



# Turbines on the Package Plan

*Rockwell's Turbo Commander 690B Executive I  
Is Ready to Fly Right Out of The Factory*



# Turbines

It sure doesn't go like the economy model. There's an enormous pressure at your back as the power levers (just like throttles, to be simple) are advanced. Just get the turbine inlet temperature (TIT) to 850°C and forget it (923°C is max)—you'll have over 700 hp per side.

George Frizzell, our check pilot and Rockwell's manager of distributor sales for the Western United States, had bet we would be through  $V_{mc}$  (83 knots) and  $V_{sse}$  (95 knots) before we knew it.

We were ready for him, but, sure enough, the airplane was already a mile ahead of us before we were well and truly flying. We managed to find the gear handle and tuck the wheels away by the time the airplane passed  $V_{yse}$  (125 knots) and began to catch up to the cruise climb of 139 knots.

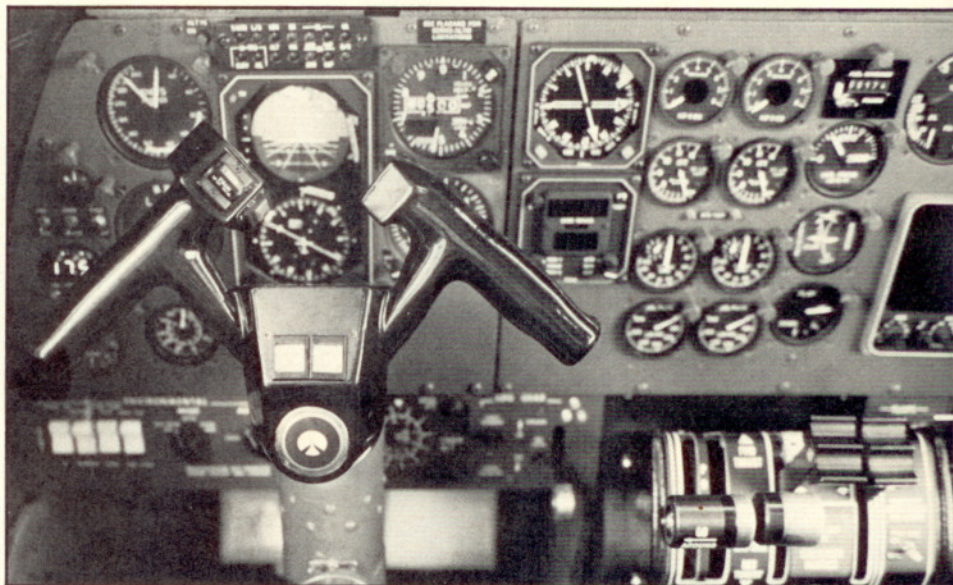
The crew sits at the front end of the long fuselage, well ahead of the wing and the propeller arc. Visibility is superb, and it's quiet. We were at gross for our first leg, with five on board and

full fuel. But with those turbine engines and big, straight wings the 690B was completely untroubled getting all 10,325 pounds off and flying in a big, smooth rush.

This is big-time, serious flying, but it is also fun flying. Later, trying some maximum performance takeoffs, the aircraft produced deck angles so steep that we felt more as though we were going up for a hammerhead than climbing out in a businessman's express. Climb rate exceeded 2,500 fpm.



*Pilots will appreciate the well-appointed, roomy cockpit that includes flight director and "veddy British" ram's horn control yoke.*





Behind the divider, the passengers had their briefcases out and were working in the long, plush cabin, just as people are supposed to do in this kind of machine, unaware of the good times in the cockpit.

This was our first look at Rockwell's price competitor in the turboprop market, which was introduced at the National Business Aircraft Assn.'s annual meeting last September. Most purchasers of turbine aircraft have a lot of choosing to do to outfit their "green"

airplanes—interior decor and seating arrangements, avionics equipment and other accessories are selected and installed to customer order. Finishing such airplanes is a big business, and a time-consuming process.

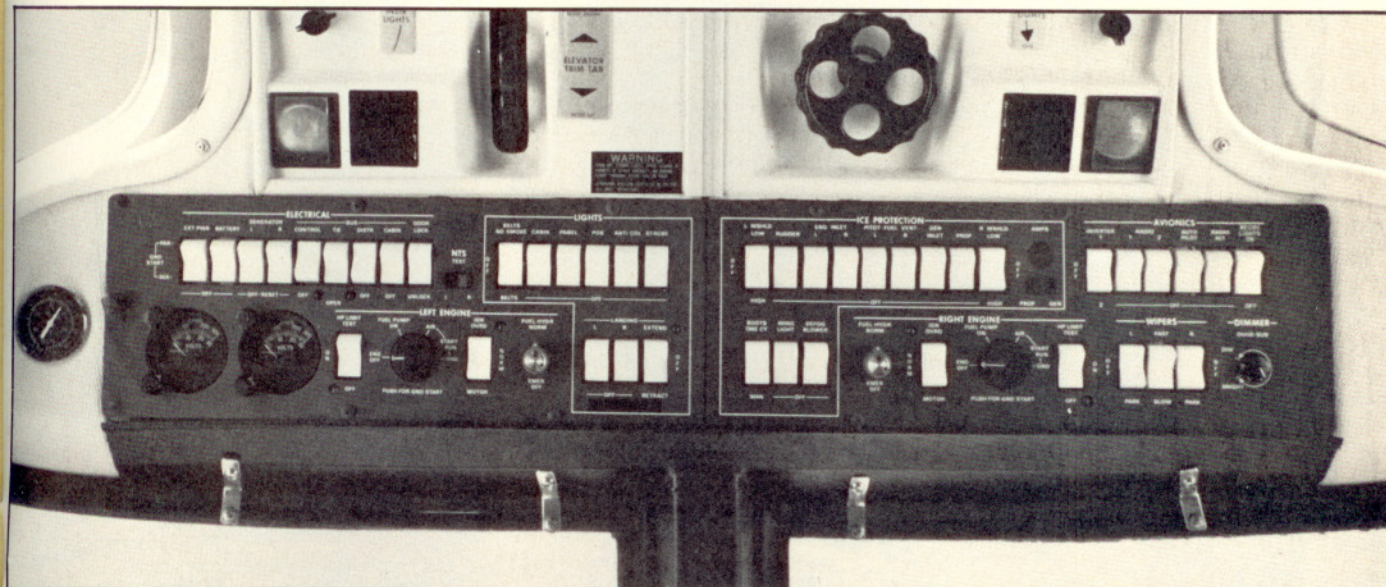
Outfitting a new aircraft properly can be a bewildering thicket for first-time buyers. While there are standard arrangements for many models, few finished airplanes conform to the standard.

Rockwell is happy to sell you a 690B

either way: Buy the Executive I, where decisions are limited to King or Collins avionics packages, two seating arrangements and color selections, or the Executive II (base price \$699,500), a green airplane to which you can fit an almost-infinite number of options.

The Executive I version is equipped with just about everything needed to go when you feel like it. The aircraft we flew, N57198, is Collins-equipped complete with a big FD-112V Flight

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Director and a Bendix RDR-1200 radar system. (All versions are fully equipped for flight into known icing.) It's a turboprop you really can fly away from the factory with minimum decisions and no additional downtime for completion. And it doesn't *look* like an economy model, either. The manufacturer claims that the package plan, or standardization, can save a buyer an average of \$80,000 over a custom-fitted model.

It might seem ridiculous to call such a large, high-performance, all-weather airplane simple, but it is. Simple enough to be considered an owner-flown airplane, even though most are operated by professionals and most of them with a copilot.

Frizzell says that it usually takes from 50 to 100 hours for a pilot without turbine, big airplane experience to be really competent and comfortable in the airplane, depending on previous experience. There are a lot of systems—and the checklists are long. But a competent and conscientious owner-pilot could go to the factory school (there's one for maintenance people as well as flight crews).

For all the sophistication of turboprops, they are in many ways easier to operate than big, pressurized piston aircraft.

Take single-engine operation. The Garrett AiResearch TPE-331-5-251 engines are fitted with a negative torque sensing system that takes much of the

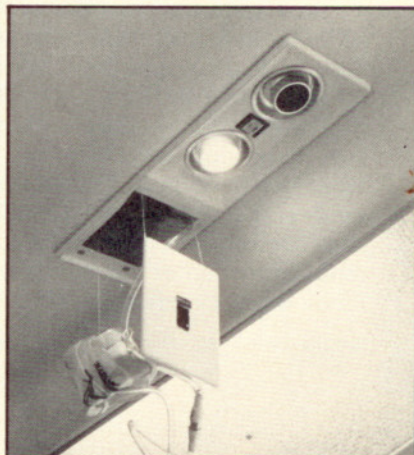
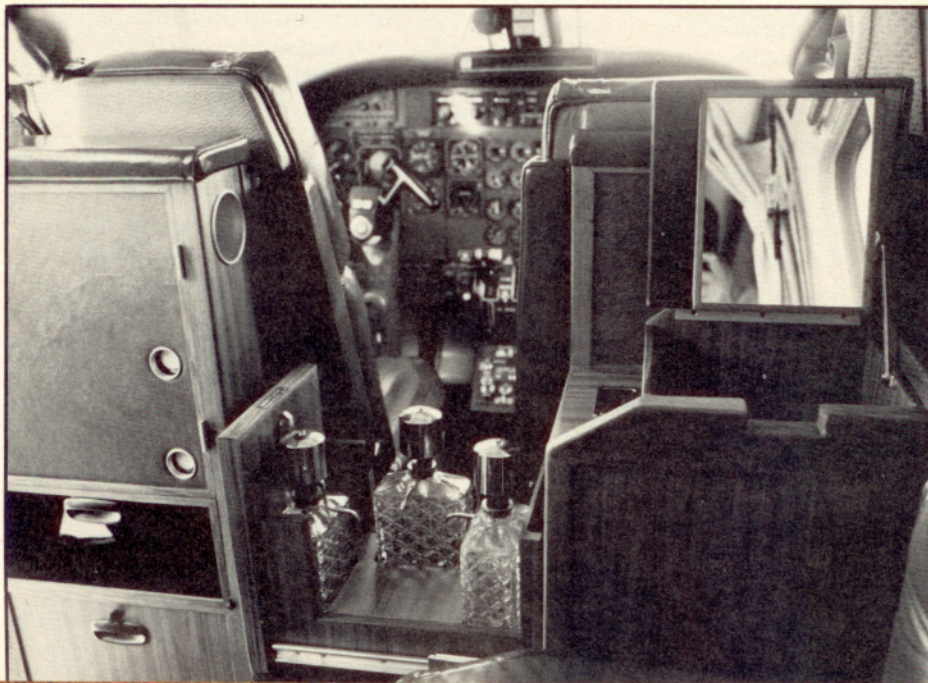
fuss out of an engine failure. A sensor detects the lack of thrust and the system moves the propeller towards the feathered, minimum-drag position. The pilot can concentrate on flying the airplane during critical maneuvers such as liftoff without having to go through the emergency drill immediately. At best single-engine rate-of-climb speed of 113 knots, the airplane will climb at 878 fpm on the good engine. Yaw excursions are minimal, and the failed engine can be identified and shut down after control and positive climb are achieved, almost at leisure.

The 690B is very stable and takeoff, approach and landing speeds are quite low. Gear and flap speeds, on the other hand, are high: 200 knots for gear ex-

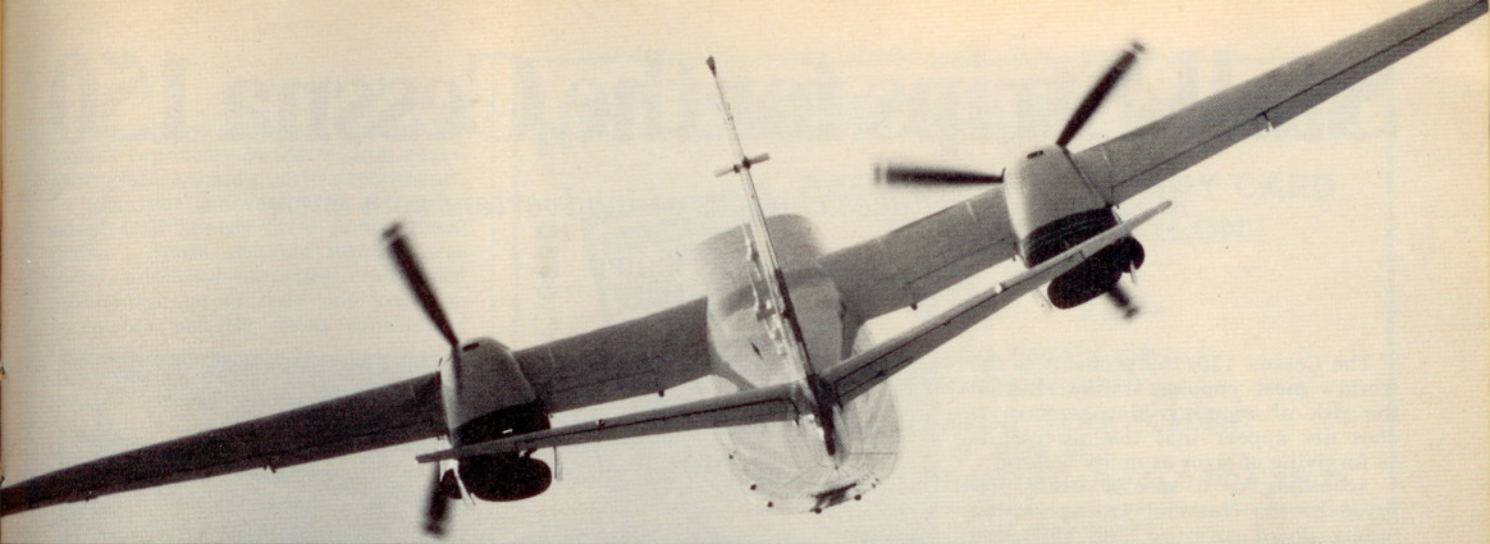
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***Passengers in the 690B don't know the fun they're missing up front—but with such airline-type amenities could they care?***







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tension; 180 for approach flaps (20°); and 140 for full flaps (40°).

The only difficulty we experienced during approaches and balked landings was the fine line between positive thrust and flight idle on the condition levers. Moving them back too far greatly increases the rate of sink. Once on the runway, though, playing with reverse is almost as much fun as the rapid rush at takeoff. The hydraulic nosewheel steering also is sensitive and takes some getting used to.

All in all, flying the airplane is the least complicated part of the 690B. There's a lot of planning and management and thinking far ahead that takes a lot of work, particularly for the newcomer to turbine equipment—or pressurized piston equipment, for that matter. There are a lot of differences in powerplant operation that take a bit of getting used to, and many different terms to learn.

For pilots with the mission requirements and the money, going all the way up to turbines is interesting. Even pilots without the capital can find occasions to consider it, such as while standing in line at the air carrier terminal and finding out that the big kerosene queen is going to be two hours late.—E.G.T.

Rockwell Commander 690B Executive I		Fuel capacity (standard)	389 gal (384 usable)
Basic price: \$769,000 (King Avionics)		Oil capacity	6 qt per engine
Price as tested: \$779,000 (Collins Avionics)		Baggage capacity	600 lb (46.5 cu ft)
Specifications		Performance	
Engine	2 Garrett AiResearch single shaft TPE 331-5-251K 3,000 hr TBO derated 717.5 shp	Takeoff distance (ground roll)	1,458 ft
Propellers	2 Hartzell 3-blade, constant speed full feathering & reversing, 106 in dia	Takeoff over 50 ft	2,259 ft
		Takeoff over 50 ft—short field	1,680 ft
		Initial rate of climb (gross weight)	2,821 fpm
Wing span	46.67 ft	Initial single-engine rate of climb (gross weight)	878 fpm
Length	44.35 ft	Maximum cruise speed (17,500 ft)	284 kt (327 mph)
Height	14.95 ft	Long range cruise speed (96% rpm, 20,000 ft)	283 kt (326 mph)
Wing area	266 sq ft	Long range cruise speed (96% rpm, 31,000 ft)	250 kt (288 mph)
Wing loading	38.82 lb/sq ft	High speed cruise range (with 45-min reserve)	1,036 nm (1,192 sm)
Power loading	7.37 lb/shp	Long range cruise (with 45 min reserve)	1,467 nm (1,688 sm)
Passengers and crew	8 to 9	Service ceiling	32,800 ft
Cabin length	14.25 ft	Single-engine service ceiling	19,600 ft
Cabin width	4.02 ft	Absolute ceiling	33,800 ft
Cabin height	4.47 ft	Stall speed (clean)	82 kt (94 mph)
Cabin pressurization	5.2 psi	Stall speed (gear and flaps down)	77 kt (89 mph)
Empty weight	6,659 lb	Landing over 50 ft (no reverse)	2,100 ft
Equipped empty weight (as tested)	6,659 lb	(with reverse props)	1,613 ft
Zero fuel weight	8,750 lb		
Useful load (basic aircraft)	3,716 lb		
Useful load (as tested)	3,716 lb		
Payload, full fuel (basic aircraft)	1,143 lb		
Payload with full fuel (as tested)	1,143 lb		
Gross weight	10,325 lb		
Ramp weight	10,375 lb		
Maximum landing weight	9,675 lb		

*No stodgy businessman's air sedan, the 690B has scat.*

