

Beechcraft T-34 Mentor Model Guide

The Beechcraft T-34 Mentor is a two-seat military basic trainer with a Bonanza-style fuselage and a 225-hp Continental O-470-13. The USAF flew it from 1953 to 1961. Buyers should focus on wing spar carry-through fatigue, military-surplus engine parts, and a thorough type checkout.

KEY TAKEAWAYS

- Two-seat trainer with a 225-hp Continental O-470-13. A 1975 owner report gives 145 kt at 65% power, burning 10.5 gph of 80-octane fuel.
- Wing spar carry-through fatigue is the central issue. AD 2004-25-51 applies, and an NTSB report found a wing separation from fatigue cracking.
- Surplus examples are hard to find. A 1975 owner report says prices vary greatly with little link to condition.
- Controls are much more sensitive than a Bonanza's. Get a thorough checkout and expect an unfamiliar military cockpit.

WING SPAR AND AD 2004-25-51

The T-34 Spar Corp ALEC kit (STC SA 10362SC) swaps the lower front spar bolts for Inconel 718 bolts. It adds a pre-tensioned cable giving about 7,500 pounds of compressive preload. Once the required inspections, cold working and parts are done, the AD 2004-25-51 flight restrictions may be removed. Check the logbooks for this work. It adds 3.2 lbs.

INSPECTION INTERVALS TO VERIFY

With ALEC fitted, surface and bolt-hole eddy current inspections are due every 2900 hours of flight time. The lower front spar bolts and nuts must be replaced by 10,000 hours, and this repeats. The carry-through structure also gets a visual check every 100 hours. Confirm the logs show each item. One 2024 spar inspection and propeller overhaul kept a T-34 down for 5 months.

ENGINE, COOLING AND PARTS

The O-470-13 is a military version of the engine, so some parts must come from military surplus. Most other parts are standard Beechcraft. The 1975 report calls the augments tube cooling system the greatest mechanical flaw, because it needs high airspeed on hot days. Check that the nosewheel gear doors are fitted, since removing them hurts climb.

SPECIFICATIONS

Engine Power Hp	225
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PERFORMANCE

Cruise Speed Kts	145
Fuel Burn Gph	10.5
Acrobatic Cruise Fuel Burn Gph	14

WEIGHT & BALANCE

Alec Added Weight Lbs	3.2
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SAFETY NOTES

- On December 7, 2004, an A45 lost its left wing in an upset recovery training flight. The NTSB found widespread fatigue cracking in the carry-through structure.
- The NTSB said some cracks were in hidden areas and could not be found without extensive disassembly. It strongly suspected the same condition in other T-34 airframes.
- Without the nosewheel gear doors, climb on hot days is poor at the airspeeds needed to keep temperatures within limits.