NASAfacts

T-34C Mission Support Aircraft

NASA's Armstrong Flight Research Center at Edwards Air Force Base operates a T-34C training plane for mission support and pilot proficiency.

Mission support aircraft such as the T-34C accompany research flights for photography and video data collection, and also as safety chase. At Armstrong, the T-34C is primarily used for chasing remotely piloted unmanned air vehicles which fly slower than NASA's F-18's mission support aircraft can fly. It is also used for required pilot proficiency flying.

Another example of the T-34C's utility as a support aircraft is its role in validating detect-and-avoid technology in Unmanned Aircraft Systems. In April 2016, NASA Armstrong began flying the T-34C as an "intruder" in the Unmanned Aircraft Systems integration into the National Airspace System's (UAS-NAS) Flight Test Series 4. Equipped with ADS-B and TCAS I, it is one of six aircraft to fly as an intruder in the test. The T-34C's job includes flying within a pre-determined distance to NASA Armstrong's Ikhana, on a specifically charted course, to test detect and avoid systems that were integrated on Ikhana with the purpose of providing the UAS pilot on the ground with situational awareness and alerting of nearby aircraft and provide the UAS pilot with timely information to maintain a safe distance.

In its role as a military trainer, the instructor pilot would ride in the back seat, while the student would be in the front seat. As a NASA mission support chase plane, the back seat would be occupied by a photographer or flight test engineer on research missions.

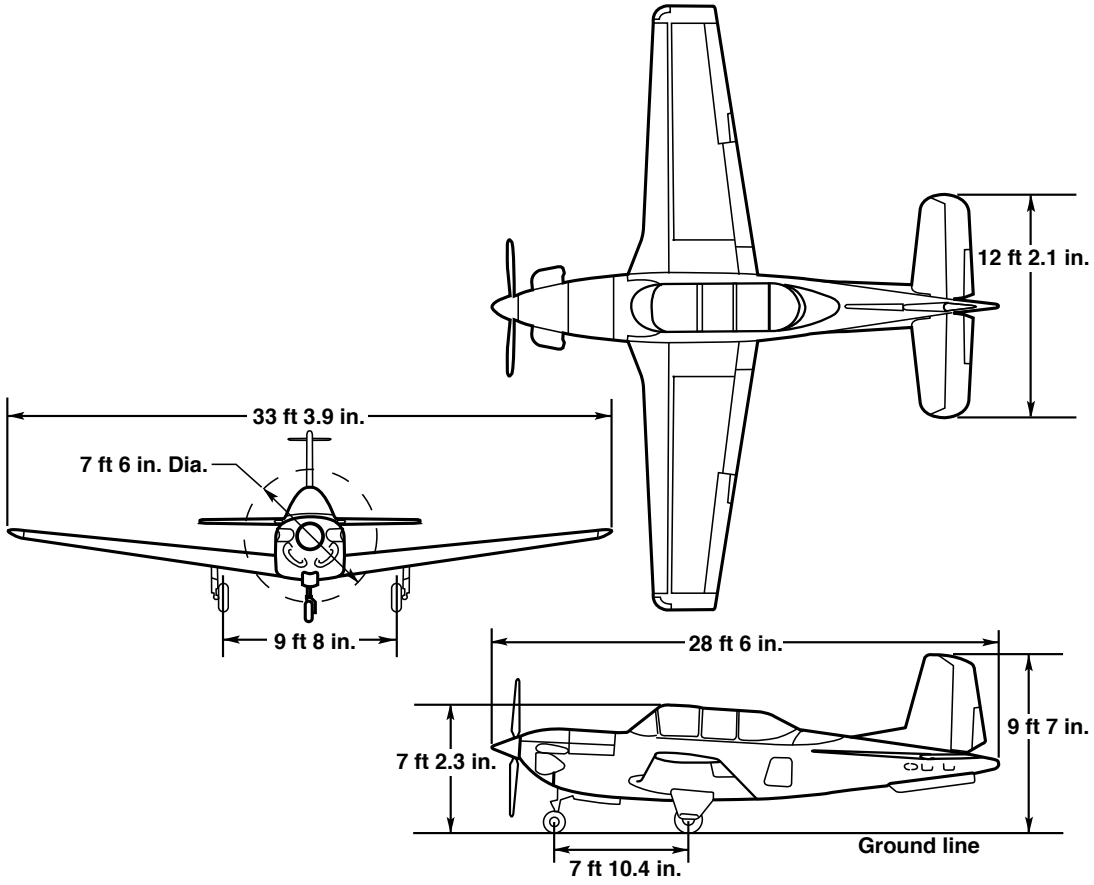
NASA's T-34C flies over Lake Isabella in Southern California. EC05-0133-12

NASA Armstrong has operated two T-34C aircraft. The first was previously flown at the Glenn Research Center in Cleveland, Ohio, for propulsion experiments involving turboprop engines, and then came to Armstrong as a chase aircraft in 1996. That aircraft was returned to the U.S. Navy in 2002. Armstrong obtained its second T-34C in early 2005 from the U.S. Navy's Air Warfare Center Aircraft Division at Naval Air Station Patuxent River, Md., where it was due to be retired.

Nicknamed the TurboMentor, the T-34C is an upgraded, turboprop-powered version of the earlier piston-engined T-34A and T-34B models that served as primary training aircraft for Navy and Marine Corps pilots for more than 40 years. Built by Beech Aircraft Co. (now Raytheon Aircraft), the T-34C shares the same basic wing planform and landing gear as the civilian Beechcraft Bonanza series of general aviation aircraft from which it was derived.

Aircraft Statistics

Primary Function at NASA Armstrong: Mission support, safety chase, pilot proficiency
Contractor: Raytheon Aircraft Company
(Formerly Beech Aircraft)
Propulsion: Model PT6A-25 turbo-prop engine (Pratt & Whitney Aircraft of Canada), rated at 750 shp. driving a three-blade constant-speed propeller.
Wingspan: 33 feet 5 inches (10 meters)
Length: 28 feet 8 inches (9 meters)
Height: 9 feet 11 inches (3 meters)
Weight: 4,425 Lb. gross; approx. 3,000 Lb. empty
Speed: Max: 280 Knots (322 mph); Min: 60 knots (70 mph)
Ceiling: 25,000 Feet
Range: Approximately 600 nautical miles at 200 knots cruising speed
Crew: Two (pilot, flight test engineer or photographer)



National Aeronautics and Space Administration

Armstrong Flight Research Center
P.O. Box 273
Edwards, California 93523

www.nasa.gov