

Mission

The gigantic C-5 Galaxy, with its tremendous payload capability, provides the Air Mobility Command airlift in support of United States national defense. The C-5 can carry fully equipped combat-ready military units to any point in the world on short notice and then provide field support required to help sustain the fighting force.



Features

The C-5 is one of the largest aircraft in the world and the largest airlifter in the Air Force inventory. The C-5 can carry more than any other airlifter. It has the ability to carry 36 standard pallets and up to 81 troops simultaneously. The Galaxy also carries all of the Army's air-transportable combat equipment, including such bulky items as its 74-ton mobile scissors bridge from the United States to any theater of combat on the globe. It can also carry outside and oversize cargo intercontinental ranges and can take off or land in relatively short distances. Ground crews are able to load and off-load the C-5 simultaneously at the front and rear cargo openings, reducing cargo transfer times. Other features of the C-5 are:

- Able to operate on runways 6,000 feet long (1,829 meters)
- Five landing gear totaling 28 wheels to distribute the weight.
- Nose and aft doors that open the full width and height of the cargo compartment to permit faster and easier loading.
- A "kneeling" landing gear system that permits lowering of the parked aircraft so the cargo floor is at truck-bed height or to facilitate vehicle loading and unloading.
- Full width drive-on ramps at each end for loading double rows of vehicles.
- A system that records and analyzes information and detects malfunctions in more than 800 test points.

The C-5 has the distinctive high T-tail, 25-degree wing sweep, and four TF39 turbofan engines mounted on pylons beneath the wings. These engines are rated at 43,000 pounds of thrust each, and weigh 7,900 pounds (3,555 kilograms) each. They have an air intake diameter of more than 8.5 feet (2.6 meters). Each engine pod is nearly 27 feet long (8.2 meters).

The Galaxy has 12 internal wing tanks with a total capacity of 51,150 gallons (194,370 liters) of fuel -- enough to fill 6 1/2 regular size railroad tank cars. A full fuel load weighs 332,500 pounds (150,820 kilograms). A C-5 with a cargo load of 270,000 pounds (122,472 kilograms) can fly 2,150 nautical miles, offload, and fly to a second base 500 nautical miles away from the original destination -- all without aerial refueling. With aerial refueling, the aircraft's range is limited only by crew endurance.

Background

Lockheed-Georgia Co. delivered the first operational Galaxy to the 437th Airlift Wing, Charleston Air Force Base, S.C., in June 1970. C-5s are operated by active-duty, Reserve, and Air National Guard crews. They are currently stationed at Dover AFB, Del.; Travis AFB, Calif.; Lackland AFB, Texas; Stewart Air National Guard Base, N.Y.; Martinsburg ANGB, W.V.; Memphis ANGB, Tenn.; Wright-Patterson AFB, Ohio and Westover Air Reserve Base, Mass.

In March 1989, the last of 50 C-5B aircraft was added to the 76 C-5As in the Air Force's airlift force structure. The C-5B includes all C-5A improvements as well as more than 100 additional system modifications to improve reliability and maintainability.

Based on a study showing 80 percent of the C-5 airframe service life remaining, AMC began an aggressive program to modernize the C-5. The C-5 Avionics Modernization Program began in 1998 and includes upgrading avionics to communications, navigation, surveillance/air traffic management compliance, improving navigation, communication, and safety equipment, and installing a new autopilot system.

Another part of the modernization plan is a comprehensive Re-engining and Reliability Program. The centerpiece of this program is the General Electric CF6-80C2 commercial engine. This engine delivers a 22 percent increase in thrust to the C-5M, a 30 percent shorter take-off roll, has a 58 percent faster climb rate and will allow significantly more cargo to be carried over longer distances. With its new engine and upgrades, the C-5 becomes the C-5M Super Galaxy.

This modernization program will enhance aircraft reliability and maintainability, maintain structural and system integrity, reduce cost of ownership and increase operational capability well into the 21st century.

General Characteristics

Primary Function: Outsize cargo transport

Prime Contractor: Lockheed-Georgia Co.

Power Plant: Four General Electric TF-39 engines

Thrust: 43,000 pounds, each engine

Wingspan: 222.9 feet (67.89 meters)

Length: 247.1 feet (75.3 meters)

Height: 65.1 feet (19.84 meters)

Cargo Compartment: height, 13.5 feet (4.11 meters); width, 19 feet (5.79 meters);
length, 143 feet, 9 in (43.8 meters)

Pallet Positions: 36

Maximum Cargo: 270,000 pounds (122,472 kilograms)

Maximum Takeoff Weight: 769,000 pounds (348,818 kilograms) (peacetime),
840,000 pounds (381,024 kilograms) (wartime)

Speed: 518 mph (.77 Mach)

Range: 6,320 nautical miles without air refueling; unlimited with in-flight refueling

Crew: 7 (pilot, co-pilot, two flight engineers and three loadmasters)

Unit Cost: **C-5A** - \$152.8 million (fiscal 1998 constant dollars); **C-5B** - \$179 million (fiscal 1998 constant dollars); Modification unit cost, \$90 million (fiscal 2009 constant dollars)

Deployed: **C-5A** - 1969, **C-5B** - 1980, **C-5M** - 2009

Inventory: Total force, 111; **C-5A**, 59, **C-5B**, 47, **C-5C**, 2, **C-5M**, 3