Used-Aircraft Report

The baby **Barons**

First-class twin on a budget

BY PETER A. BEDELL

These days light twins can be had for very competitive prices. High fuel and insurance costs are a big reason for the relatively low purchase prices in this class of airplane. Like the oft-bashed sport-utility vehicle on the highway, light twins are hardly pictures of efficiency compared to heavy singles. But if you routinely carry a decent load of people, bags, and fuel the light twin may be the best airplane for you. Beechcraft's Baron line of light twins has been one of the mainstays of this category for more than 40 years. There are several Baron models to choose from, but for this report we'll concentrate on the 260-horsepower variants, which encompass the original Model 95-55 through the B55.

Beechcraft's Model 95-55 Baron was introduced in 1961, and it was basically a modified Model 95 Travel Air that had a swept tail and redesigned nacelles covering new 260-horsepower Continental IO-470 engines. Compared to the

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Travel Air's 180-horsepower engines, the new airplane was a stellar performer that brought real competition to Cessna's sleek 310 (see "50 Years of the Cessna 310," November 2004 *Pilot*). The Baron tacked another 15 knots of speed onto the Travel Air at a penalty of about 5 gallons per hour. You can count on 180 to 185 knots true airspeed on 24 gallons per hour at typical rich-of-peak power settings at 7,000 to 11,000 feet.

In the 44 years since the Baron line was introduced, Beechcraft spun off many different versions of the basic Model 55 and Model 58 airframes. It can be difficult for the average Joe to tell the difference in the many types. The original 95-55, A55, and B55 models have become known as the "baby Barons" and are easily distinguished by their lack of air scoops on top of the nacelles. Sharper eyes may notice the shorter nose and smaller-span horizontal stabilizer as further evidence. Of the Model 55s, the B55 was by far the most popular, with a total of nearly 2,000 units delivered in both civilian and military (T–42) variants.

Five seats were available in the earliest Barons, with six becoming the norm by 1962 with the introduction of the A55. Model 55 Barons can be easily loaded out of the aft center-of-gravity (CG) envelope if carrying six people. Putting all the bags or some ballast in the 270-pound-capacity nose compartment is critical to balancing out heavy loads in the back. Starting with the B55 model in 1964, Beechcraft added an optional extended aft baggage area behind the rear seats with a 120-pound capacity. The CG should stay in check if care is taken to keep the heaviest occupants forward.

Over the years, maximum takeoff weight (MTOW) increased incrementally. When the B55 was introduced in 1964 MTOW went from 4,880 pounds to an even 5,000. In 1966, MTOW went up to 5,100 pounds. Useful load is respectable, especially in older models. Typical useful loads are in the range of 1,500 to 2,000 pounds, depending on age and equipment. Older airframes with no deice boots, radar, or well-stocked panel can easily accommodate a family of six, full fuel, and baggage on a four-hour flight with reserves. However, many owners consider the aft-

The extended aft baggage door is a nice-to-have option for loading passengers and cargo (right). The baby Barons are easily identified by the lack of airscoops on the top of the nacelles. They have stubbier noses and smaller horizontal stabilizers.

most seats unsuitable for adult humans and remove one or both of them, leaving the cavernous rear compartment open for ungainly cargo. Think of it as a luxurious four-seater that can do six, if needed.

One reason Model 55s are popular for families is the fact that they are significantly less expensive than the slightly larger Model 58, which is still in production. The 58's huge double-door access is far more attractive to charter operators and cargo haulers and commands a $35,000 premium over same-year Model 55s, using average retail prices from *Vref* (see page 82). In the passenger-carrying mode, the 58 offers the option of a club-seating arrangement better suited to business travelers. Riders simply step right into the cabin—no walking on the wing and no limbolike maneuvers through a small baggage door as required with a 55. Asking your kids to enter the airplane through a baggage door is no big deal. But imagine asking a paying charter passenger to do such a thing and you can see why the 58 makes a better charter airplane. If the airplane is to be used primarily for your family, pocket the $35,000 difference and go for the 55.

Two rear baggage doors were available from Beechcraft; a small 18.5-inch-wide door was standard while a comparably huge 38.5-inch-wide door was optional. The large baggage door is nice to have when loading passengers or ungainly cargo into the aft baggage compartments.

The Continental IO-470-L engines that power the baby Barons have a 1,500-hour time between overhauls (TBO)—200 hours less than the IO-520 and IO-550s that power larger normally aspirated Barons. However, owners of 470-powered Barons are more likely to refer to their engines as "bulletproof" than are owners of higher-powered Barons. Owners who keep their airplanes active can expect to reach TBO with no major problems.

The baby Barons burn anywhere from 22 to 26 gallons of fuel per hour at typical rich-of-peak power settings. Most airframes are equipped with the optional 142-gallon (136 gallons usable) fuel system, allowing for good range/payload flexibility. A 106-gallon

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fuel system is standard. All 55s have four separate bladder-style fuel tanks—two in each wing. The 31-gallon auxiliary tanks have a level-flight-only limitation that requires some familiarity and management during flight. Later models have interconnected tanks with a simple On-Off-Crossfeed fuel selector, making fuel management a no-brainer.

Pilots new to the Baron need to remember that there are some key differences between the Model 55 and light twins from other manufacturers. Most notably is the placement of the throttle and prop levers as well as the gear and flap switches. Beechcraft carried over to the Baron the layout of the Beech 18 panel, where the throttle levers were in the middle of the quadrant, giving pilot and copilot equal access to the go-levers. The propeller control levers are to the left of the throttles and the mixtures to the right. Piper, Cessna, and other manufacturers reasoned that light twins were more likely to be flown by one pilot rather than a crew and placed the throttles on the left of the quadrant followed by the prop and mixture controls, respectively, as the hand moves right.

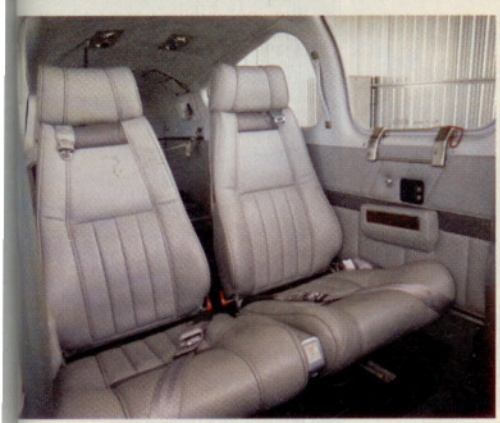
In addition, Beechcraft differed from other manufacturers in its placement of the gear and flap switches. Like manufacturers of larger transport airplanes, Beechcraft put the landing-gear switch on the right side of the panel where, in theory, the copilot would have easy access to it. Again, the other manufacturers reasoned that light twins would be flown by a single pilot rather than a crew and the gear switch was placed on the left and the flap switch on the right. The panel-layout differences have led to some incidents and accidents over the years and are a big reason that insurance companies may balk at insuring some pilots new to the Baron.

Although Barons are certified in the Normal category, they are stressed to or beyond Utility category limits, bringing often-unseen advantages to prospective buyers. Besides added strength and integrity, the "overbuilding" gives the Baron a relatively high turbulent-air-penetration speed of 156 knots at max weight. Flight load (G) limits for the B55 are 4.4 positive Gs and 3.0 negative Gs, making it quite stout for a light twin.

Hits
- Good mix of speed, payload, and range
- Twin redundancy
- Good build quality
- Well-harmonized controls make it fun to fly
- Great for families
- Good short-field ability

Misses
- Hefty fuel bills compared to a single
- High insurance rates for low timers
- Pricey maintenance compared to a single
- Narrow cabin
- Nonstandard panel design
- Ungraceful entry to aft seats

Several modifications are available to owners of baby Barons. The more popular ones are: vortex generators to improve low-speed handling (especially with one engine inoperative), deice boots, GAMIjector tuned fuel-injector nozzles, flap/aileron gap seals, and one-piece sloped windshield conversions for 1967 and older airframes. Colemill Enterprises, of Nashville, holds an STC to install 300-horsepower Continental IO-550-E engines on the B55 to create a real screamer. The package, known as the President II conversion, produces true airspeeds of 200 knots or greater on about 30 gallons per hour of fuel total at typical rich-of-peak power settings.



The owner's B55 sports a luxury interior complete with drop-down screen for DVD viewing (top). The rear seats were removed to create a luxurious four-place airplane.

SPECSHEET

1977 Beechcraft Baron B55

Average retail price: $151,000

Specifications

Powerplants.....260-hp Continental IO-470-L
Recommended TBO .....1,500 hr
Propellers ..76-inch dia Hartzell three blade, full feathering
Length .....28 ft
Height .....9 ft 7 in
Wingspan.....37 ft 10 in
Wing area .....199.1 sq ft
Wing loading.....25.6 lb/sq ft
Power loading .....9.8 lb/hp
Seats 4/6
Cabin length.....10 ft 1 in
Cabin width .....3 ft 6 in
Cabin height.....4 ft 2 in
Empty weight .....3,226 lb
Empty weight, as tested .....3,669 lb
Max ramp weight.....5,121 lb
Max takeoff weight .....5,100 lb
Useful load .....1,895 lb
Useful load, as tested .....1,452 lb
Payload w/full fuel (136 gal) .....1,079 lb
Payload w/full fuel, as tested (136 gal) .....636 lb
Max landing weight .....5,100 lb
Fuel capacity, std ..106 gal (100 gal usable) .....636 lb (600 lb usable)
Fuel capacity, w/opt tanks .....142 gal (136 gal usable) 852 lb (816 lb usable)
Oil capacity, ea engine .....12 qt
Baggage capacity (nose) .... 300 lb, 12 cu ft
(extended aft).....120 lb, 10 cu ft

Performance

Takeoff distance, ground roll .....1,400 ft
Takeoff distance over 50-ft obstacle .....2,154 ft
Accelerate-stop distance .....2,600 ft
Accelerate-go distance.....1,400 ft
Max demonstrated crosswind component .....22 kt
Rate of climb, sea level.....1,693 fpm
Single-engine ROC, sea level .....397 fpm
Maximum level speed, sea level .....201 kt
Maximum level speed, 6,000 ft .....188 kt
Cruise speed/endurance w/45-min rsv, opt fuel (136 gal) (fuel consumption, ea engine)
@ 77% power, best-power mixture, 7,000 ft .....188 kt/4.4 hr (80 pph/13.5 gph)
@ 65% power, best economy, 10,000 ft .....184 kt/4.9 hr (72 pph/12 gph)
@ 55% power, best economy, 12,000 ft .....173 kt/6.0 hr (60 pph/10 gph)
Service ceiling .....19,300 ft
Single-engine service ceiling .....6,400 ft
Landing distance over 50-ft obstacle.....2,148 ft
Landing distance, ground roll .....1,467 ft

Limiting and Recommended Airspeeds

V_{MC} (min control w/critical engine inoperative) .....80 KIAS
V_{SSE} (min intentional one-engine operation) .....84 KIAS
V_X (best angle of climb) .....73 KIAS
V_Y (best rate of climb) .....104 KIAS
V_{XSE} (best single-engine angle of climb) .....88 KIAS
V_{YSE} (best single-engine rate of climb) .....99 KIAS
V_A (design maneuvering) .....156 KIAS
V_{FE} (max flap extended) .....122 KIAS
V_{LE} (max gear extended) .....152 KIAS
V_{LO} (max gear operating) .....152 KIAS
V_{NO} (max structural cruising) .....182 KIAS
V_{NE} (never exceed).....223 KIAS
V_R (rotation) .....82 KIAS
V_{S1} (stall, clean) .....80 KIAS
V_{SO} (stall, in landing configuration).....73 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.

Colemill can also install 285-horsepower (continuous) IO-520s under the President 600 conversion.

Average prices for the baby Barons range from $76,500 for a 1961 95-55 to $200,000 for a 1982 B55, according to *Vref*. As with any airplane, there can be large deviations from the average depending on equipment, engine time, modifications, and damage history. The airplane pictured on these pages definitely falls into the category of "well equipped." N2125L is a 1977 B55 owned by Mike Sobota of Gaithersburg, Maryland. The instrument panel is stuffed with modern avionics and the interior is a luxurious creation by Air Mod in Batavia, Ohio. There's even a DVD entertainment system with a flip-down monitor in the ceiling.

Buyers considering a Baron would do themselves a favor by having the airplane looked over by a knowledgeable Beech mechanic. Some control surfaces are skinned with magnesium and can be quickly turned to junk by corrosion. Replacing the skins on two elevators can easily cost more than $10,000—a surprise any new owner wouldn't want to swallow. Fuel bladder condition is another airframe item to check on. If the bladders haven't been changed in 20 years, you'll be faced with doing them soon. Cracking induction air boxes are another sore spot for owners of 470-powered Barons. New replacements cost thousands from Raytheon. Although Beechcraft owners like to complain about parts prices, factory support is good and the sheer number of airframes