#) helicopter

The *MC-130E Combat Talon* was developed for the USAF during the Vietnam War to support special operations missions in Southeast Asia, and led to both the *MC-130H Combat Talon II* as well as a family of other special missions aircraft. 37 of the earliest models currently operating with the Air Force Special Operations Command (AFSOC) are scheduled to be replaced by new-production MC-130J versions. The EC-130 Commando Solo is another special missions variant within AFSOC, albeit operated solely by an AFSOC-gained wing in the Pennsylvania Air National Guard, and is a

psychological operations/information operations (PSYOP/IO) platform equipped as an aerial radio station and television stations able to transmit messaging over commercial frequencies. Other versions of the EC-130, most notably the EC-130H Compass Call, are also special variants, but are assigned to the Air Combat Command (ACC). The AC-130 gunship was first developed during the Vietnam War to provide close air support and other ground-attack duties.

The *HC-130* is a family of long-range search and rescue variants used by the USAF and the U.S. Coast Guard. Equipped for the deep deployment of Pararescue men (PJs), survival equipment, and (in the case of USAF versions) aerial refueling of combat rescue helicopters, HC-130s are usually the on-scene command aircraft for combat SAR missions (USAF only) and non-combat SAR (USAF and USCG). Early USAF versions were also equipped with the Fulton surface-to-air recovery system, designed to pull a person off the ground using a wire strung from a helium balloon. The John Wayne movie, *The Green Berets* featured its use. The Fulton system was later removed when aerial refueling of helicopters proved safer and more versatile. The movie *The Perfect Storm* depicts a real-life SAR mission involving aerial refueling of a New York Air National Guard HH-60G by a New York Air National Guard HC-130P.

The *C-130R* and *C-130T* are U.S. Navy and USMC models, both equipped with underwing external fuel tanks. The USN C-130T is similar but has additional avionics improvements. In both models, aircraft are equipped with Allison T56-A-16 engines. The USMC versions are designated *KC-130R* or *KC-130T* when equipped with underwing refueling pods and pylons and are fully night vision system compatible.

The RC-130 is a reconnaissance version. A single example is used by the Islamic Republic of Iran Air Force, the aircraft having originally been sold to the former Imperial Iranian Air Force.

The *Lockheed L-100 (L-382)* is a civilian variant, equivalent to a C-130E model without military equipment. The L-100 also has two stretched versions.

Next generation

In the 1970s, Lockheed proposed a C-130 variant with turbofan engines rather than turboprops, but the U.S. Air Force preferred the takeoff performance of the existing aircraft. In the 1980s, the C-130 was intended to be replaced by the Advanced Medium STOL Transport project. The project was canceled and the C-130 has remained in production.

Building on lessons learned, Lockheed Martin modified a commercial variant of the C-130 into a High Technology Test Bed (HTTB). This test aircraft set numerous short takeoff and landing performance records and significantly expanded the database for future derivatives of the C-130. Modifications made to the HTTB included extended chord ailerons, a long chord rudder, fast-acting double-slotted trailing edge flaps, a high-camber wing leading edge extension, a larger dorsal fin and dorsal fins, the addition of three spoiler panels to each wing upper surface, a long-stroke main and nose landing gear system, and changes to the flight controls and a change from direct mechanical linkages assisted by hydraulic boost, to fully powered controls, in which the mechanical linkages from the flight station controls operated only the hydraulic control valves of the appropriate boost unit.

The HTTB first flew on 19 June 1984, with civil registration of N130X. After demonstrating many new technologies, some of which were applied to the C-130J, the HTTB was lost in a fatal accident on 3 February 1993, at Dobbins Air Reserve Base, in Marietta, Georgia. The crash was attributed to disengagement of the rudder fly-by-wire flight control system, resulting in a total loss of rudder control capability while conducting ground minimum control speed tests (V_{mcg}). The disengagement was a result of the inadequate design of the rudder's integrated actuator package by its manufacturer; the operator's insufficient system safety review failed to consider the consequences of the inadequate design to all operating regimes. A factor that contributed to the accident was the flight crew's lack of engineering flight test training.

In the 1990s, the improved C-130J Super Hercules was developed by Lockheed (later Lockheed Martin). This model is the newest version and the only model in production. Externally similar to the classic Hercules in general appearance, the J model has new turboprop engines, six-bladed propellers, digital avionics, and other new systems.

Upgrades and changes



C-130H with eight-bladed NP2000 propellers

In 2000, Boeing was awarded a US\$1.4 billion contract to develop an Avionics Modernization Program kit for the C-130. The program was beset with delays and cost overruns until project restructuring in 2007. In September 2009, it was reported that the planned Avionics Modernization Program (AMP) upgrade to the older C-130s would be dropped to provide more funds for the F-35, CV-22 and airborne tanker replacement programs. However, in June 2010, Department of Defense approved funding for the initial production of the AMP upgrade kits. Under the terms of this agreement, the USAF has cleared Boeing to begin low-rate initial production (LRIP) for the C-130 AMP. A total of 198 aircraft are expected to feature the AMP upgrade. The current cost per aircraft is US\$14 million, although Boeing expects that this price will drop to US\$7 million for the 69th aircraft.

In the 2000s, Lockheed Martin and the U.S. Air Force began outfitting and retrofitting C-130s with the eight-blade UTC Aerospace Systems NP2000 propellers. An engine enhancement program saving fuel and providing lower temperatures in the T56 engine has been approved, and the US Air Force expects to save \$2 billion (~\$2.49 billion in 2022) and extend the fleet life.

In 2021, the Air Force Research Laboratory demonstrated the Rapid Dragon system which transforms the C-130 into a lethal strike platform capable of launching 12 JASSM-ER with 500 kg warheads from a standoff distance of 925 km (575 mi). Future anticipated improvements support includes support for JDAM-ER, mine laying, drone dispersal as well as improved standoff range when 1,900 km (1,200 mi) JASSM-XR become available in 2024.

Replacement

In October 2010, the U.S. Air Force released a capability request for information (CRFI) for the development of a new airlifter to replace the C-130. The new aircraft was to carry a 190% greater payload and assume the mission of mounted vertical maneuver (MVM). The greater payload and mission would enable it to carry medium-weight armored vehicles and unload them at locations without long runways. Various options were under consideration, including new or upgraded fixed-wing designs, rotorcraft, tiltrotors, or even an airship. The C-130 fleet of around 450 planes would be replaced by only 250 aircraft.

The Air Force had attempted to replace the C-130 in the 1970s through the Advanced Medium STOL Transport project, which resulted in the C-17 Globemaster III that instead replaced the C-141 Starlifter.

The Air Force Research Laboratory funded Lockheed Martin and Boeing demonstrators for the *Speed Agile* concept, which had the goal of making a STOL aircraft that could take off and land at speeds as low as 70 kn (130 km/h; 81 mph) on airfields less than 2,000 ft (610 m) long and cruise at Mach 0.8-plus. Boeing's design used upper-surface blowing from embedded engines on the inboard wing and blown flaps for circulation control on the outboard wing. Lockheed's design also used blown flaps outboard, but inboard used patented reversing ejector nozzles.

Boeing's design completed over 2,000 hours of wind tunnel tests in late 2009. It was a 5 percent-scale model of a narrow body design with a 55,000 lb. (25,000 kg) payload. When the AFRL increased the payload requirement to 65,000 lb. (29,000 kg), they tested a 5 percent-scale model of a widebody design with a 303,000 lb. (137,000 kg) take-off gross weight and an

"A400M-size" 158 in (4.0 m) wide cargo box. It would be powered by four IAE V2533 turbofans.

In August 2011, the AFRL released pictures of the Lockheed Speed Agile concept demonstrator. A 23% scale model went through wind tunnel tests to demonstrate its hybrid powered lift, which combined a low drag airframe with simple mechanical assembly to reduce weight and improve aerodynamics. The model had four engines, including two Williams FJ44 turbofans. On 26 March 2013, Boeing was granted a patent for its swept-wing powered lift aircraft.

In January 2014, Air Mobility Command, Air Force Materiel Command and the Air Force Research Lab were in the early stages of defining requirements for the C-X next generation airlifter program to replace both the C-130 and C-17. The aircraft would be produced from the early 2030s to the 2040s.

Operational History



A USMC KC-130F Hercules performing takeoffs and landings aboard the aircraft carrier *Forrestal* in 1963. The aircraft is now displayed at the National Museum of Naval Aviation.

The first production batch of C-130A aircraft were delivered beginning in 1956 to the 463d Troop Carrier Wing at Ardmore AFB, Oklahoma, and the 314th Troop Carrier Wing at Sewart AFB, Tennessee. Six additional squadrons were assigned to the 322d Air Division in Europe and the 315th Air Division in the Far East. Additional aircraft were modified for electronics intelligence work and assigned to Rhein-Main Air Base, Germany while modified RC-130As were assigned to the Military Air Transport Service (MATS) photo-mapping division. The C-130A entered service with the U.S. Air Force in December 1956.

In 1958, a U.S. reconnaissance C-130A-II of the 7406th Support Squadron was shot down over Armenia by four Soviet MiG-17s along the Turkish-Armenian border during a routine mission.

Australia became the first non-American operator of the Hercules with 12 examples being delivered from late 1958. The Royal Canadian Air Force became another early user with the delivery of four B-models (Canadian designation CC-130 Mk I) in October / November 1960.

In 1963, a Hercules achieved and still holds the record for the largest and heaviest aircraft to land on an aircraft carrier.^[38] During October and November that year, a USMC KC-130F (BuNo 149798), loaned to the U.S. Naval Air Test Center, made 29 touch-and-go landings, 21 unarrested full-stop landings and 21 unassisted take-offs on *Forrestal* at a number of different weights. The pilot, Lieutenant (later Rear Admiral) James H. Flatley III, USN, was awarded the Distinguished Flying Cross for his role in this test series. The tests were highly successful, but the aircraft was not deployed this way. Flatley denied that C-130 was tested for carrier onboard delivery (COD)

operations, or for delivering nuclear weapons. He said that the intention was to support the Lockheed U-2, also being tested on carriers. The Hercules used in the test, most recently in service with Marine Aerial Refueler Squadron 352 (VMGR-352) until 2005, is now part of the collection of the National Museum of Naval Aviation at NAS Pensacola, Florida.

In 1964, C-130 crews from the 6315th Operations Group at Naha Air Base, Okinawa commenced forward air control (FAC; "Flare") missions over the Ho Chi Minh Trail in Laos supporting USAF strike aircraft. In April 1965 the mission was expanded to North Vietnam where C-130 crews led formations of Martin B-57 Canberra bombers on night reconnaissance/strike missions against communist supply routes leading to South Vietnam. In early 1966 Project Blind Bat/Lamplighter was established at Ubon Royal Thai Air Force Base, Thailand. After the move to Ubon, the mission became a four-engine FAC mission with the C-130 crew searching for targets and then calling in strike aircraft. Another little-known C-130 mission flown by Naha-based crews was Operation Commando Scarf (or Operation Commando Lava), which involved the delivery of chemicals onto sections of the Ho Chi Minh Trail in Laos that were designed to produce mud and landslides in hopes of making the truck routes impassable.

In November 1964, on the other side of the globe, C-130Es from the 464th Troop Carrier Wing but loaned to 322d Air Division in France, took part in Operation Dragon Rouge, one of the most dramatic missions in history in the former Belgian Congo. After communist Simba rebels took white residents of the city of Stanleyville hostage, the U.S. and Belgium developed a joint rescue mission that used the C-130s to drop, air-land,

and air-lift a force of Belgian paratroopers to rescue the hostages. Two missions were flown, one over Stanleyville and another over Paulis during Thanksgiving week. The headline-making mission resulted in the first award of the prestigious MacKay Trophy to C-130 crews.



C-130 Hercules were used in the [Battle of Kham Duc](#) in 1968, when the [North Vietnamese Army](#) forced U.S.-led forces to abandon the Kham Duc Special Forces Camp.

In October 1968, a C-130Bs from the 463rd Tactical Airlift Wing dropped a pair of M-121 10,000 pounds (4,500 kg) bombs that had been developed for the massive Convair B-36 Peacemaker bomber but had never been used. The U.S. Army and U.S. Air Force resurrected the huge weapons as a means of clearing landing zones for helicopters and in early 1969 the 463rd commenced Commando Vault missions. Although the stated purpose of Commando Vault was to clear LZs, they were also used on enemy base camps and other targets.

During the late 1960s, the U.S. was eager to get information on Chinese nuclear capabilities. After the failure of the Black Cat Squadron to plant operating sensor pods near the Lop Nur Nuclear Weapons Test Base using a U-2, the CIA developed a plan, named *Heavy Tea*, to deploy two battery-powered sensor pallets near the

base. To deploy the pallets, a Black Bat Squadron crew was trained in the U.S. to fly the C-130 Hercules. The crew of 12, led by Col Sun Pei Zhen, took off from Takhli Royal Thai Air Force Base in an unmarked U.S. Air Force C-130E on 17 May 1969. Flying for six and a half hours at low altitude in the dark, they arrived over the target and the sensor pallets were dropped by parachute near Anxi in Gansu province. After another six and a half hours of low-altitude flight, they arrived back at Takhli. The sensors worked and uploaded data to a U.S. intelligence satellite for six months before their batteries failed. The Chinese conducted two nuclear tests, on 22 September 1969 and 29 September 1969, during the operating life of the sensor pallets. Another mission to the area was planned as Operation Golden Whip, but it was called off in 1970. It is most likely that the aircraft used on this mission was either C-130E serial number 64-0506 or 64-0507 (cn 382-3990 and 382-3991). These two aircraft were delivered to Air America in 1964. After being returned to the U.S. Air Force sometime between 1966 and 1970, they were assigned the serial numbers of C-130s that had been destroyed in accidents. 64-0506 is now flying as 62-1843, a C-130E that crashed in Vietnam on 20 December 1965, and 64-0507 is now flying as 63-7785, a C-130E that had crashed in Vietnam on 17 June 1966.

The A-model continued in service through the Vietnam War, where the aircraft assigned to the four squadrons at Naha AB, Okinawa, and one at Tachikawa Air Base, Japan performed yeoman's service, including operating highly classified special operations missions such as the BLIND BAT FAC/Flare mission and Fact Sheet leaflet mission over Laos and North Vietnam. The A-model was also provided to the Republic of Vietnam Air Force as part of the Vietnamization program at the end of the war, and equipped three squadrons based at Tan Son Nhut Air

Base. The last operator in the world is the Honduran Air Force, which is still flying one of five A model Hercules (FAH 558, c/n 3042) as of October 2009. As the Vietnam War wound down, the 463rd Troop Carrier/Tactical Airlift Wing B-models and A-models of the 374th Tactical Airlift Wing were transferred back to the United States where most were assigned to Air Force Reserve and Air National Guard units.



U.S. Marines disembarking from C-130 transports at Da Nang Air Base on 8 March 1965.

Another prominent role for the B model was with the United States Marine Corps, where Hercules initially designated as GV-1s replaced C-119s. After Air Force C-130Ds proved the type's usefulness in Antarctica, the U.S. Navy purchased several B-models equipped with skis that were designated as LC-130s. C-130B-II electronic reconnaissance aircraft were operated under the SUN VALLEY program name primarily from Yokota Air Base, Japan. All reverted to standard C-130B cargo aircraft after their replacement in the reconnaissance role by other aircraft.

During the Gulf War of 1991 (Operation Desert Storm), the C-130 Hercules was used operationally by the U.S. Air Force, U.S. Navy, and U.S. Marine Corps, along with the air forces of Australia, New Zealand, Saudi Arabia, South Korea, and the UK. The MC-130 Combat Talon variant

also made the first attacks using the largest conventional bombs in the world, the BLU-82 "Daisy Cutter" and GBU-43/B "Massive Ordnance Air Blast" (MOAB) bomb. Daisy Cutters were used to primarily clear landing zones and to eliminate mine fields. The weight and size of the weapons make it impossible or impractical to load them on conventional bombers. The GBU-43/B MOAB is a successor to the BLU-82 and can perform the same function, as well as perform strike functions against hardened targets in a low air threat environment.



C-130 Hercules performs a tactical landing on a dirt strip, North Carolina, U.S.



USMC C-130T *Fat Albert* performing a rocket-assisted takeoff (RATO)

Since 1992, two successive C-130 aircraft named *Fat Albert* have served as the support aircraft for the U.S. Navy Blue Angels flight demonstration team. *Fat Albert I* was a TC-130G (151891) a former U.S. Navy TACAMO aircraft serving with Fleet Air Reconnaissance Squadron Three (VQ-3) before being transferred to the

BLUES, while *Fat Albert II* is a C-130T (164763). Although *Fat Albert* supports a Navy squadron, it is operated by the U.S. Marine Corps (USMC) and its crew consists solely of USMC personnel. At some air shows featuring the team, *Fat Albert* takes part, performing flyovers. Until 2009, it also demonstrated its rocket-assisted takeoff (RATO) capabilities; these ended due to dwindling supplies of rockets.

The AC-130 also holds the record for the longest sustained flight by a C-130. From 22 to 24 October 1997, two AC-130U gunships flew 36 hours nonstop from Hurlburt Field, Florida to Daegu International Airport, South Korea, being refueled seven times by KC-135 tanker aircraft. This record flight beat the previous record longest flight by over 10 hours and the two gunships took on 410,000 lb (190,000 kg) of fuel. The gunship has been used in every major U.S. combat operation since Vietnam, except for Operation El Dorado Canyon, the 1986 attack on Libya.

During the invasion of Afghanistan in 2001 and the ongoing support of the International Security Assistance Force (Operation Enduring Freedom), the C-130 Hercules has been used operationally by Australia, Belgium, Canada, Denmark, France, Italy, the Netherlands, New Zealand, Norway, Portugal, Romania, South Korea, Spain, the UK, and the United States.

During the 2003 invasion of Iraq (Operation Iraqi Freedom), the C-130 Hercules was used operationally by Australia, the UK, and the United States. After the initial invasion, C-130 operators as part of the Multinational force in Iraq used their C-130s to support their forces in Iraq.



MAPS C-130 H – Serial Number 88-4401



The airframe at the MAPS Air Museum is a C-130 H version carrying the Serial Number of 88-4401. It was built at the Lockheed Corporation (now Lockheed Martin) facility in Marietta, Georgia with manufacturers serial number 382-5154. It was accepted by the United States Air Force on 1 January 1989 with serial number 88-4401.

The initial assignment for this Hercules was with the 95 Tactical Airlift Squadron (Air Force Reserve), 440th Airlift Wing stationed at General Mitchel International Airport Air Reserve Station, Wisconsin. As the first C-103H assigned, it was dubbed “Spirit of Wisconsin”. The 95 Tactical Airlift Squadron as re-designated the 95th Airlift Squadron on 1 February 1992. On 10 June 2007, the 440th Airlift Wing was relocated to Pope Air Force Base at Fort Bragg (now Fort Liberty), North Carolina.

In December of 2013, 88-4401 was assigned to the Ohio Air National Guard, 164th Airlift Squadron, 179th Airlift Wing at Mansfield Lahm Air National Guard Base in Ohio. Initially christened the “Spirit of Ontario: it was re-christened “Spirit of Mansfield” on 5 July 2014.

On 7 July 2022, 88-4401 departed Mansfield for Akron-Canton Regional Airport for decommissioning and demilitarization prior transfer to museum status. On 7 January 2023, the aircraft was towed to the MAPS Air Museum for static display.

The aircraft is on loan from the National Museum of the United States Air Force Museum at Wright-Patterson Air Force Base, Ohio.

Variants:

Significant military variants of the C-130 include:

C-130A

Initial production model with four Allison T56-A-11/9 turboprop engines. 219 were ordered and deliveries to the USAF began in Dec. 1956.

C-130B

Variant with four Allison T56-A-7 engines. 134 were ordered and entered USAF service in May 1959.

C-130E

Same engines as the Bravo variant but with two 1,290 gal. external fuel tanks, and an increased maximum takeoff weight capability. Introduced in Aug. 1962 with 389 were ordered.

C-130F/G

Variants procured by the U.S. Navy for USMC refueling missions, and other support/transport operations.

C-130H

Identical to the Echo variant but with more powerful Allison T56-A-15 turboprop engines. Introduced in Jun. 1974 with 308 ordered.

C-130T

Improved variants procured by the U.S. Navy for USMC refueling, and other support/transport operations.

C-130A-II Dreamboat

Early version Electronic Intelligence/Signals Intelligence (ELINT/SIGINT) aircraft

C-130J Super Hercules

Tactical airlifter, with new engines, avionics, and updated systems

C-130B BLC

A one-off conversion of C-130B 58-0712, modified with a double Allison YT56 gas generator pod under each outer wing, to provide bleed air for all the control surfaces and flaps.

AC-130A/E/H/J/U/W

Gunship variants

C-130D/D-6

Ski-equipped version for snow and ice operations United States Air Force / Air National Guard

CC-130E/H/J Hercules

Designation for Canadian Armed Forces / Royal Canadian Air Force Hercules aircraft. U.S. Air Force used the CC-130J designation to differentiate the standard C-130J variant from the "stretched" C-130J (company designation C-130J-30). CC-130H(T) is the Canadian tanker variant of the KC-130H.

DC-130A/E/H

USAF and USN Drone control

EC-130E/J Commando Solo

USAF / Air National Guard psychological operations version.

EC-130E Airborne Battlefield Command and Control Center (ABCCC)

USAF procedural air-to-ground attack control, also provided NRT threat updates

EC-130E Rivet Rider

Airborne psychological warfare aircraft

EC-130H Compass Call

Electronic warfare and electronic attack.

EC-130V

Airborne early warning and control (AEW&C) variant used by USCG for counter-narcotics missions.

GC-130

Permanently grounded instructional airframes.

HC-130B/E/H

Early model combat search and rescue

HC-130P/N Combat King

USAF aerial refueling tanker and combat search and rescue

HC-130J Combat King II

Next generation combat search and rescue tanker

HC-130H/J

USCG long-range surveillance and search and rescue, USAFR Aerial Spray & Airlift.

JC-130

Temporary conversion for flight test operations; used to recover drones and spy satellite film capsules.

KC-130F/R/T/J

United States Marine Corps aerial refueling tanker and tactical airlifter.

LC-130F/H/R

USAF/Air National Guard – Ski-equipped version for Arctic and Antarctic support operations; LC-130F and R previously operated by USN.

MC-130E/H Combat Talon I/II

Special operations infiltration/extraction variant

MC-130W Combat Spear/Dragon Spear

Special operations tanker/gunship.

MC-130P Combat Shadow

Special operations tanker – all operational aircraft converted to HC-130P standard

MC-130J Commando II

Special operations tanker Air Force Special Operations Command

YMC-130H

Modified aircraft under Operation Credible Sport for second Iran hostage crisis rescue attempt.

NC-130

Permanent conversion for flight test operations.

PC-130/C-130-MP

Maritime patrol.

RC-130A/S

Surveillance aircraft for reconnaissance.

SC-130J Sea Herc

Proposed maritime patrol version of the C-130J, designed for coastal surveillance and anti-submarine warfare.

TC-130

Aircrew training.

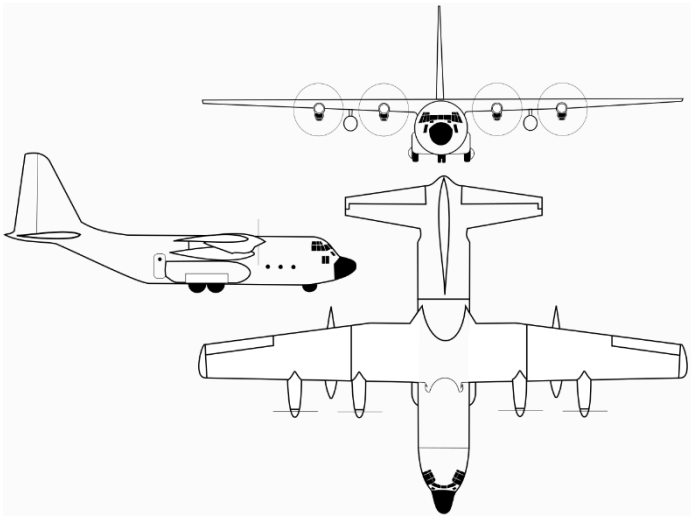
VC-130H

VIP transport

WC-130A/B/E/H/J

Weather reconnaissance ("Hurricane Hunter") version for USAF / Air Force Reserve Command's 53d Weather Reconnaissance Squadron in support of the National Weather Service's National Hurricane Center

Specifications (C-130H Hercules)



- **Crew:** 5 (2 pilots, CSO/navigator, flight engineer and loadmaster)
- **Capacity:** 42,000 lb. (19,000 kg) payload
 - C-130E/H/J cargo hold: length, 40 ft (12.19 m); width, 119 in (3.02 m); height, 9 ft (2.74 m).

- Rear ramp: length, 123 in (3.12 m); width, 119 in (3.02 m)
- C-130J-30 cargo hold: length, 55 ft (16.76 m); width, 119 in (3.02 m); height, 9 ft (2.74 m).
Rear ramp: length, 123 inches (3.12 m); width, 119 in (3.02 m)
- 92 passengers *or*
- 64 airborne troops *or*
- 74 litter patients with 5 medical crew *or*
- 6 pallets *or*
- 2–3 Humvees *or*
- 2 M113 armored personnel carriers
- 1 CAESAR self-propelled howitzer
- **Length:** 97 ft 9 in (29.79 m)
- **Wingspan:** 132 ft 7 in (40.41 m)
- **Height:** 38 ft 3 in (11.66 m)
- **Wing area:** 1,745 sq ft (162.1 m²)
- **Airfoil: root:** NACA 64A318; **tip:** NACA 64A412^l
- **Empty weight:** 75,800 lb. (34,382 kg)
- **Max takeoff weight:** 155,000 lb. (70,307 kg)
- **Powerplant:** 4 × Allison T56-A-15 turboprop engines, 4,590 shp (3,420 kW) each
- **Propellers:** 4-bladed Hamilton Standard 54H60 constant-speed fully feathering reversible propellers, 13 ft 6 in (4.11 m) diameter.

Performance

- **Maximum speed:** 320 kn (370 mph, 590 km/h) at 20,000 ft (6,100 m)
- **Cruise speed:** 292 kn (336 mph, 541 km/h)
- **Range:** 2,050 nmi (2,360 mi, 3,800 km)
- **Ferry range:** 3,995 nmi (4,597 mi, 7,399 km)
- **Service ceiling:** 33,000 ft (10,000 m) empty, 23,000 ft (7,000 m) with 42,000 lb. (19,000 kg) payload
- **Rate of climb:** 1,830 ft/min (9.3 m/s)
- **Takeoff distance:** 3,586 ft (1,093 m) at 155,000 lb. (70,307 kg) max gross weight; 1,400 ft (427 m) at 80,000 lb. (36,287 kg) gross weight.