TURBO BARON

At 40 gph, this piston twin buys peace of mind and King Air speed.

BY MARK M. LACAGNINA

Cockpit small talk inevitably would succumb to the pervading drone of the Pratt & Whitney Wasps. The sound was reassuring, and the young copilot tried not to dwell on what might happen if the engines' duet should become a solo performance. He knew the assurances by airline management that the Boeing 247D's single-engine service ceiling was higher than the highest mountain peak along the route. He also knew this might be perfectly true under standard conditions; but conditions on the route from Cheyenne to Oakland seldom were standard. No one knew what would happen once the aircraft drifted down into the clouds and began to pick up ice. The copilot did not want to be the one to find out.

Although only 31 years old, the copilot, John MacDonald Miller, already was an experienced and seasoned aviator. He had learned to fly when flight instruction was a do-it-yourself affair. His reward for a hard summer's work assisting a barnstormer had been the barnstormer's airplane—a Curtiss JN-4 in atrocious condition. On his third flight, Miller began hopping passengers in the Jenny from a pasture near his home in Poughkeepsie, New York. After high school and a degree in mechanical engineering from Pratt Institute, he worked as a mechanic for a flying circus. He rebuilt a wrecked Standard J-1 and set off on his own to barnstorm the eastern states. In the early 1930s, Miller bought a Pitcairn PCA-2 autogiro and for three years gave aerobatic exhibitions all over the country. He performed loops, rolls on top of the loops and other maneuvers that did not have names. He became the first pilot to make a round-trip, transcontinental flight in a rotary-wing aircraft. When he was not touring the autogiro, Miller managed Poughkeepsie Airport and one of the first aircraft repair shops in the country. During his early career, Miller also joined the Marine Reserve and was trained as a naval aviator.

Wasps were very reliable engines, and Miller never did find out how a Boeing 247D would react to an engine failure over the Rockies. He left United Airlines after two years to test-fly John Kellett's "wingless" autogiros. With Kellett, Miller logged another first—the first scheduled operation of a rotary-wing aircraft. It was a demonstration project for Eastern Airlines. Ten times each day, for a year, Miller flew a six-mile route between the Philadelphia airport and the roof of the city's post office, carrying up to 350 pounds of mail in an autogiro. World War II interrupted the project, and Miller turned to flying the line in Douglas DC-2s and -3s for Eastern and test-flying amphibious naval aircraft for Columbia Aircraft. He went on to fly DC-4s and -7s and Lockheed Constellations and Electras for Eastern. Miller retired as a DC-8 captain in 1965.

Now 78 years old, Miller, AOPA 58843, often still flies over the Rockies, but the trips are much more comfortable than they were in the right seat of a Boeing 247D. The ramifications of an engine failure are clear. If his airplane should lose an engine, he can feather it and *climb*.

Miller's airplane is a 1967 Beech 56TC Turbo Baron. (His *other* airplane is a 1951 Bonanza—the first Model C35 off the line.) The Turbo Baron is a rare bird and a hot rod. Introduced in

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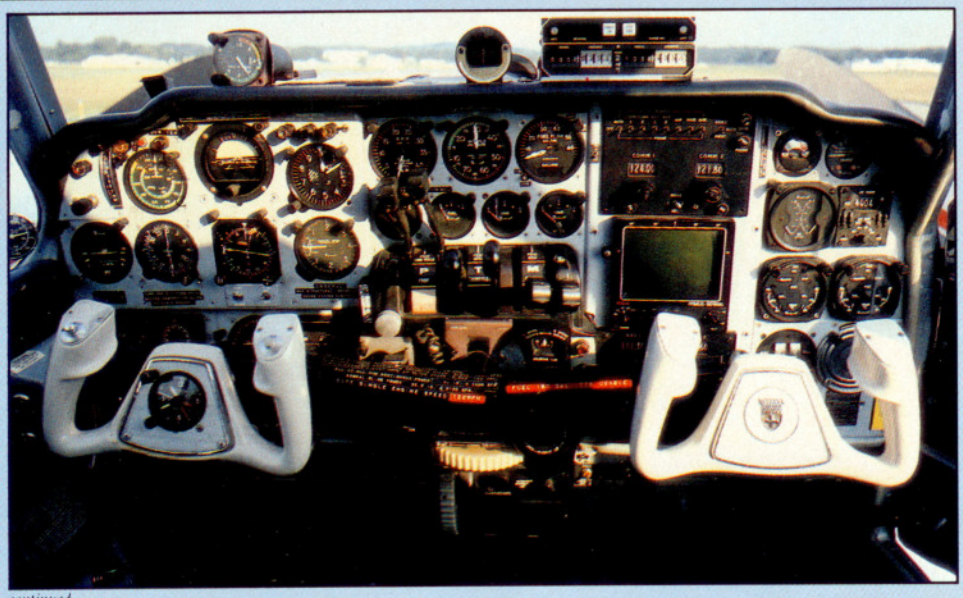
PHOTOGRAPHY BY WILLIAM A. FORD

TURBO BARON

The 56TC is a rare bird,
a 760-horsepower hot rod built
for only five years.



An angle-of-attack indicator and a low-thrust detector supplement N516Q's panel. A Stormscope is to replace the coffee can lid.

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1967, the Model 56TC was the same size as the C55 Baron (albeit a bit heavier; 5,990 versus 5,300 pounds), had as much power as the Queen Air and was a few knots faster than Beech's flagship, the A90 King Air.

Each of the Turbo Baron's 540-cubic-inch Lycoming engines produces 380 horsepower at 41.5 inches and 2,900 rpm, maximum continuous power. Single-engine rate of climb varies from 412 fpm at sea level to 50 fpm at 18,600 feet. With both engines producing 79-percent power at 12,000, true airspeed is about 222 knots and fuel consumption is about 282 pounds (47 gallons) per hour.

Only 94 Turbo Barons were built. Production dwindled from 51 airplanes in 1967 to only produced two in 1971. The hot-rod Beech Turbo Baron was eclipsed by the Duke, introduced in late 1968 with 380-hp engines and a pressurized cabin.

There were few changes to the original design of the Turbo Baron. Beech switched from vacuum pumps to pressure pumps after the first year of production. In 1970, the model designation was changed to A56TC. There were some tweaks to the panel layout and to the flap system, but the most significant change was baffled fuel

tanks. The baffles were installed to prevent unporting. Beech also offered baffle kits for retrofitting earlier Turbo Barons. Unmodified 56TCs have placards prohibiting takeoff, slips and skids with less than 25 gallons of fuel in each of the main fuel tanks.

Miller bought his Turbo Baron, N516Q, in 1971 and bases it at Dutchess County Airport in Poughkeepsie. The C35 Bonanza shares a T-hangar next to the Baron's with two Mazda RX-3 automobiles that he is restoring. Miller uses an RE-5 Rotary Suzuki motorcycle when the weather is nice to make the commute between his home and his airplanes.

A certified airframe and powerplant mechanic, Miller does most of the work on his airplanes himself. His 35,000 hours of flying has left him with a strong motivation to avoid surprises, and he has installed a number of supplementary performance- and hardware-monitoring systems in the Baron. It has an Advanced Aero Safety low-thrust detection system, which provides aural and visual warnings of a power loss, including identification of the affected engine (see "The Which Hunter," August 1983 *Pilot*, p. 45). It also has a Teledyne angle-of-attack indicator. A Ward Aero system warns of impending alternator failure. (Miller said the device alerted him to a failing alternator while he was taxiing out, with his wife aboard, for takeoff in very low IFR weather conditions. They took the Bonanza, instead.) In the sumps of each engine is a device that, by detecting the presence and the amount of metal particles in the oil, monitors internal engine wear. The airplane also has six-probe exhaust gas temperature gauges and turbocharger turbine inlet temperature indicators.

Captain John M. Miller has logged more than 35,000 hours in everything from Jennies to DC-8s. Now, he takes his pick between a Turbo Baron and a C35 Bonanza.

Miller notes that none of this equipment is overly complicated or difficult to install, and he wonders why all multi-engine aircraft do not have all of it before they leave the factory. "The manufacturers don't seem to realize that when you're flying a twin, you need all the help you can get."

He recently took the Turbo Baron on a long trip to California, Arizona, Colorado, Texas and Florida. One leg of the trip was very near the route he used to fly in a Boeing 247D years ago. "That was a pretty good airplane in its day," Miller recalls, "but the Baron has more range, speed and altitude.

"However," he adds with a chuckle, "you have to be a bit crazy to own a 56TC. It is expensive." For flight planning, Miller figures 40 gallons of fuel per hour, block to block; and the airplane requires substantial maintenance. Although he enjoys working on the airplane, the cost for parts is high. (During a recent annual, for instance, the exhaust manifolds on each engine had to be replaced, and they cost $2,000 each.) He jokes that he has discovered how manufacturers price their parts: "It's easy. They put a dollar sign in front of the part number."

It is not likely that Miller will get rid of his hot rod, though. He calls it his "Baby P-38." And though he may sometimes grumble good-naturedly about how much it costs to operate the Turbo Baron, he always concludes that the airplane is worth every cent. □

Beech 56TC Turbo Baron
(1967)
Base price $89,950
Current market value $40,000 to $50,000

Specifications

Powerplants	2 Lycoming TIO-541-E1B4 380 hp ea @ 2,900 rpm, 41.5 in
Recommended TBO	1,600 hr
Propellers	Hartzell three-blade, constant-speed, full-feathering, 74-in diameter
Recommended TBO	1,600 hr or 4 yr
Length	28 ft 3 in
Height	9 ft 7 in
Wingspan	37 ft 10 in
Wing area	199.2 sq ft
Wing loading	30 lb/sq ft
Power loading	7.9 lb/hp
Seats	4-6
Cabin length	8 ft 6 in
Cabin width	3 ft 6 in
Cabin height	4 ft 2 in
Empty weight	3,650 lb
Empty weight, as tested	4,044 lb
Gross weight	5,990 lb
Max useful load	2,340 lb
Useful load, as tested	1,946 lb
Max payload w/full fuel	1,488 lb
Payload w/full fuel, as tested	878 lb
Max takeoff weight	5,990 lb
Max landing weight	5,990 lb
Fuel capacity, std	876 lb (852 lb usable) 146 gal (142 gal usable)
Fuel capacity, opt	1,902 lb (1,068 lb usable) 182 gal (178 gal usable)
Fuel capacity, opt	1,248 lb (1,224 lb usable) 208 gal (204 gal usable)
Oil capacity, ea engine	13 qt
Baggage capacity	820 lb, 70 cu ft

Performance

Takeoff distance, ground roll	1,482 ft
Takeoff distance over 50-ft obst	2,050 ft
Accelerate/stop distance	3,200 ft
Rate of climb, sea level	2,020 fpm
Single-engine ROC, sea level	412 fpm
Max level speed, sea level	260 kt
Max level speed, 25,000 ft	252 kt
Cruise speed/Endurance w/45-min rsv, 1,068 lb fuel (total fuel consumption)	
@ 65% power	
10,000 ft	202 kt/3.9 hr (219.6 pph/36.6 gph)
20,000 ft	221 kt/3.8 hr (219.6 pph/36.6 gph)
@ 55% power	
10,000 ft	188 kt/4.6 hr (186 pph/31 gph)
20,000 ft	204 kt/4.5 hr (186 pph/31 gph)
@ 45% power	
10,000 ft	170 kt/5.2 hr (164.4 pph/27.4 gph)
20,000 ft	184 kt/5.0 hr (164.4 pph/27.4 gph)
Max operating altitude	30,000 ft
Service ceiling	32,200 ft
Single-engine service ceiling	18,600 ft
Absolute ceiling	33,100 ft
Single-engine absolute ceiling	20,300 ft
Landing distance over 50-ft obst	2,665 ft
Landing distance, ground roll	1,290 ft

Limiting and Recommended Airspeeds

Vmc (Min control w/one engine inoperative)	83 KIAS
Vx (Best angle of climb)	96 KIAS
Vy (Best rate of climb)	117 KIAS
Vxse (Best single-engine angle of climb)	99 KIAS
Vyse (Best single-engine rate of climb)	106 KIAS
Va (Design maneuvering)	159 KIAS
Vfe (Max flap extended)	125 KIAS
Vle (Max gear extended)	143 KIAS
Vlo (Max gear operating)	
Extend	143 KIAS
Retract	143 KIAS
Vno (Max structural cruising)	202 KIAS
Vne (Never exceed)	227 KIAS
Vs1 (Stall clean)	84 KIAS
Vso (Stall in landing configuration)	74 KIAS

All specifications are based on manufacturer's calculations. All performance figures are based on standard day, standard atmosphere, at sea level and gross weight, unless otherwise noted.