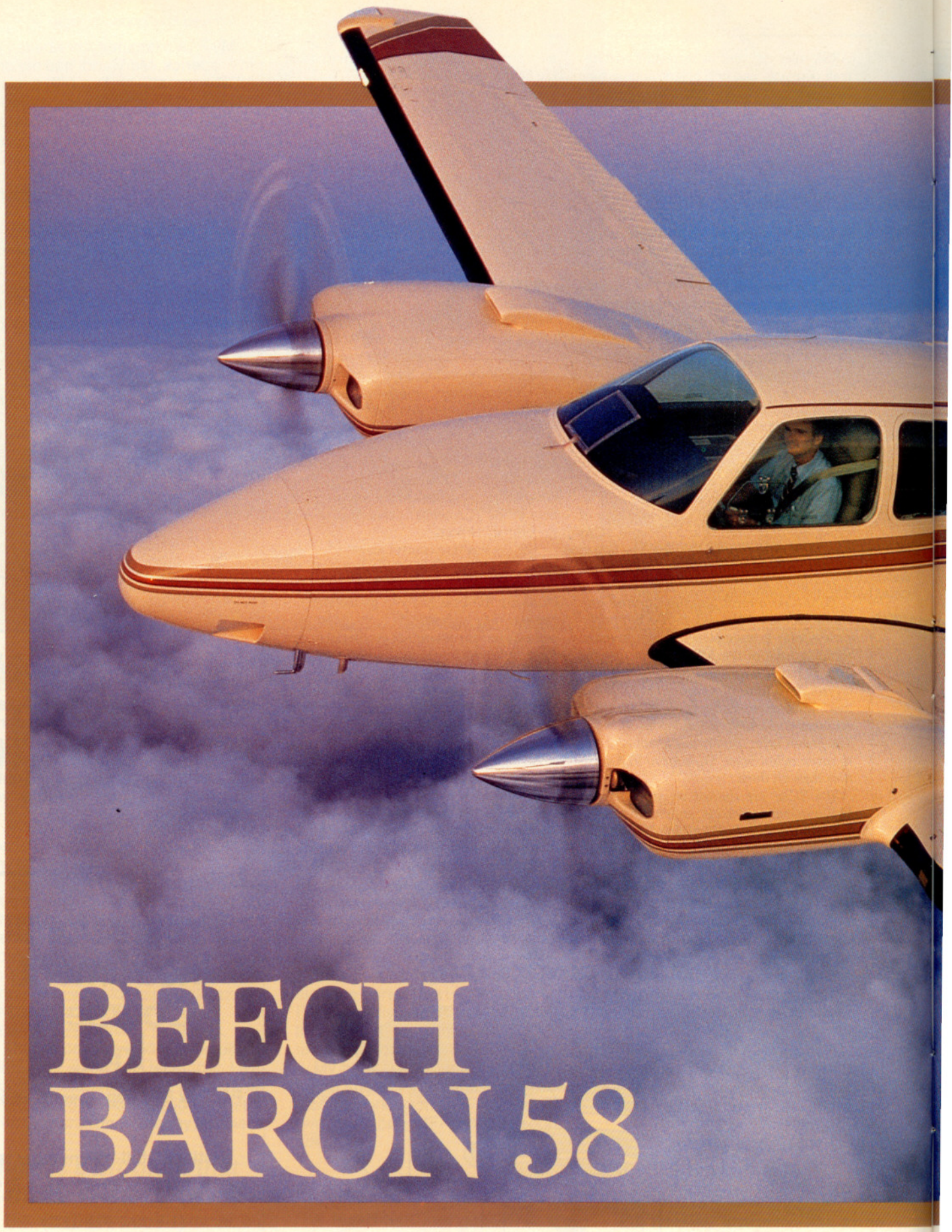


BEECH BARON 58

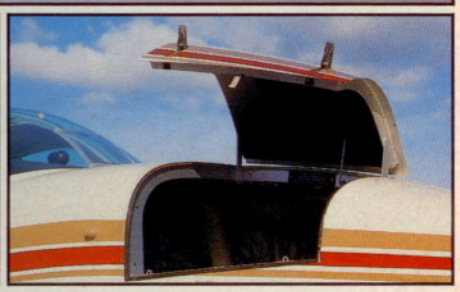
A reborn light twin comes up against a strong used-aircraft market

BY THOMAS A. HORNE

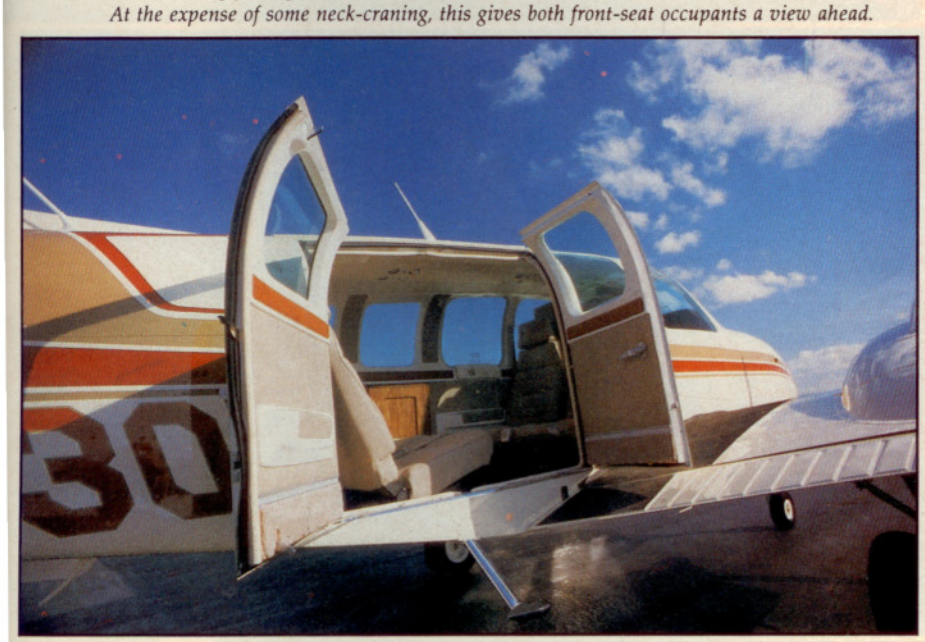
Can a reasonably well-equipped new light twin with a price tag hovering near $500,000 compete with equally capable used twins costing substantially less? Beech Aircraft Corporation apparently is willing to discover the answer to this. Such a choice represents a big gamble. By putting the Baron 58 back in production when demand for new light twins has for years been marginal to nil, the company stands little to gain and much to lose.

If the sales effort is less than successful, it will not have been the airplane's fault. The B-58 has been one of Beech's most popular Barons, with total sales of more than 1,500 airplanes. More powerful and capacious than the 260-horsepower Baron B55, and less expensive to buy and maintain than the 325-hp B-58P, the turbocharged, pressurized, top-of-the line, the B-58 falls in the middle of the Baron line.

Several important improvements were made to the B-58 in 1984, when the airplane was certificated to Federal Aviation Regulations Part 23 standards. The engines were changed to 300-hp Teledyne Continental IO-550s (previous models were powered by 285-hp Conti-



Known icing package is a $33,730 option and has a center-mounted windshield plate. At the expense of some neck-craning, this gives both front-seat occupants a view ahead.



nental IO-520 engines), and the instrument panel was redesigned. Throttle, propeller and mixture controls were changed to the left, center and right positions, respectively, on the power quadrant (previous models had their propeller controls on the left and their throttles in the center), and the engine gauges were changed to a vertically stacked arrangement, located to the immediate right of the flight instruments. In other conformations to standardization, the landing gear and flap switches were relocated to the left and right sides of the power quadrant, respectively (earlier models had these controls reversed; the National Transportation Safety Board asserted that there were many 'design-induced' inadvertent landing gear retraction accidents in Barons and Bonanzas due to this arrangement), and the center-mounted control column was eliminated in favor of separately mounted control columns. This change did away with the massive bar that connected earlier dual-control yokes and obscured the pilot's view of landing gear, flap and other controls mounted on the instrument subpanel.

The newly certified B-58 is, in operational terms, an entirely different airplane from its predecessor. The engines are designed to operate at temperatures as high as 20 degrees Celsius lean of peak exhaust gas temperature (EGT). An altitude-compensating fuel pump automatically enriches or leans the fuel-air mixture ratio as the airplane climbs or descends. In climb and descent, the mixture levers remain at the full-rich setting. Same thing for takeoffs at high density altitudes. There is no need to manually lean the engines for optimum performance prior to a hot and/or high departure. Just leave the mixtures full rich, and the pumps make the proper adjustments. The only time the pilot makes mixture adjustments is at altitude, when establishing cruise settings.

And as far as mixture goes, there are only two choices—20° rich and 20° lean of peak EGT. The B-58's EGT gauges, located fourth down from the top row of engine gauges, are delineated in 20° increments, making leaning an easy matter.

The "lean burn" engines also allow the pilot to operate the airplane at power settings as much as four inches over square (i.e., a condition in which the manifold pressure value exceeds the value of the first two digits of the propel-

ler rpm. In many normally aspirated engines, this condition can be undesirable, since it can subject the engine to high, damaging internal pressures it is not designed to tolerate). For example, one recommended cruise power setting for a pressure altitude of 4,000 feet is 25 inches of manifold pressure, 2,100 rpm and a mixture setting of 20° lean of peak EGT. The resultant airspeed is published as 171 KTAS—not much less than the 180 KTAS published for the 20° rich of peak EGT setting. But the big difference is in fuel burn: 11.3 gallons per hour per engine for the lean setting, versus 14.2 gph for the rich. Equally dramatic differences in fuel burn occur at all altitudes, so in the new B-58 it makes little sense to run the engines rich. In this airplane, as with the Piper PA-46 Malibu (equipped with a 310-hp Teledyne Continental TSIO-520-BE engine), pilots must overcome the urge to run rich of peak in the mistaken belief that they are sparing their engines. The engines have been designed to run lean of peak; it does not damage them.

Yet another operational distinction of the B-58 runs counter to what many pilots have come to accept as standard practice. After takeoff, the throttles remain full forward. The pilot simply retards the propeller levers to the recommended 2,500 rpm. Remember, the mixture is leaned automatically.

Pilots transitioning to the new B-58 must take the time to learn of these and other idiosyncrasies. This Baron, like the others, is a complex airplane that demands a thorough knowledge of its systems, procedures and limitations. Par-

ticular emphasis should be placed on weight and balance; like most light aircraft, the B-58 is simply not a full-fuel/full-passenger airplane (especially when equipped with the optional 194-gallon fuel system), and it can be easy for the center of gravity to end up aft of limits, even at lighter weights.

Barons may be easy to fly, but for a pilot to be thoroughly proficient is another matter. FlightSafety International's Baron Training Center (located near the Beech factory in Wichita; telephone 800/227-5656) offers pilot initial and recurrent training in the B-58 and other Barons. FSI has seen fit to establish a one-week course for pilots transitioning to Barons. This seems like a good idea. Because the airplane handles so well under normal circumstances, complacency can easily set in. A perfunctory checkout with limited practice in single-engine procedures is simply insufficient, both for safety and, increasingly, the satisfaction of insurers.

When everything runs well in the B-58, the airplane is a pleasure to fly. Visibility inside and out is very good indeed, and the seats are comfortable. Pilots and passengers alike have plenty of head and shoulder room. The B-58's relatively high (152 KIAS) landing gear and flap extension speeds make it easy to fit in with faster traffic operating at busy airports. The controls are light and, with the exception of its well-known tendency to enter a dutch roll in turbulence, the overall feeling is one of reassuring stability. It is no wonder that Baron owners remain loyal and that these airplanes hold their value well in the used market.

Takeoffs and descents are simplified: Leave the mixtures rich and the fuel pumps do the leaning automatically.

Therein lies the rub. With so many good used Barons to choose from, why buy new? The sale of nine B-58s to Lufthansa German Airlines and four to the Indonesian government (in both cases for training purposes) can be explained by the weakened dollar. The remaining 15 or so B-58s sold since production was resumed hardly constitute a

strong response from the owner-flown segment of the market.

How to justify this marketing move? Part of the reason may be the perception that, as the pool of existing general aviation airplanes ages, prospective customers will be less inclined to invest in airplanes with a lengthy list of maintenance problems or high-time airframes. Airplanes, after all, do wear out, and, as has been pointed out by AOPA and other user groups, owners of older airplanes sometimes experience difficulty in obtaining replacement parts. There are still many owners and operators for whom a new light twin may hold appeal. The B-58 may not have the turbocharging or pressurization that allows certain operations, but neither does it have the associated maintenance burdens. What it does have is a tradition of quality, brand loyalty, high quality-control standards, fuel economy, comfort, a strong support network and—oh, yes—two engines. If the B-58 endures, it will be by these virtues, not its price tag. Barons have always been pricey items, but this has rarely dissuaded customers in the past—until prices began to soar in the early 1980s.

One has to admire Beechcraft for its willingness to take risks. Its investment in the Starship program, its decision to build and market the Beechjet (nee Mitsubishi Diamond II) and its price reduction of the Bonanza F33 bespeak its optimism. We have already seen the impressive effect that the Bonanza price cut has had: The F33's production run is sold out for the foreseeable future. In this there is a strong hint. If the current B-58 sales strategy is less than satisfactory, there is an alternative approach. □

Beechcraft Baron 58
Base price: $389,650
Price as tested: $542,895
AOPA Pilot Operations/Equipment Category*:
Cross-country: $398,090 to $419,310
IFR: $500,590 to $560,690

Specifications:

Powerplants	Two Teledyne Continental IO-550-C six-cylinder, 300 hp @ 2,700 rpm
Recommended TBO	1,700 hr
Propellers	Two McCauley constant-speed, feathering, three-blade, 77-in diameter
Recommended TBO	1,700 hr or five calendar years
Length	29 ft 10 in
Height	9 ft 9 in
Wingspan	37 ft 10 in
Wing area	199.2 sq ft
Wing loading	27.6 lb/sq ft
Power loading	9.16 lb/hp
Seats	6
Cabin length	12 ft 7 in
Cabin width	3 ft 6 in
Cabin height	4 ft 2 in
Empty weight	3,481 lb
Empty weight, as tested	3,894 lb
Max ramp weight	5,524 lb
Gross weight	5,500 lb
Useful load	2,019 lb
Useful load, as tested	1,606 lb
Payload w/full fuel (std)	1,203 lb
166-gal opt	1,023 lb
194-gal opt	855 lb
as tested	610 lb
Max takeoff weight	5,500 lb
Max landing weight	5,400 lb
Fuel capacity, std	852 lb (816 lb usable) 142 gal (136 gal usable)
Fuel capacity, w/opt tanks	1,032 lb (996 lb usable) 172 gal (166 gal usable)
or	1,200 lb (1,164 lb usable) 200 gal (194 gal usable)
Oil capacity, ea engine	12 qt
Baggage capacity, nose	300 lb, 18 cu ft
rear (fifth and sixth seats removed)	400 lb, 37 cu ft
extended rear	120 lb, 10 cu ft

Performance

Takeoff distance, ground roll	1,403 ft
Takeoff distance over 50-ft obst	2,371 ft
Accelerate/stop distance	3,000 ft
Accelerate/go distance	3,900 ft
Max demonstrated crosswind component	22 kt
Rate of climb, sea level	1,750 fpm
Single-engine ROC, sea level	394 fpm
Max cruise speed, 4,600 ft	203 KTAS
Cruise speed/Range w/45-min rsv, std fuel (fuel consumption, ea engine) @ maximum cruise power (full throttle, 2,500 rpm, 20°C rich of peak EGT)	
8,000 ft	200 KTAS/740 nm (95 pph/15.8 gph)
Cruise speed/Range w/45-min rsv, 166-gal opt fuel (fuel consumption, ea engine) @ recommended cruise power (25-in mp, 2,500 rpm, 20°C lean of peak EGT)	
8,000 ft	195 KTAS/1,050 nm (81 pph/13.5 gph)
Cruise speed/Range w/45-min rsv, 194-gal opt fuel @ economy cruise power (full throttle, 2,100 rpm, 20°C lean of peak EGT)	
16,000 ft	151 KTAS/1,610 nm (46 pph/7.7 gph)
Service ceiling	20,688 ft
Single-engine service ceiling	7,284 ft
Landing distance over 50-ft obst	2,498 ft
Landing distance, ground roll	1,439 ft

Limiting and Recommended Airspeeds

Vmc (Min control w/critical engine inoperative	84 KIAS
Vsse (Min intentional one-engine operation)	88 KIAS
Vx (Best angle of climb)	92 KIAS
Vy (Best rate of climb)	105 KIAS
Vxse (Best single-engine angle of climb)	100 KIAS
Vyse (Best single-engine rate of climb)	101 KIAS
Va (Design maneuvering)	156 KIAS
Vfe (Max flap extended)	152 KIAS
Vle (Max gear extended)	152 KIAS
Vlo (Max gear operating)	152 KIAS
Minimum airspeed in icing conditions	130 KIAS
Vno (Max structural cruising)	195 KIAS
Vne (Never exceed)	223 KIAS
Vr (Rotation)	85 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, sea level, gross weight conditions unless otherwise noted.

** Operations/Equipment Categories are defined in the June 1987 AOPA Pilot, p. 98. The prices reflect the costs for equipment recommended to operate in the listed categories.*