SOCATA TB-20 TRINIDAD Model Guide

The SOCATA TB-20 TRINIDAD is a single-engine piston aircraft with retractable landing gear. This guide uses one flying club's checklist for a 1984 example (N84AV) and a SOCATA component manual for the landing-gear shock absorber. The family registry has no range, cruise or MTOW data, so verify every figure against the POH.

KEY TAKEAWAYS

- Checklist figures for a 1984 example: empty weight 1,961 lbs, useful load 1,125 lbs, max takeoff 3,086 lbs, 86 gallons usable fuel.
- Listed power settings: 75% is 22.9 in MP, 2,400 RPM, 15.9 GPH; 65% is 14 GPH; 55% is 12.3 GPH. Lean-of-peak is not recommended.
- Retractable gear: gear down below 129 kts, landing flaps below 103 kts, trim for 73 kts on short final.
- The oleo-pneumatic gear shock absorbers are a service item: check for fluid leaks and pressure loss.

WEIGHTS, FUEL AND LIMITS

The N84AV checklist lists empty weight 1,961 lbs, useful load 1,125 lbs, max baggage 143 lbs and max takeoff 3,086 lbs. Usable fuel is 86 gallons, oil capacity 12 quarts, and the electrical system is 14 V / 60 amp. Never-exceed speed is 187 kts, and the structural (Vno) limit is 150 kts.

LANDING GEAR SHOCK ABSORBER

The shock absorber is oleo-pneumatic, with 2.75 in of travel, MIL-H-5606G fluid and nitrogen or air. Inflation pressure is 623.7 psi for P/N TB20 41007000 and 004, and 665.7 psi for TB20 41013004. The manual's troubleshooting lists fluid leaks (damaged O-rings) and pressure drop (inflating valve seal or valve mechanism). No cracks are allowed on inspection.

TAKEOFF AND CLIMB HABITS

The checklist gives rotate at 70 kts, then gear up on a positive rate. Vx is 85 kts and Vy is 95-105 kts, with flaps retracted at 300 ft AGL. Climb power is 25 in / 2,500 RPM, en-route Vy is 104 kts, and the fuel pump goes off at 1,000 ft AGL. In a prop overspeed, stay below 2,700 RPM.

SPECIFICATIONS

Empty Weight Lbs	1961
Useful Load Lbs	1125
Max Baggage Lbs	143
Usable Fuel Gal	86
Shock Absorber Travel In	2.75

PERFORMANCE

Fuel Burn 75 Pct Gph	15.9
Fuel Burn 65 Pct Gph	14
Fuel Burn 55 Pct Gph	12.3
Vy Enroute Kts	104

V-SPEEDS

Vne Kts	187
Vno Kts	150
Va Kts	129
Vle Kts	139
Vfe Kts	103
Best Glide Kts	92
Vr Kts	70
Vx Kts	85

WEIGHT & BALANCE

Empty Weight Lbs	1961
Useful Load Lbs	1125
Max Baggage Lbs	143
Max Takeoff Weight Lbs	3086

SAFETY NOTES

- Emergency gear extension: airspeed below 97 kts. If the gear still fails to extend, yaw the airplane abruptly with the rudder and refer to the POH.
- Engine failure: best glide is 92 kts. Check the fuel pump, switch tanks and set mixture rich. If power is not regained, make a power-off landing.
- Shock absorber maintenance: make sure it is deflated (nil pressure) before any work, and again before disassembly.

AI-aggregated guide for the SOCATA TB-20 TRINIDAD · sources: N84AV MTR Checklist (#101871) · COMPONENT MAINTENANCE MANUAL SHOCK ABSORBER (#101189) · generated 2026-10-21 ·
Reference only, not for flight. Check the original documents before relying on this guide.