

Beechcraft T-34C Turbo Mentor Model Guide

The Beechcraft T-34C Turbo Mentor is a fully aerobatic, two-seat, low-wing turboprop trainer built from 1977 to 1990 and flown by the U.S. Navy. It uses a Pratt & Whitney PT6A-25 engine. Beech sold 353 to the Navy and, apart from a brief 1987 factory offer, never marketed it to civilians.

KEY TAKEAWAYS

- Two-seat, fully aerobatic, low-wing turboprop trainer with a PT6A-25 engine, flat rated 550 SHP and 425 SHP for normal operation.
- Navy limits: max takeoff and landing weight 4,400 lbs, max aerobatic weight 4,300 lbs, normal fuel flow about 335 lbs/hr.
- Beech does not support civilian-owned Mentors beyond parts common to Bonanzas (AOPA, 1996), and some parts are hard to find.
- About 250 piston Mentors went to private owners. A 1996 article says the Navy was not releasing its turbine T-34Cs to the open market.

ENGINE AND OPERATING LIMITS

Pratt & Whitney PT6A-25, flat rated 550 SHP (1315 torque), 425 SHP normal (1015 torque). ITT: 695°C max continuous, 825°C max acceleration. Prop 2200 RPM ±25 normal. N1 89-93% normal, 101.5% max. Oil 65-85 PSI and 10-99°C normal. An AOPA 1996 article says the engine is derated to 400 shp, so confirm the rating.

WEIGHTS AND DIMENSIONS

Navy limits: ramp 4,425 lbs, takeoff and landing 4,400 lbs, aerobatic 4,300 lbs, zero fuel 3,650 lbs. Approximate basic weight is 2,970 lbs. Wing span 33 ft 5 in, length 28 ft 8 in, height 9 ft 11 in. AOPA gives 4,300 lbs as max gross weight, so check the limit in the aircraft's own manual.

OWNERSHIP AND SUPPORT

Production reached 353, and the first T-34C student training began in January 1978. In 1987 Beech offered individuals a factory-new turbine Mentor for a \$1.3 million flyaway, with no takers. Beech does not support civilian Mentors beyond parts common to Bonanzas. In 1996 Nogle and Black (Illinois) and Parks Industries (Texas) did most civilian work. A restored piston Mentor in good condition brought \$200,000 or more.

SPECIFICATIONS

Engine	Pratt & Whitney PT6A-25
Seats	2
Flat Rated Power Hp	550
Normal Operation Power Hp	425
Max Operating Altitude Ft	25000
Oil System Capacity Gal	4.4

PERFORMANCE

Max Sink Rate Touchdown Fpm	600
Family Max Range Nm	700
Family Max Cruise Speed Kt	246
Family Max Service Ceiling Ft	30000

V-SPEEDS

Best Angle Climb Vx Kts	75
Best Rate Climb Vy Kts	100
Max Gear Extension Kts	150
Max Flap Extension Kts	120
Max Gear Retraction Kts	120
Min Flap Retraction Kts	90
Full Flap Landing Kts	85
No Flap Landing Kts	95

WEIGHT & BALANCE

Max Ramp Weight Lbs	4425
Max Takeoff Landing Weight Lbs	4400
Max Aerobatic Weight Lbs	4300
Max Zero Fuel Weight Lbs	3650
Approximate Basic Weight Lbs	2970

SAFETY NOTES

- Extend gear at or below 150 KIAS and flaps at or below 120 KIAS. Retract gear at or below 120 KIAS. Student pilots have forgotten to raise the gear after takeoff.
- ITT limits: 695°C max continuous, 925°C hot start (2 seconds), 1090°C max during starts. Review engine records for over-temperature events.
- Max sink rate at touchdown is 600 FPM. Max aerobatic weight is 4,300 lbs. G limits are +4.5/-1.0 up to 280 KIAS.