



The Baron's reign

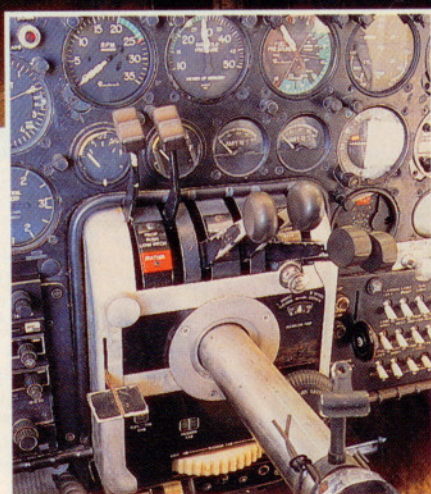
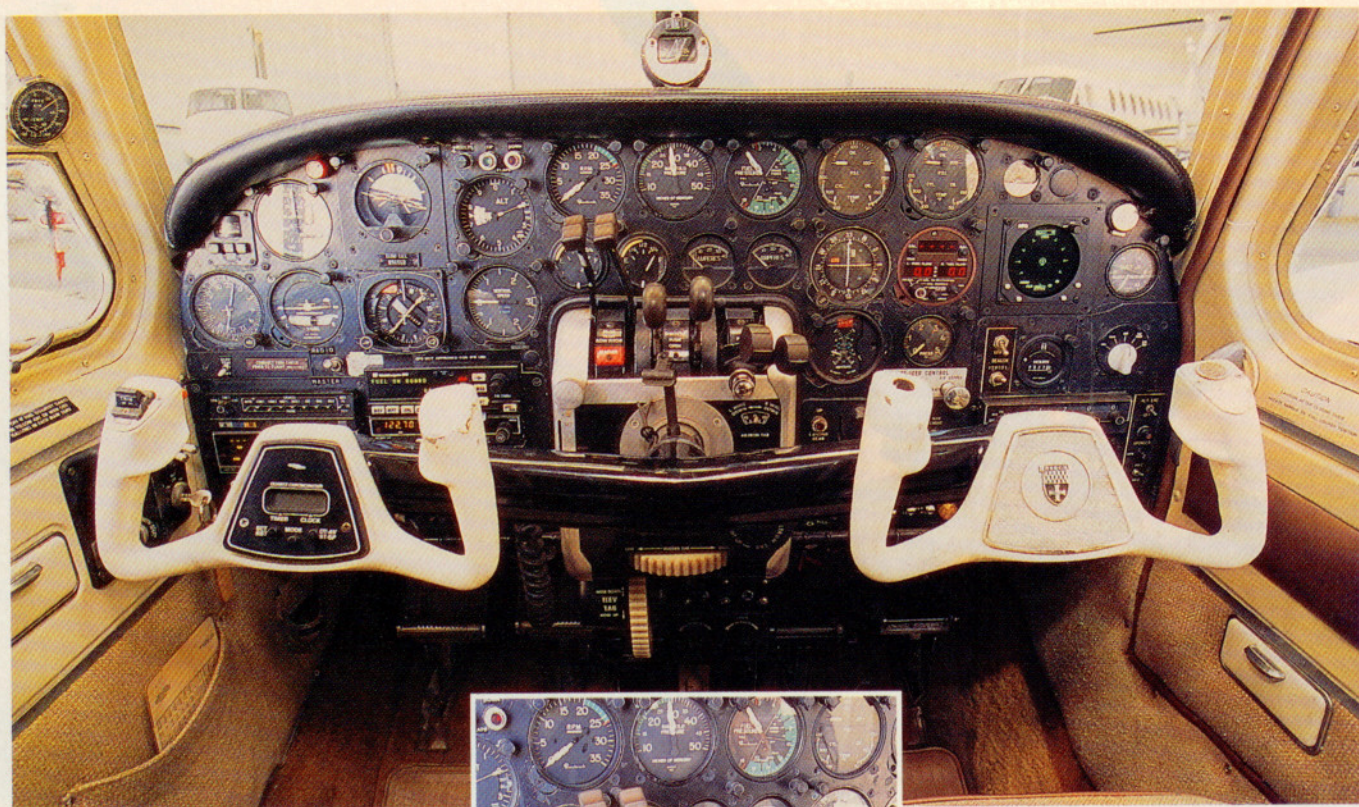
First and latest Barons meet at their birthplace

BY PETER A. BEDELL
PHOTOGRAPHY BY MIKE FIZER

If the true test of a design's success were longevity, then Raytheon's Beech Baron would represent the epitome of a successful design. Continuous production of the light twin has soldiered on for 40 years, likely the longest-running production line of any twin.

During those years the Baron has become known as a no-compromises light twin, possessing a unique combination

of speed, load-carrying ability, short-field prowess, and handling attributes that will please even the most demanding pilots. Private owners, charter companies, and cargo operators all recognize the many desirable qualities that the type possesses. Naturally, the Baron has undergone significant changes over the past four decades, but the basic design and crisp handling remain unchanged.



A massive control column and random panel layout is an early Baron trait (this page). Today's airplane (right) is far more capable, elegant, and ergonomically correct.

On September 10, Raytheon hosted a small event for the approximately 130 workers at its number-two plant at Beech Field in Wichita. At the center of the festivities were TC-1, the prototype Baron, a 1961 Beech Model 95-55, and TH-2000, the two-thousandth Model 58, which recently rolled off the production line at Raytheon. Of course the owners of both airplanes were on hand at this unique gathering of old and new. Frank Kimmel flew TC-1 from his hometown of Greenwood, Mississippi, for the event, while David Scott, his wife, Lori, and daughter, Madison, came in from Omaha, Nebraska, to receive their new Baron 58.

Although 40 years separate the two airplanes, the mission is still the same. Both owners fly their airplanes for business and personal use. Kimmel, a 10,000-hour pilot, uses TC-1 to meet with clients of his aviation insurance business. Kimmel Aviation Insurance Agency specializes in coverage of aerial application companies in the South.

Scott is a private pilot and self-proclaimed aviation nut. Although Scott has the means to ride in turbine equipment, he chooses to stay low and savor the joy that personal flying brings him. "When I ride in corporate jets, I always find myself wanting to sit up in the jump seat or anywhere near the pilots," he said.

While each Baron's mission is the same for both customers, the equipment lists of the two airplanes show how much the design has matured in the past 40 years. Avionics, for example, weren't nearly as important to customers in the 1960s. Today, they are considered an integral part of the airplane. TH-2000 is equipped with a combination of Garmin and Honeywell's latest avionics, flight control system, and weather avoidance gear. All of the controls and instruments are logically arranged in a professional and aesthetically pleasing instrument panel.

TC-1 has a comparatively haphazard layout typical of an early 1960s' design. Avionics have been relegated to the lower-left corner of the panel where space is seriously limited. When it left the factory there was no such thing as moving maps or satellite navigation. No sir, the state of the art was a pneumati-

cally driven (via the vacuum pumps) two-axis Tactair T-3 autopilot, two nav/coms, and an ADF. There were five avionics packages offered from the factory from companies such as Motorola, Aircraft Radio Corporation (ARC), Narco, Collins, and King. While the majority of the avionics in TH-2000 are panel mounted, TC-1's original ARC radios (long since removed) were remote mounted. Control heads resided in the panel but the brains of the radios—vacuum tubes and all—were taking up baggage space in the nose of the Baron. A transponder wasn't even mentioned nor was weather radar. In addition, these were heavy radios; each nav/com's transmitter, receiver, rack, and control unit combination weighed in at nearly 25 pounds.

TC-1's landing gear and flap switches are arranged in what is now considered a nonstandard layout. The gear switch is on the right side of the power quadrant and the flap is on the left. Likewise, within the power quadrant, the throttle and propeller controls are swapped with the prop controls on the left and the throttles in the middle.

I'm happy to report that TC-1, which bears the registration N9695R, is still as



much fun to fly as any Baron. The control feel remains perfectly crisp and the controls are rigged nicely. Performance was right on target with the original pilot operating handbook. On an evaluation flight at a density altitude of 7,300 feet, the old Baron cruised at 184 knots true at approximately 75-percent power. The original 95-55 (so designated because the Baron was an offspring of the Model 95 Travel Air) is powered by 260-horsepower Continental IO-470 engines. The subsequent A55 and B55 models were also powered by the IO-470. The B55 continued production until 1982.

In the early years Beech was always tinkering with the Baron and created some successful and not-so-successful versions of the type. For the 1966 model year, Beech introduced the C55, which sported an extended nose and 285-hp Continental IO-520 engines. The D55 (1968) and E55 (1970) marked incremental improvements in the IO-520-powered 55s, which continued production alongside the B55 until 1982. Between 1967 and 1971, Beech built the 56TC Turbo Baron that used mammoth 380-hp Lycoming TIO-541 engines, which were also used on the Beech Duke.

In 1970, the Model 58 was introduced, featuring the 285-hp IO-520s and an elongated cabin with huge cargo doors. Turbocharged (58TC) and pressurized

(58P) versions were introduced in 1976 and ended production in the mid-1980s. Naturally, many improvements have been made to the 58 over the years, the most significant of which took place in 1984. At that time Beech performed a major overhaul of the panel and changed the switch/throttle layout to conform to the norm for light twins. This was also the first year that the 300-hp IO-550s were used on the Baron.

Today, the Baron 58 utilizes 300-hp Special Edition Continental IO-550 engines. The Special Edition engines are rebadged versions of Continental's Platinum engine, which are blueprinted and balanced to significantly improve the smoothness and performance of Barons built since 1999. Owners of new Barons consistently report cruise speeds in excess of 200 KTAS.

Like most new airplanes, however, the new Barons lack the useful load of their forbearers. While older airplanes are capable of carrying 2,000 pounds of people, bags, and fuel, TH-2000 has a useful load of only 1,472 pounds. Of course, the luxury interior, known-ice certification, air conditioning, and mile-long option list take a toll on the useful load. In addition, the new Baron holds 60 to 88 more gallons of fuel than the original airplane's 106 usable gallons, allowing pilots to choose between payload or bladder-busting range.

Barons, especially the earlier models, have tremendous short- and rough-field takeoff and landing ability. The C, D, and E55s are capable of hauling a full load up and over a 50-foot obstacle in less than 1,000 feet. Although you won't likely see any of the fancy new Barons used in such a way, Kimmel often operates N9695R in and out of the same dirt and grass runways that his spray pilot customers use. It should be noted that published takeoff data for the early Barons was demonstrated with little regard to V_{MC} , the airplane's minimum control speed with the critical engine windmilling. In the early 1980s, Beech distributed to all Baron owners new flight manuals that included far more conservative takeoff data and implemented a minimum safe single-engine speed (V_{SSE}).

While the handling characteristics of the Baron are hailed as being among the best in certified aircraft, the design has been criticized for having untoward single-engine stall characteristics. Unrecoverable flat spins can be entered in such situations and have led to several fatal accidents, mostly during training flights. A few years ago, Raytheon spun a B55 more than 100 times and confirmed that if the airplane was fully established in a spin (four to five turns), ordinary anti-spin control inputs may be ineffective. Frankly, no pilot should allow such an airplane to get so precariously slow





To create the 58, Beech stretched the 55's fuselage 10 inches and relocated it farther forward on the wing. This brought a larger cabin and better loading characteristics with reference to CG. Frank Kimmel (opposite page) brought TC-1 to the factory where David Scott (above) received delivery of TH-2000 with his wife, Lori, and daughter, Madison.

in a V_{MC} configuration—even in the name of training. As far as fatal accidents go, the Baron's rate is on par with that of other light twins. A large number of gear-up incidents have been attributed to pilots confusing the landing gear and flap switches.

Part of the reason for the low accident rate is the huge number of Barons that have been produced. While the perception is that Barons are involved in more accidents, the size of the fleet brings the percentage to a level on par with other light twins. Although TH-2000 is emblazoned with "2000th Baron" on its unique paint job, that figure is somewhat misleading; it is the 2,000th Model 58. There were 3,654 Model 55s (including the military T-42) produced between 1961 and 1982. Add to that the more than 700 turbocharged and pressurized Barons that were built during the 1960s, '70s, and '80s. In total there have been nearly 6,500 Barons produced.

Back to that unique paint job on TH-2000: Despite the love/hate relationship that viewers have of it, the scheme demonstrates the latest in paint technology. The colors are from PPG's Harlequin line, which actually changes colors depending on the angle at which they

are viewed. As you walk around the airplane focusing on one area, the color changes dramatically. One spot changes from cyan to magenta, then to blue, black, and purple as you walk from nose to tail. So-called ChromaFlair flakes embedded in the finish create the distinctive color shifts. Unlike typical flakes in metallic paint, ChromaFlair particles work like prisms to reflect specific wavelengths of light. Unfortunately, you can't experience the total effect by gazing at the pictures accompanying this article.

The interior continues the morphing-color motif with materials that drew comments ranging from "groovy" or "gaudy" to "cool" or "futuristic." Design Tex's One Plus One division supplied the Presto-Change-O brand of color-changing vinyl, which is used in the trim and seat piping. Ironically, the actual names of the materials are the adjectives often used to describe how they look. Groovy Baby, Oh My Stars, and Egads are just some of the fabric names used in TH-2000. Even the control yokes are covered in the color-changing Presto-Change-O vinyl. In the panel resides a Baker CD/DVD player that provides audio and video entertainment to the Baron's rear-seat passengers via a small liquid-crys-

tal display perched atop the stowable writing table.

TC-1 left the factory with a typical 1960s'-era three-color paint job featuring white, gold, and robin's-egg blue. How do we know? N9695R was shown in the brochure for the 1962 A55. Kimmel secured a copy of the brochure so that he knew what his airplane looked like in its birthday suit. Besides the different paint job, TC-1 had a stubbier nose cone in which the heater inlet surrounds the nose-mounted taxi light. It also had stubbier propeller spinners and deice boots. The boots were removed at the

recent paint job because they no longer worked. In addition, the boots used a medicine-ball-sized accumulator that is obsolete and takes up valuable luggage space in the nose.

N9695R was owned by Beech until about 1968 or 1969, when it was sold at a reportedly low price to KJRG, a radio station in Newton, Kansas. Carl Weaver was a broadcast engineer at the station who used TC-1 to transport equipment and engineers throughout Colorado, Nebraska, and Kansas. Weaver, who later went into aircraft sales, ended up brokering the airplane in its next sale to Hes-



ston College in the early 1980s. Hesston used the airplane for multiengine instruction. In fact, two current AOPA employees, Rob Hackman and Randy Kenagy, spent many hours giving dual in N9695R at Hesston College. Weaver again brokered the airplane to Kimmel in 1995.

Kimmel has made some strides in returning the airplane to its original condition. At one point TC-1's windshield was replaced with a one-piece sloped windshield like that in newer Barons. Kimmel changed it back to the old two-piece style. Kimmel contemplated out-

Delta NOW OWNS COMAIR

Your Best Path To The Airlines Is COMAIR.

After nearly a decade of partnerships, Delta Air Lines recently purchased COMAIR. Now, Comair Aviation Academy has become the only flight training facility that is owned by a subsidiary of a major airline. The simple fact is that we have the pilot positions and resources no other school can offer. That's great news for you!

FLY FOR THE BEST

Delta Air Lines was named "Major Airline of the Year for 1999" by *Air Transport World* magazine and "Best Managed Major Airline for 1999" by *Aviation Week & Space Technology* magazine. COMAIR was also named "Regional Airline of the Year for 1999" by *Air Transport World* magazine and "Best-Managed Regional Airline for 1999" by *Aviation Week & Space Technology*. Delta operates 5,395 flights each day to 363 cities in 60 countries. COMAIR operates the world's largest fleet of Canadair Jets and provides service to 7 million passengers per year to over 100 cities in 3 countries, and employs over 4,500 throughout its system.

*As of January 2000

- ◆ 97% of our graduates** are hired by airlines as First Officers.
- ◆ Our graduates are GUARANTEED A JOB INTERVIEW WITH COMAIR.
- ◆ Many financing programs are available for those who qualify.
- ◆ Airline-paid First Officer training (value over \$13,000) upon being hired by COMAIR.
- ◆ Call to arrange a tour of our Academy. Complimentary travel on Delta or COMAIR provided.

Call today

1(800) U-CAN-FLY

Delta COMAIR



** 469 of 482 students who completed the entire program through 1/2000, COMAIR hires Comair Academy graduates.

Earn a College Degree:

Comair has joined forces with these renowned universities

- 2 yr. Associates Degree
Broward Community College-Ft. Lauderdale, FL
- 4 yr. Bachelor Degree
Jacksonville University-Jacksonville, FL

International Students:

Call us FREE Today from:

- Brazil - Dial 000811-005-6817
- Canada - 866-266-0650
- Chile - Dial 800 800 311, at tone dial 866-269-3341
- Mexico - Dial 01 800 288 2872, at tone dial 866-269-3340
- South Africa - Dial 0800-996-762
- United Kingdom - Dial 0800-085-8610

Attention Pilots:

NOW HIRING!

Interview today for immediate job openings as a First Officer. Call The Airline Training Department for details.

1(888)886-1104

CALL: 1(800)U-CAN-FLY

FAX: (407)323-3817

Web Site: <http://www.ComairAcademy.com>
E-Mail: info@ComairAcademy.com

Comair
-AVIATION ACADEMY-

2700 Flight Line Avenue
Sanford, FL 32773

Airline Owned and Operated by
COMAIR
▲ Delta Connection

WRITE IN NO. 8 ON READER SERVICE CARD



The earliest Barons have only five seats and no baggage area behind the rearmost seats (above). The 58's interior (left) can be arranged in a club configuration or straight seating by simply turning around the seats in the middle row. The 58's giant double doors are a big advantage compared to the 55's small baggage door. Note TH-2000's "groovy" interior—carpet and all—that appears to change color depending on the angle at which it is viewed.

teristics were explored. There were many entries labeled "rudder power" checks, which likely had to do with testing the all-new swept tail that the Baron had. The airplane went to Phoenix for "hot weather testing." On March 20, with only 82 hours, the baby Baron got new engines, although there was no mention as to why. On April 7, the airplane received its airworthiness certificate. Over the next several years, the airplane was taken in and out of the experimental category as Beech tested and certified different equipment in the airplane. By the end of the 1960s, N9695R must have been the

old girl on the flight line as it didn't seem to fly much between annual inspections.

i Links to additional information about the Raytheon Beech Baron may be found on AOPA Online (www.aopa.org/pilot/links.shtml).

Not surprisingly, that's when the airplane sold. Today, the airplane has nearly 7,000 hours.

Hopefully, decades from now we can hope TH-2000 will have accumulated a similarly glorious history.

We can hope that 40 years from now TH-2000's owners will talk as highly of it

Follow Your Dreams



Learn to Fly



"I began my flight training at Gulfstream Academy 26 months ago, today I am a Beechcraft 1900 Captain with Continental Connection. From Zero time to Captain in two years and two months!"

Don McCormick,
Beechcraft 1900 Captain

Professional Pilot Training Course

Join a flight school that can take you from your first flight to an airline job in 10 months.

First Officer Program

Accelerate your career in our First Officer Program, log 250 hours as a paid Beechcraft 1900 First Officer. Guaranteed!



**GULFSTREAM ACADEMY
OF AERONAUTICS**

<http://www.GulfstreamAcademy.com>
Toll Free:(877) 359-4853 • Fort Lauderdale, FL

fitting the airplane with the original radio equipment but soon realized that doing so would make the airplane impractical for modern IFR flight. Kimmel also couldn't bring himself to copy the original paint scheme when it was time for repainting.

Thumbing through TC-1's stack of logbooks is an interesting experience. On February 29, 1960, S. Little piloted the first flight. J.D. Webber, who performed, among other things, a "sound-level survey," made six test flights on March 1. On March 3, stalls and single-engine charac-

SPECSHEET

1961 Beech Baron 95-55

Standard price: (1961) \$58,250 (approx. \$340,000 in 2000 dollars);

Typically equipped: (1961) \$81,550 (approx. \$476,000 in 2000 dollars); Current market value: \$85,500

Specifications

Powerplant...Continental IO-470-L rated at 250 hp
Seats5
Useful load, as tested1,612 lb
Payload w/full fuel, as tested976 lb
Maximum takeoff weight4,880 lb
Maximum landing weight4,880 lb
Fuel capacity, std112 gal (106 gal usable)
672 lb (636 lb usable)
Baggage capacity(nose) 270 lb, 12 cu ft
(aft) 270 lb, 33.5 cu ft

Performance

Takeoff distance, ground roll910 ft
Takeoff distance over 50-ft obstacle ..1,700 ft
Rate of climb, sea level1,630 fpm
Single-engine ROC, sea level350 fpm
Cruise speed/endurance w/45-min rsv, std
fuel (fuel consumption, ea engine)
@ 75% power, best power 7,000 ft
.....185 kt/3.2 hr
(81 pph/13.5 gph)
Service ceiling.....19,200 ft

Single-engine service ceiling7,600 ft
Landing distance over 50-ft obstacle ..1,470 ft
Landing distance, ground roll1,250 ft

Limiting and Recommended Airspeeds

V_{LO} (max gear operating)130 KIAS
 V_{NE} (never exceed)224 KIAS
 V_{S1} (stall, clean)75 KIAS
 V_{SO} (stall, in landing configuration)
.....66 KIAS

2001 Beech Baron 58

Price typically equipped: \$1,050,000

Specifications

Powerplant...Continental IO-550-C rated at 300 hp
Seats6
Useful load, as tested1,472 lb
Payload w/full fuel, as tested478 lb
Maximum takeoff weight5,500 lb
Maximum landing weight5,400 lb
Fuel capacity, std172 gal (166 gal usable)
1,032 lb (996 lb usable)
Fuel capacity, w/opt tanks200 gal
(194 gal usable)
1,200 lb (1,164 lb usable)
Baggage capacity(nose) 300 lb, 18 cu ft
(aft) 120 lb, 10 cu ft

Performance

Takeoff distance, ground roll1,400 ft
Takeoff distance over 50-ft obstacle ..2,300 ft
Rate of climb, sea level1,735 fpm
Single-engine ROC, sea level390 fpm
Cruise speed/endurance w/45-min rsv, std
fuel (fuel consumption, ea engine)
@ 75% power, best power 7,000 ft
.....201 kt/4.3 hr
(98 pph/16.4 gph)
Service ceiling20,688 ft
Single-engine service ceiling7,400 ft
Landing distance over 50-ft obstacle ..1,950 ft
Landing distance, ground roll1,500 ft

Limiting and Recommended Airspeeds

V_{LO} (max gear operating)152 KIAS
 V_{NE} (never exceed)223 KIAS
 V_{S1} (stall, clean)84 KIAS
 V_{SO} (stall, in landing configuration) ..73 KIAS

For more information, contact Raytheon Aircraft Company, Post Office Box 85, Wichita, Kansas 67201; telephone 316/676-7111; or visit the Web site (www.raytheon.com/rac/). 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.

as Kimmel, Weaver, and the others do about TC-1. Will the Baron design continue in production for another 40 years? Pretty unlikely. Then again, I bet

the engineers who designed the Baron in the 1960s never thought it would be in production into the twenty-first century.

ACPA

Peter A. Bedell, AOPA 1136339, is a regional airline captain and is a former technical editor of AOPA Pilot. He is part owner of a Beech Baron.