BEECH BARON 58P

The businessman's express

BY EDWARD G. TRIPP

PHOTOGRAPHY BY ART DAVIS

continued

BEECH BARON 58P

• General aviation is still a trade-up market. Pilots continue to buy more performance and flexibility. In today's used aircraft market, it is possible to purchase very sophisticated turbine airplanes for the price of sophisticated piston singles. More than enough operational and accident information has accumulated over the years to support a general concern about the way in which people move up into complex, multiple-systems aircraft. Too many operators do not get the information they should to use the capabilities they purchase successfully and dependably.

The problem is not the lack of information: Instead, it is the failure to take advantage of what is there. For instance, I have attended many aircraft type schools, and at literally every one there are operators who have decided to go to school after having operated a particular make and model for a period of time and getting into enough trouble to realize they need more information. Some of them have made it apparent that they had not even read the information on operations and systems contained in the pilot operating handbook (POH). It is tragic that other pilots did not come to that realization until it was too late.

For experienced pilots, the basic task of flying high-performance aircraft is comparatively easy, once the characteristics of a particular aircraft are known. It is all the add-on systems, the planning and operating decisions, the emergency procedures and the care and feeding (pre- and post-flight inspection and maintenance)—in other words, the complexities that add the capability—that can create problems for the unschooled and uninformed.

There also is the need for recurrent, or proficiency, training. The tendency toward complacency or overconfidence is strong in all of us. The longer we fly one particular make and model without problems and without periodic review and practice, the stronger the tendency becomes.

Part of that tendency comes from the way a pilot thinks about an airplane. All too often, the aircraft is rarely thought about until we are about to fly, and then it is quickly forgotten after it is tied down or pushed back into a hangar. We are more likely to get away with this attitude with simple airplanes than with complex ones, but regular features such as "Never Again" and "Safety Corner" regularly give examples of pilots who have become trapped by a casual attitude or complacency about their aircraft.

We should strive to get all the information we can, particularly when flying complex aircraft and aircraft used primarily for on-demand transportation. It starts with school, if one is available, or at least thorough grounding in the POH and a thorough flight check in the environment in which we plan to operate.

We can learn much through the experiences of others in similar aircraft and types of operation. A solid review of accident records, airworthiness directives (ADs) and service difficulty reports (SDRs) can provide useful data on the types of mechanical and operational problems others have had. SDRs, for instance, can provide data on specific systems in an aircraft to be checked regularly in a preventive maintenance schedule, so one can avoid in-flight problems.

The more you fly your airplane to keep to a schedule, which means greater exposure to weather and other conditions, the more dangerous is a casual approach to your airplane, and the more you expose yourself and your passengers to hazard.

This is not one of those "airplanes don't kill people, pilots do" lectures. Things break without any mistakes or neglect from pilots. But the more knowledge and information you have and the more care you take to inspect and fix things before they break, the less likely you are to be overcome by surprise or victimized by events.

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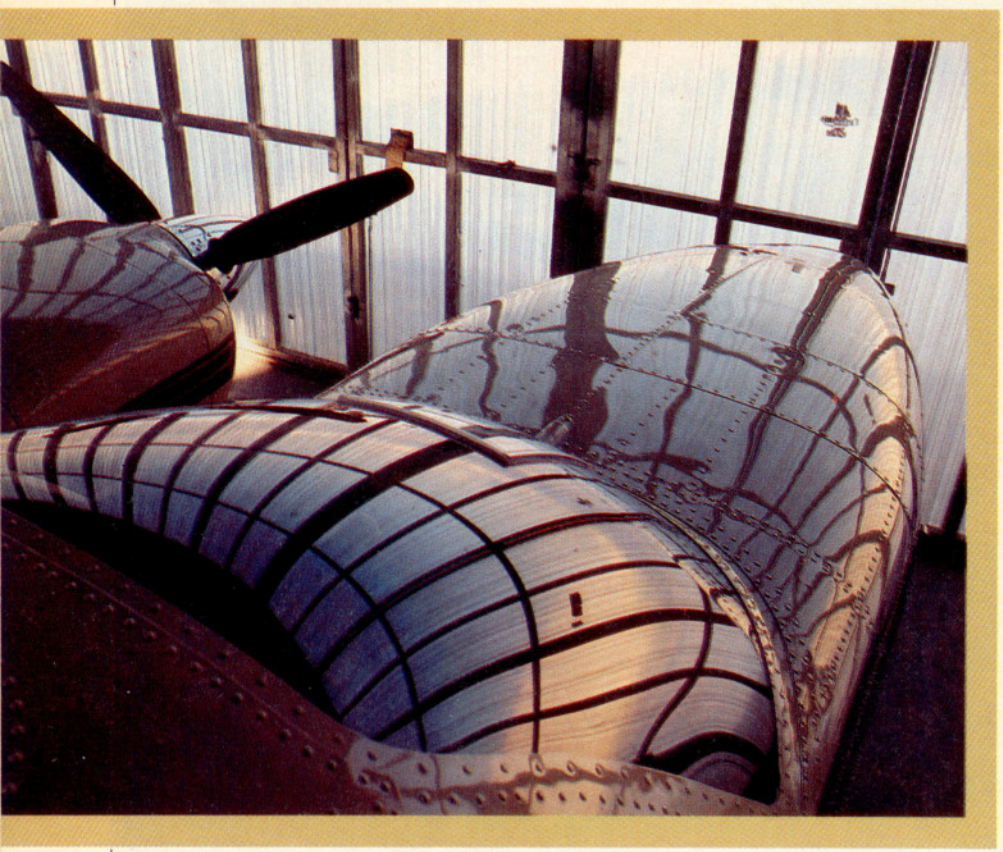
The Beechcraft Baron 58P is a good example of a very capable high-performance aircraft. It rewards the well-trained pilot who takes pains with its



The 58P is the only Baron certificated to FAR 23 standards, but shares its beefy structure with the rest of the family. Pilots who have not flown it question visibility through the center-mounted windshield deice plate, above, but it works well.

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BEECH BARON 58P

Designed to get to and operate at high levels, 58P performance is good at the lower altitudes.

care and feeding, but it can extract penalties from those who are not properly trained or are careless in operation and maintenance.

Pilots call it the P-Baron, the pressurized Baron and the baby Duke. Controllers frequently call it a King Air. Whatever you call it, the pressurized Baron became the top of Beech's piston-engine aircraft line when Duke production stopped.

Now that Piper has abandoned the Aerostar line, the 58P also has become the fastest piston twin currently manufactured, edging out Cessna's 421 and Piper's Mojave by a small margin. The latter two aircraft are cabin-class twins; the 58P is close to cabin class, with its aft entry door on the left side of the fuselage and an optional club seating arrangement.

As of January, 485 58Ps had been sold since the model was introduced as part of the 1976 product line. Most are owner-flown, and most are the first pressurized aircraft operated by the bulk of the buyers. The owner/operator profile is close to that of the Aerostar.

A study of the accident record and SDRs for the past five years indicates that quite a few of the accidents and maintenance or reliability problems could have been avoided with better training and planning, use of available information and more regular, thorough inspections and preventive maintenance. Three principal weaknesses that were not operator-caused and were the subject of ADs showed up in early operations: cabin window and frame integrity, cracking cases on the early L series engines and propeller blade-shank cracking. Eight ADs have been issued; all but one (for fuel pump leaks) were announced before 1980.

Unlike the rest of the Baron family of airplanes, the 58P was certificated to FAR 23 standards, even though it shares much of its design, configuration and construction with the rest of the 50 series.

Quite a few changes have been made to the model during its nine-year production cycle. In the spring of 1976, an optional wing-tip auxiliary fuel system was offered to increase usable fuel from 166 to 190 gallons. For the 1979 model year, the intercooled 310-hp Continental TSIO-520-L engines were replaced with 325-hp TSIO-520-WBs, which also employ intercoolers to reduce induction air temperature. At the same time, maximum pressure differential was moderately increased from 3.7 to 3.9 pounds per square inch (the higher differential provides a 10,000-foot cabin altitude at 22,000 feet), and maximum takeoff weight was raised from 6,100 to 6,200 pounds.

Basic empty weight increased 14 pounds. In 1982, internal corrosion-proofing was made standard, time between overhauls (TBO) was increased from 1,400 to 1,600 hours, and the static discharge system was improved.

From a pilot's point of view, perhaps the biggest changes were introduced in the 1984 model. The yoke, power controls, panel and arrangement of gear and flap controls were reconfigured to what is the currently accepted layout. (FAR Part 23 contains broad requirements for the standardization of general aviation cockpits. However, there is a Notice of Proposed Rulemaking that proposes to enhance standardization.) The throttles have been moved from the center of the power quadrant to the left side, and the large throw-over control column has been replaced with individual control yokes and columns on either side of the cockpit. Pilots making the transition to the reconfigured Baron 58 series will welcome the change, but pilots with Baron experience will have to be careful not to succumb to old habits when operating gear, flaps and engine controls.

The net result is that the lower portion of the instrument panel is much easier to see, the controls are similar in placement to most other retractable singles and twins, and—with the use of smaller engine gauges—what had been a very full panel now has lots of room for avionics and other accessories. Relocation of all engine gauges to the center left of the panel makes them much easier to monitor.

Members of the *Pilot* staff recently flew a new 58P for about 30 hours on a variety of business trips that ranged from relatively short dashes to long, cross-country hauls. During most of the period, the weather was poor to bad, with considerable icing, lots of turbulence and other conditions that affected flight planning and in-flight decisions. These circumstances provided opportunities—or requirements—to use every system and accessory. The only condition we did not experience was high ambient temperature. The highest temperature experienced was 10°C above standard.

The trips ranged across the eastern half of the United States and from the Canadian border to the Gulf Coast and operated into a wide mix of hub airports and small, uncontrolled fields. Many onlookers, ramp attendants and pilots consider Barons small aircraft, so the reactions to N2058V were interesting. Comments about the exterior and interior were uniformly positive and admiring. Several pilots, including three operators of light and medium twins, said that the 58P was their ultimate twin.

Unfortunately for most pilots, ultimate connotes desired but beyond reach. And for an increasing number of us, the ability to purchase the aircraft of choice is driven by genuine business need and hard financial analysis. For those with the supportable need, the pressurized Baron is an interesting alternative, particularly in the owner- or operator-flown category. It provides competitive performance with the

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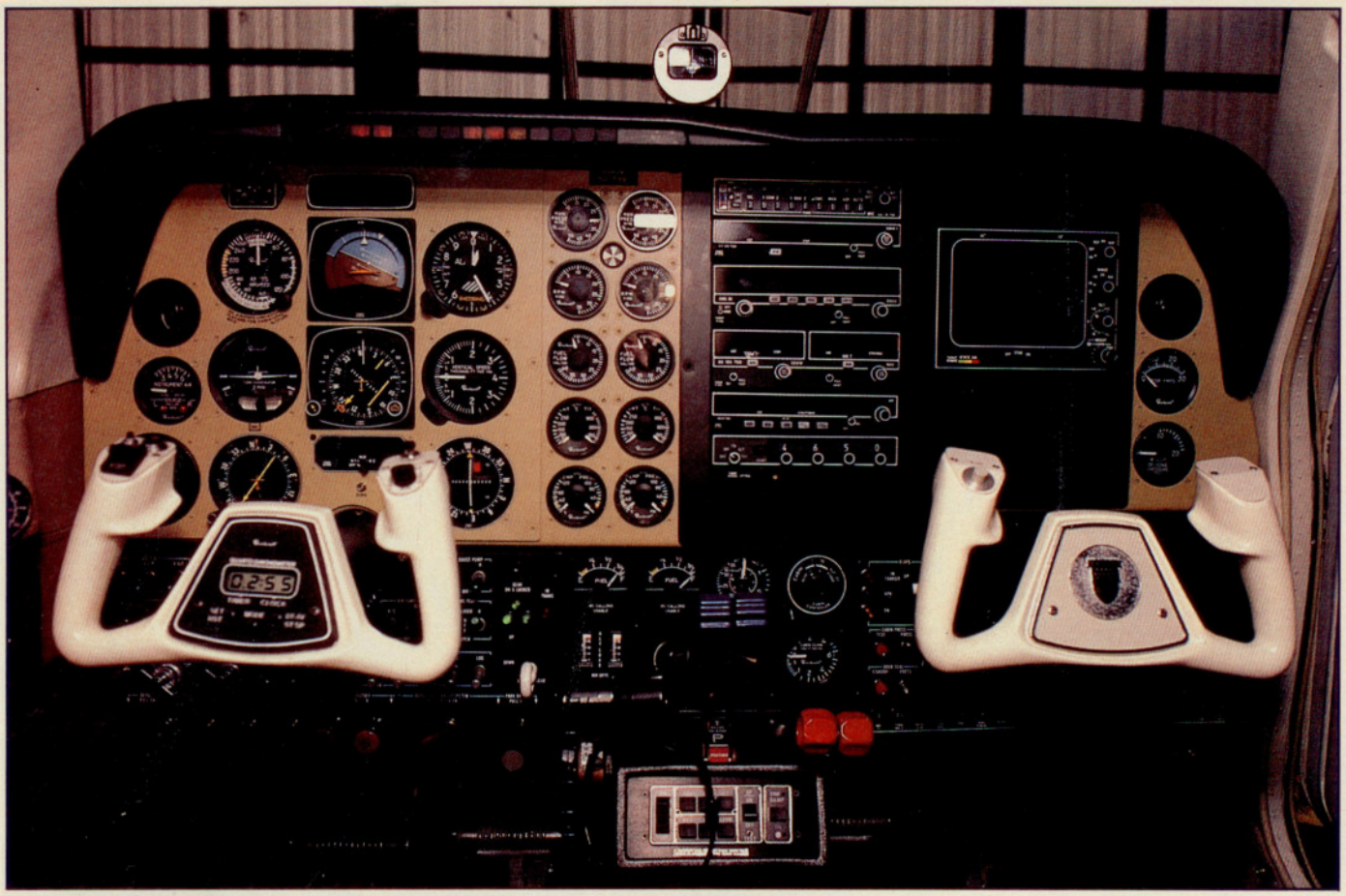

The reconfigured cockpit, reduces pilot work load and provides more space for avionics. The controls are now standardized.

BEECH BARON 58P

Cabin is airy, comfortable and arrangement is flexible. The aft seats fold down to provide access to the rear baggage compartment and can be stowed or completely removed to increase floor area. Options include club seating with reclining chairs and a folding writing table.

A small refreshment cabinet is another option. It holds hot beverages, ice and condiments.

smaller turboprops at about half the cost, can be equipped for all-weather operations, has the operational flexibility to mix in with other high-performance traffic at big airports or handle relatively short, rough strips. For the properly trained pilot, it is both easy and pleasant to fly. On the used market, the 58P is holding its value relatively well.

I have flown several 36-series Bonanzas and 58 Barons with the reconfigured panel and controls, and I am very impressed with the changes. Switches, gauges and controls that you had to stretch, duck or crane your neck to see are now in full view. The reorganized panel, with the smaller, turbine-size engine gauges, seems bare compared to the original configuration.

During the check-out, there was no difficulty locating things in the cockpit, so we were able to concentrate on systems, operating techniques and flying. There is one arrangement in the cockpit that I would like to see changed: The switches for the fuel pumps are mounted directly above the cowl flap switches just to the left of the gear selector. They operate in opposite directions (fuel pumps up for on, cowl flaps down for open). Especially with the indicator for the cowl flaps up on the annunciator panel, the two controls should operate in the same direction.

Also, while the 58P that we flew is very well equipped, a counter-drum pointer altimeter should be part of the standard kit for any aircraft designed and equipped to fly at middle and high altitudes.

For the most part, preflight, engine start and runup are straightforward. A couple of items require extra care, however. While the 58P has a good payload with full fuel for this category of airplanes (2058V has 709 pounds), careful planning is required to stay within limits.

Fueling should be carefully monitored, not just out of general concern to ensure that the proper grade of fuel is loaded, but also because the outboard filler port for aircraft with the auxiliary tank demands careful insertion of the nozzle to preclude damage to the tank. The sight gauges just outboard of the engine nacelles are helpful when taking on partial fuel or when fuel must be offloaded for weight and balance/payload adjustments.

The pilot should personally monitor passenger boarding and ensure that passengers entering the cabin step over the threshold to avoid damage to the rear door pressure seal. He should personally secure the aft door, then check the visual indicators for proper locking. (There are cockpit annunciators for the fore and aft doors.)

Massive locking pins on aft door help ensure pressure vessel integrity. When loading passengers or cargo, pilot must make sure the rear door seal is not damaged and the door is locked properly.

Pilots with experience in Bonanzas or Barons should find the transition very easy. Pilots unfamiliar with these aircraft should find it a delightful experience. The 58P, while heavier and not quite as responsive as other Barons, shares the same well-harmonized and still very responsive controls.

The only time you have to work consciously to get the 58P to do what you want is during landing, particularly with little or no weight in the cabin. The 58P's weight bias is forward, and it takes a lot of trim plus effort to keep the airplane's nosewheel off the ground.

The gear is beefy, but the nose gear is the weak link. Repeated abuse can result in maintenance problems or mechanical damage. This (or the nose-heavy tendency) is not peculiar to the 58P, but it is a characteristic that requires awareness and operational care.

The fortunes—or vagaries—of weather and departure delays resulted in the first two legs being flown in what Snoopy calls "a dark and stormy night." The first approach was flown in poorer-than-forecast conditions of low ceiling and visibility with snow, turbulence and a long but contaminated runway. The second leg was even worse, with occasionally severe turbulence, multiple layers of ice and a line of thunderstorms at the destination for good measure. The only system we did not employ that night was the air conditioning. It is a tribute to the basic good flying qualities of the airplane, the layout of the cockpit and the performance of the systems that we completed the trip rather than divert.

Maximum operating altitude is 25,000 feet. Climb performance is good enough to use higher altitudes regularly for cruise. For most trips, we used a cruise climb power setting and 130 KIAS, with cowl flaps half open with an average rate of climb of slightly over 1,000 fpm.

At gross weight, maximum cruise

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BEECH BARON 58P

power (2,400 rpm/33 inches manifold pressure) produces speeds of from 216 knots at 12,000 feet to 241 knots at 25,000 feet. The fuel burn and the noise level at this power setting are high. We regularly used a lower setting that is between 60 and 65 percent power of 2,200 rpm/30 inches manifold pressure that results in lower noise level, an average of nearly another hour endurance with IFR reserves (approximately 5.5 hours versus less than 4.5) and true airspeeds of from 194 knots at 12,000 feet to 218 knots at 25,000 feet. Most trips were operated at 100 to 500 pounds below maximum takeoff weight of 6,200 pounds, so average true airspeeds were higher.

The combination of relatively high never exceed, maximum structural cruising and maneuvering speeds and maximum approach flap and gear extension speeds makes descent management an easy task while maintaining good engine operating temperatures. Speed management is good and can enable jet-speed approaches to be flown; yet patterns can be flown comfortably behind much slower aircraft.

With a trained pilot, the 58P has the systems and performance to fly the same missions as a turboprop.

Equipped to use the full capability of the design, there are many systems, operations and procedures the pilot must know completely. That is where training—initial and recurrent—comes in. Beech provides transition training to customers in a three-day program at the Beech training facility in Wichita. The ground school program covers all systems, procedures, performance, operational considerations and emergencies; a significant portion is devoted to the powerplants. School ends with a familiarization flight in the customer's aircraft during which all flight regimes and emergency procedures are covered. The program is available to owners and operators of used 58Ps for $565. It is well worth the fee.

The POH is very informative. It provides quite a bit of performance data that should be part of the manual for any piston twin, such as accelerate/go, single engine climb gradient and takeoff and landing data for grass fields. It also contains more information on general operating and safety considerations than most manuals.

In short, the 58P has a lot of capability and flexibility and provides competitive performance. Passengers can be very comfortably taken care of, even during long trips. There are a variety of interior arrangements available to make carrying a mix of people and baggage or cargo simple.

From the pilot's point of view, it can be a useful tool to accomplish a variety of missions and, thereby, satisfy the bean counters' requirements while giving us a lot of pleasure along with the transportation. □

Beechcraft Baron 58P

Base price $473,000

AOPA Pilot

Operations/Equipment Category*

All-weather $575,000 to $630,000

Specifications

Powerplant(s)	Two Teledyne Continental TSIO-520-WB, 325 hp @ 2,700 rpm/39.5 in mp
Recommended TBO	1,600 hr
Propeller(s)	Two McCauley constant speed, three blade, 78 in dia.
Recommended TBO	1,500 hr or every five years
Length	29 ft 11 in
Height	9 ft 2 in
Wingspan	37 ft 10 in
Wing area	188.131 sq ft
Wing loading	33 lb/sq ft
Power loading	9.5 lb/hp
Seats	6
Cabin length	12 ft 7 in
Cabin width	3 ft 6 in
Cabin height	4 ft 2 in
Empty weight	4,010 lb
Empty weight, as tested	4,391 lb
Max ramp weight	6,240 lb
Useful load	2,230 lb
Useful load, as tested	1,849 lb
Payload w/full fuel	1,090 lb
Payload w/full fuel, as tested	709 lb
Max takeoff weight	6,200 lb
Max landing weight	6,200 lb
Zero fuel weight	5,700 lb
Fuel capacity, std	1,032 lb (996 lb usable) 172 gal (166 gal usable)
Fuel capacity, w/opt tanks	1,176 lb (1,140 lb usable) 196 gal (190 gal usable)
Oil capacity, ea engine	12 qt
Baggage capacity	Nose: 300 lb, 18 cu ft Aft: 120 lb, 10 cu ft

Performance

Takeoff distance, ground roll	1,555 ft
Takeoff distance over 50-ft obst	2,643 ft
Accelerate/stop distance	3,300 ft
Accelerate/go distance	5,020 ft
Max demonstrated crosswind component	30 kt
Rate of climb, sea level	1,474 fpm
Single-engine ROC, sea level	270 fpm
Max level speed, 25,000 ft	261 kt
Cruise speed/Range w/45-min rsv, std fuel (fuel consumption, ea engine)	
@ approx. 77% power, best economy	
15,000 ft	222 kt/917 nm (118.2 pph/19.7 gph)
25,000 ft	241 kt/1,013 nm (111 pph/18.5 gph)
@ approx. 62% power, best economy	
15,000 ft	201 kt/1,107 nm (87 pph/14.5 gph)
25,000 ft	218 kt/1,170 nm (86 pph/14.3 gph)
@ approx. 53% power, best economy	
15,000 ft	185 kt/1,200 nm (74 pph/12.3 gph)
25,000 ft	202 kt/1,235 nm (74 pph/12.4 gph)
Max operating altitude	25,000 ft
Single-engine service ceiling	13,490 ft
Landing distance over 50-ft obst	2,427 ft
Landing distance, ground roll	1,378 ft

Limiting and Recommended Airspeeds

Vmc (Min control w/ critical engine inoperative)	81 KIAS
Vsse (Min intentional one-engine inoperative)	87 KIAS
Vx (Best angle of climb)	95 KIAS
Vy (Best rate of climb)	115 KIAS
Vxse (Best single-engine angle of climb)	102 KIAS
Vyse (Best single-engine rate of climb)	115 KIAS
Va (Design maneuvering)	170 KIAS
Above 23,000 ft	161 KIAS
Vfe (Max flap extended) Approach (15 deg)	177 KIAS
Above 21,000 ft	162 KIAS
Vle (Max gear extended)/ Vlo (Max gear operating)	177 KIAS
Above 21,000 ft	162 KIAS
Vno (Max structural cruising)	196 KIAS; (Reduce 4 kts per 1,000 ft above 16,000)
Vne (Never exceed)	235 KIAS (Reduce 5 kts per 1,000 ft above 16,000)
Vr (Rotation)	81 KIAS
Vs1 (Stall clean)	84 KIAS
Vso (Stall in landing configuration)	78 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.

**Operations/Equipment Categories are defined in June 1984 Pilot, p. 108. The prices reflect the costs for equipment recommended to operate in the listed categories.*