KING OF THE KING AIRS

The Model 350 takes its place at the head of the line.

BY RICHARD L. COLLINS

THE *Beechcraft King Air is one of the most successful shapes ever to fly. It is used by businesses and charter services, large and small, around the globe. Versions of the King Air fly for all the U.S. armed services—it is the only airplane type in use by every branch—as well as for governments all over the world. A King Air has flown as Air Force One,*

PHOTOGRAPHY BY MIKE FIZER

and today, King Airs account for more than 90 percent of new twin-turboprop sales in the United States.

Despite the appearance of an all-new Beechcraft twin turboprop, the Starship, there is a fresh version of the King Air that many contend is the ultimate refinement of the aircraft. Compared with the previous top of the line, the Model 300, the Super King Air 350 is longer, has winglets, seven big cabin windows on each side (instead of five) and more wingspan, and is a big step up in comfort. When it goes into full production—deliveries begin in early 1990—the 350 will replace the 300.

Compared with the basic King Air, the C90A, the new 350 might be called twice as much. Where the 90 offers club seating for four passengers, the 350 offers double club seating for eight, with more legroom between the seats than in

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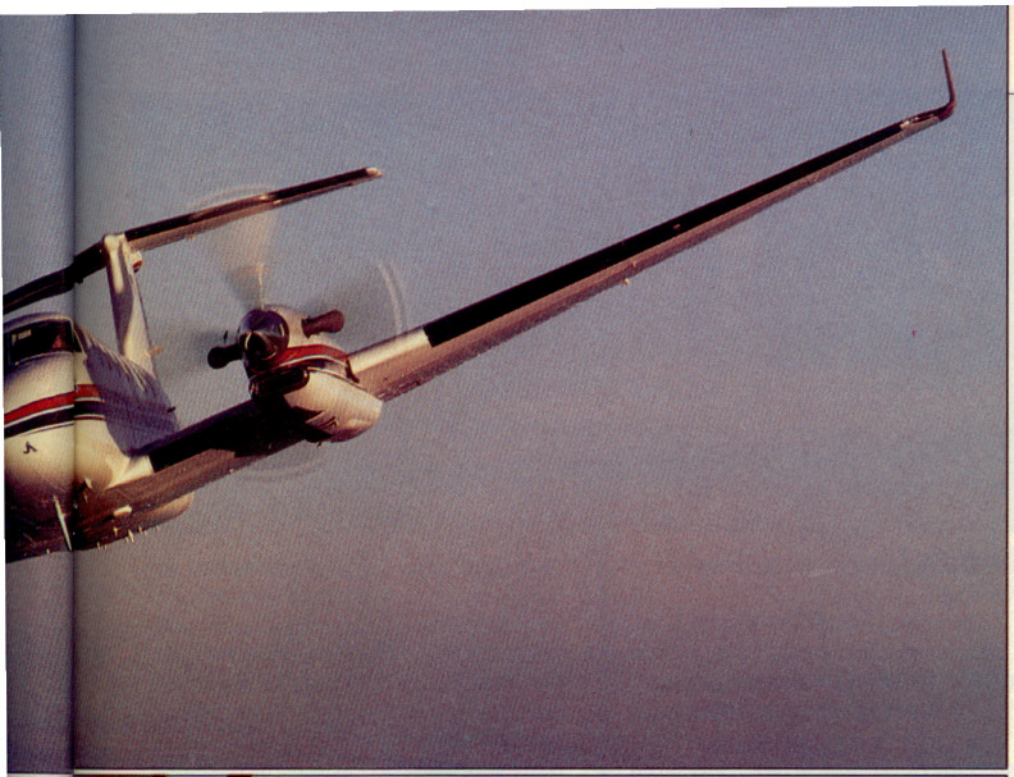
any previous model. The cabin volume is 50 cubic feet greater than the 300's. Despite the larger size of the 350 and the fact that the airplanes use the same 1,050-shaft-horsepower Pratt & Whitney PT6A turboprop engines, good attention to aerodynamics has resulted in performance equal to or better than that of the 300 in every area (at equivalent weight—14,000 pounds). The 350 has a 15,000-pound maximum takeoff weight, 1,000 pounds greater than the 300.

Since it was introduced more than 25 years ago, the King Air has sold very well despite continuous questions about the relationship between price and performance. The 350 flown for this report, for example, had a sticker price in excess of $4 million with its complete array of options. In addition to two faster turboprops, the Starship and the Avanti, there are three jets in that price neighborhood:



the Beechjet 400A, the Lear 31, and the Citation V. The jets are from 120 to 150 knots faster than the venerable King Air.

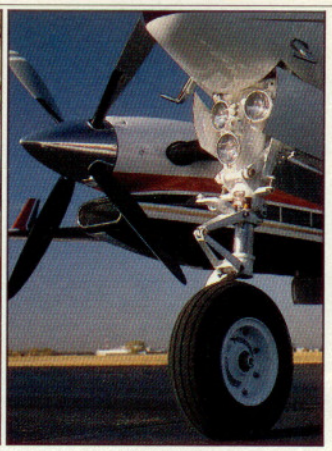
So who buys King Airs? Most are flown by companies that need short- and long-hop versatility. A standard-equipped King Air 350 can leave with all the seats full, the baggage areas full, and the tanks full and still have almost 200 pounds of weight-carrying ability left over for options or tubby passengers. Full tanks are good for a lot of flying, as the airplane holds 3,611 pounds of fuel. So a corporate operator doing business in one section of the country, such as the Southeast, can launch a King Air 350 at daybreak, sending a number of people to different places to run the appropriate traps, making multiple stops, probably without need to refuel during the day. The leg times on the relatively short hops would be little more than in a faster jet or turboprop.

Even though its cabin is luxurious, the King Air 350 exudes the aura of a working airplane, one that not only hits the major terminals with pin-stripe suits aboard but that also spends a lot of time flying hard-hats to and from small county airports. It has the range to make those long hops when required. And while the King Air offers the modest image of being a propeller airplane, it also has the appearance of a large airplane. You climb stairs to get into a King Air.

The King Air flight deck is large, with comfortable seats for the pilots and a panel and console that hold everything, including, in this airplane, a flight management system mounted in the console. Pilots is plural in the 350, as this will be the first King Air requiring a crew of two because it is being certified for a total of more than nine passenger seats. The captain also has to be type rated. Beech will be pursuing single-pilot approval for the airplane when it is fitted with nine or fewer passenger seats.

The visibility out of a King Air is excellent, but on the 350, you have to be aware of the greatest King Air span ever, almost 58 feet, when taxiing.

On takeoff, the power comes up smoothly as the power levers are advanced, with 88-percent torque the target power setting at the beginning of the takeoff roll. Rotation speed is about 105 knots, depending on weight, and as soon as you take a 350 flying, you get the feel of a new airplane. The handling qualities have been well-tweaked, and roll control is both crisp and precise. Pitch control is right, too, with an almost



perfect balance of forces between pitch and roll.

Climbing out of the Atlanta terminal area headed for Kansas City, Missouri, with 160 knots for the cruise climb, we made Flight Level 310 in 30 minutes. It could have been quicker at lower climb speeds; out of FL290, we were asked by the controller for an expedited climb to 310, and with the airspeed back at 120 knots, the airplane climbed smartly to that altitude.

King Air 300 pilots will notice that the flight deck of a 350 is a bit noisier. This is because the 34-inch fuselage stretch moves the pilots 14 inches closer to the prop arcs, which is where a lot of the noise comes from. This first production airplane also had a defog system for the side windows that wasn't silent.

We had some restless passengers in the back who managed, during the course of the flight, to sample every seat in the airplane. No real sweat, because the King Air 350 has one of the largest center of gravity ranges of any general aviation airplane, and only slight trimming was necessary as they moved fore and aft in the rear.

Cruising at FL310, with the temperature about 10 degrees above standard and with maximum cruise power for the altitude and temperature, we were clocking about 280 knots true airspeed on a fuel flow of 550 pounds per hour. Atlanta to Kansas City is a longer than average hop for a turbine business airplane at about 600 nautical, and the leftovers were impressive. The flight management system projected our remaining range after reaching Kansas City as more than 1,100 nm. Additionally, though there were five of us along, we could have departed with five more people with everyone in a roomy and comfortable seat. There's a belt on the john, and two additional jump seats are available with the double club arrangement, bringing the maximum passenger capacity to eleven, plus two crew in this cabin configuration.

Our descent into Kansas City was started early enough by air traffic control that it wasn't necessary to rush downward to make the crossing restriction at the Hakin intersection. After that, the airspeed was kept away from the maximum because it was windy down low with wind shear alerts, so considerable turbulence was anticipated.

Down in the bumps came proof of a nice-riding airplane, even in relatively adverse conditions. The reference speed for the final approach to Kansas City Downtown Airport was calculated as 105 knots; 10 were added for the wind shear alert. There is little pitch change with flaps and gear extension, and the 350 comes on as a friendly airplane even with a lot of low-level chop and a strong 30-degree crosswind on the runway.

Some King Airs have used small tires, some big tires. The 350 has an in-between compromise on tire size. This is pertinent on landing because it has always been difficult to make a really good landing in a King Air with small tires. The 350's medium tires and responsive pitch forces make it one of the nicest of all to land, and 2 hours 25 minutes after leaving Atlanta, we had a satisfying arrival in Kansas City. The airplane then went to St. Louis and back on another mission before finishing its day with a hop home to Wichita.

The passengers reported that the cabin was quiet and comfortable, with the best seats in the house being those farthest aft. After reaching Kansas City, I left the airplane and got to sample the other mode of travel to get back to Atlanta to retrieve my airplane. On a 737, it took almost two hours at a cruising altitude of FL330, and it resulted in the worst ear discomfort I have had in years. Clearly, the King Air's pressurization system is better.

Maybe the Super King Air 350 is a derivative of a relatively old design, but it is as capable and competitive today as 25 years ago, and the King Air will likely be on the Beechcraft production line for a long time to come. □

Beechcraft Super King Air 350

Base price: $3,753,600

Specifications

Powerplants	two Pratt & Whitney PT6A-60A, 1,050 shp
Recommended TBO	2,500 hr
Propellers	Hartzell four-blade, full-/auto-feathering, 104-in diameter
Length	46.7 ft
Height	14.5 ft
Wingspan	58 ft
Wing area	310 sq ft
Wing loading	48.4 lb/sq ft
Power loading	7.14 lb/hp
Seats	13 maximum
Cabin length (excluding pilot's compartment)	19.5 ft
Cabin width	4.5 ft
Cabin height	4.75 ft
Empty weight	9,051 lb
Max ramp weight	15,100 lb
Max takeoff weight	15,000 lb
Useful load	6,049 lb
Max landing weight	15,000 lb
Zero fuel weight	12,500 lb
Fuel capacity, std	539 gal usable 3,611 lb usable
Baggage capacity	550 lb, 53.5 cu ft

Performance (preliminary)

Balanced field length, 14,000-lb takeoff weight	3,680 ft
Rate of climb, sea level, 14,000 lb	2,979 fpm
Single-engine ROC, sea level, 14,000 lb	912 fpm
Cruise speed/endurance w/45-min rsv, std fuel @ max cruise power 28,000 ft	310 kt/4.7 hr
@ max range power 35,000 ft	237 kt/8.3 hr
Max operating altitude	35,000 ft
Single-engine service ceiling, 14,000 lb	24,150 ft
Landing distance over 50-ft obstacle, 14,000 lb	2,508 ft
Landing distance, ground roll	1,272 ft

Limiting and Recommended Airspeeds

Vmc (min control w/critical engine inoperative)	94 KIAS
Vx (best angle of climb)	125 KIAS
Vy (best rate of climb)	140 KIAS
Vyse (best single-engine rate of climb)	125 KIAS
Va (design maneuvering)	184 KIAS
Vfe (approach flaps extended)	204 KIAS
Vfe (full flaps extended)	158 KIAS
Vle (max gear extended)	184 KIAS
Vlo (max gear operating), retract	166 KIAS
Vno (max structural cruising)	260 KIAS
Vne (never exceed)	260 KIAS
Vs1 (stall, clean)	96 KIAS
Vso (stall, in landing configuration)	81 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. □