

PILOT FLIGHT CHECK: Rockwell's Latest 112A

by BERL BRECHNER / AOPA 466558



More standard equipment and a continuing flow of improvements characterize Rockwell International's single. Now watch for expansion of the model line

■ ■ If you start looking for big changes in the 1975 version of Rockwell International's Commander 112A, you'll have to look long and hard. For there aren't any. Instead you'll find a number of small improvements.

Rockwell's single-engine model became the "A" after some major revisions in its initial blueprint (see *The PILOT*, March 1974). But since then the Bethany, Okla., company has seen fit not to tamper with a design it feels is good, and now proven.

What the company is now planning, it appears, is a broad expansion of this single-engine line. Using the 112A as a base, Rockwell seems on the verge of coming up with new models to which power, speed, seats, and maybe one more engine will be added. More on new models later in this report.

As far as the company's current air-

craft is concerned, the changes introduced in 1975 include an increase in the utility-category gross weight, addition of several more items to the basic aircraft that last year were considered options, and more extensive warranty coverage.

The utility-category weight increase, up about 300 pounds to 2,488, was achieved through paperwork changes rather than any modification of the aircraft. Utility operations are limited to two occupants and no baggage. The four-seat airplane's normal maximum gross weight remains the same at 2,650 pounds.

Even as equipped last year, the 112A came standard with items you frequently have to purchase as options to create a usable airplane. This year's inclusion of several more pieces of gear as standard helps the list of

options dwindle to a precious few.

Included as standard for 1975, in addition to all the other pieces of equipment, are an external power source, an exhaust gas temperature gauge, sun visors, a glove box in the panel, and an armrest/storage box between the front seats.

A very well-equipped Commander 112A flown recently by *The PILOT* contained only six options, aside from its King avionics (\$10,500 worth), a nav tracker addition to the standard Mitchell Century 1 autopilot, and the gyro package. The six options were carpet covers, a winterization kit, a true airspeed indicator (an exchange for the standard airspeed dial), a right-hand vent window, an ELT, and a three-light strobe system. The price of the craft, as equipped, came to \$46,720. Price for a standard airplane



Trailing beam landing gear design has always provided for "cushy" landings.
Photos by the author.

ROCKWELL'S LATEST 112A continued

is \$33,500, up \$3,500 from last year.

Besides price and the added standard equipment, there were a couple of other differences in this latest-model retractable, as compared with earlier versions.

For one, the trim indicator (which was gray on black before, and virtually unreadable) is now yellow on black and easy to see. The aircraft cabin finishing looks more put together. The plane has always had an attractive cabin, and on the newest 112A flown, there was no evidence of poor interior craftsmanship.

The black upper surface of the glare shield seems less reflective than in the past, and flying into the sun presented no problems. One more change is the addition of a fuel drain inside the engine compartment. Previously, draining the low point in the fuel system had to be accomplished using a cockpit control.

The Commander 112A, powered by a Lycoming fuel-injected 200-hp engine, has from the start been well-planned. Since the aircraft began as a unique design around 1970, it did not carry with it any evolutionary bad characteristics. Like most pieces of machinery, its form is probably more suited to some pilots than to others,

but in general the craft has been designed with people in mind.

For example, the cabin is wide—47 inches at the elbows. It has two doors. It has a chart pocket on the pedestal at the pilot's right foot. The armrest between the front seats serves as a storage compartment for flashlights, papers, sunglasses, or other piloting accessories. Front-seat rails are attached to the fuselage side and the side of a tunnel running down the center floor of the cabin. (This keeps the seat slide from getting gummed up by the mud and candy wrappers that seem to accumulate on airplane floors.) Moreover, visibility all around is excellent, controls and switches are functionally grouped, and the panel arrangement is pleasing.

Safety, too, was apparently on the designer's mind when he put pen to paper on the 112A drawing board. Inertia-reel shoulderbelts built into the front seats are easy to use, and standard equipment. The fuel selector control is highly visible to both occupants of the front seats, and the selector is impossible to rotate to an "off" position without conscious unlatching of a separate lever that is part of the selector mechanism. Fuel tank filler necks are of the non-siphoning variety, eliminating chances of a no-fuel emergency due to a careless lineboy or a rushed preflight.

Technicians call such features "human engineering," but they are probably more simply called good logic.

Flying characteristics and performance remain about the same for this year's model as compared with last year's 112A. The craft is easy to maneuver, reasonably fast, and comfortably stable.

The aircraft's stability is especially apparent when it's time to drop gear and flaps as you slow from cruise to pattern or approach speed. Pull back on the throttle at 140 knots indicated, drop gear and half flaps at 130 knots, then lower full flaps at 109 knots, and the craft will slow to a stable 70 knots within 30 seconds. And it will do all this without any excessive forces on the control yoke, and with no retrimming necessary.

A little porpoising was evident in a constant-power-setting climb. With the nose aimed at an 80-knot climb, with 26 inches mp and 2,600 rpm, the craft started off providing 1,100 fpm and held about 1,000 fpm through 3,000 feet. The climb rate dwindled to 700 or 800 fpm climbing through 6,000 feet and carrying a fuel and passenger load about 160 pounds under the 112A's maximum gross of 2,650 pounds. As the craft pushed up to altitude, its nose gently dipped, then rose, then dipped again, the climb speed varying by about five knots between

ROCKWELL COMMANDER 112A

Specifications

Engine	Lycoming IO-360-C1D6, 200 hp
Propeller	Hartzell 76-inch, con- stant speed
Empty weight	1,694 lb
Useful load	956 lb
Gross weight	2,650 lb
Baggage	200 lb
Wingspan	32 ft 9 in
Wing area	152 sq ft
Length	24 ft 11 in
Height	8 ft 5 in
Fuel capacity	
Standard	48 gal usable
Optional (no extra cost)	68 gal usable
Oil capacity	8 qt
Wing loading	17.4 lb/sq ft
Power loading	13.3 lb/hp
Basic price	\$33,500

Performance

Top speed	171 mph
Cruise, 75% power	161 mph
Range, 75% power (68 gal, 45-min. reserve)	880 mi
Range, 55% power (68 gal, 45-min. reserve)	975 mi
Service ceiling	13,900 ft
Rate of climb	1,020 fpm
Takeoff distance (over 50 ft)	1,585 ft
Landing distance (over 50 ft)	1,310 ft
Stall	
Gear down, full flaps	62 mph
Gear up, no flaps	70 mph

rpm. That setting provided a true airspeed of 150 mph.

Takeoffs and landings were made from Dulles International, outside Washington, D.C., and two single strip airports in the nearby countryside. Temperatures hung around freezing in the area, and winds were light and variable at the surface.

A normal takeoff (rotate at about 65 knots with 10 degrees of flap) consumes a little over 1,000 feet of pavement. A short-field procedure (20 degrees of flap, pop off at 55 knots, gear up immediately, hold a 65-knot climb attitude) will chop about 300 feet off your takeoff distance.

Landings made at a normal approach speed of about 70 knots, with all 35 degrees of flap down, will have you rolling to a stop with somewhere around 600 or 700 feet of cement behind you. That speed allows adequate rudder and aileron control throughout the approach and keeps you safely above any stall speed.

In flight the aircraft stalled, gear and flaps down, at 48 knots indicated, or 55 mph. Stalls clean come about 8 mph faster. In either case, the stall is noticeable, but certainly very manageable, with control available right up to the stall break.

Overall, the 112A is comfortable, handles well, and looks sleek. However, make a good study of its weight-and-balance numbers before departing on your weekend jaunts.

With full fuel (68 gallons or 408 pounds in planes with the big tanks), 15 pounds of oil, and two 170-pound passengers (340 pounds), the 112A recently flown for The PILOT (with 865 pounds' useful load) would be 102 pounds under gross weight.

Though the aircraft might handle a family trip (husband, wife, and two small kids) with alacrity, it's im-

portant to remember that the presence of four seats in this airplane (and most others) does not mean any four people can make the planned trip.

The 112A, additionally, has maximum landing weight 100 pounds below its maximum gross weight.

Now, what about those plans for expansion of the 112A line? A Rockwell spokesman, without being specific, indicated that two higher-horsepower versions of the 112A would be coming soon. Though he couldn't confirm it, he did not deny conjecture that the models would be 235- and 260-hp models. He added that a turbocharged model might also be waiting in the wings.

Two more elaborations of the basic 112A are still back in the dressing room: A 112A "stretch" model with six-place seating and a twin-engine model are among those being envisioned. Introduction of these new models will take place over the next five or six years, "assuming we don't find any softness in single-engine sales," the spokesman said.

He referred to his company, now churning out 14 singles per month, as "the new kids on the block in single-engine sales," but indicated that Rockwell International intends to be "competitive in every range."

As these plans take shape, the company is also beefing up its dealer network. At present, Rockwell has 7 distributors and 65 dealers working on the single-engine line. By November of this year, as new models are introduced, Rockwell plans to have 17 distributors and 80 dealers.

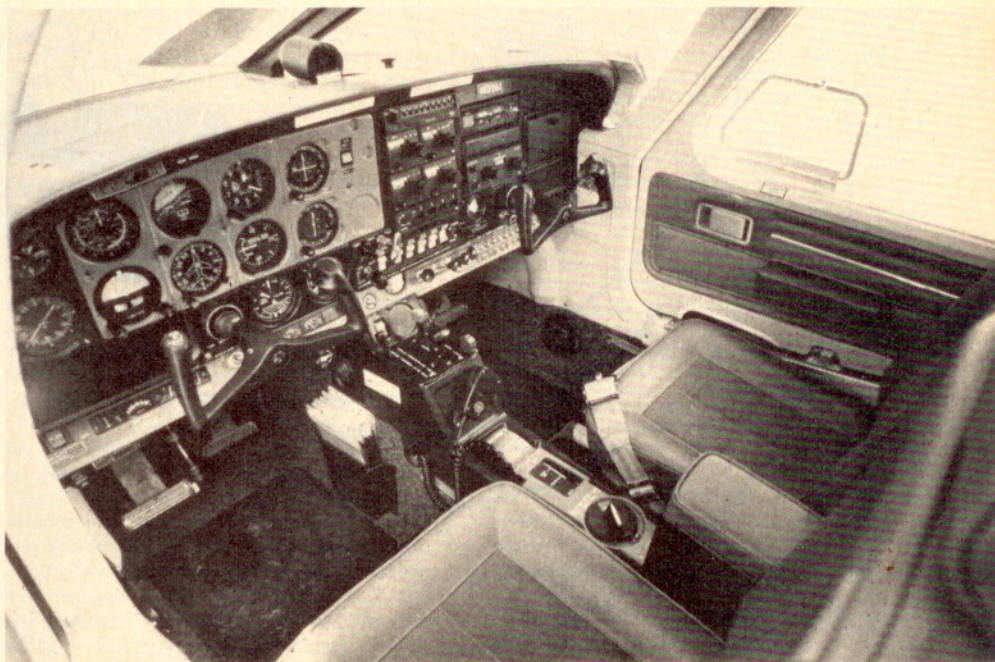
The industrial conglomerate may consider itself the "new kids on the block," but judging from its expansion plans it appears that Rockwell is out to conquer its share of the neighborhood turf pretty quickly. □

dips. Once leveled and trimmed, however, the 112A smoothed out its act and assumed a nicely nose-low attitude.

With high cruise power setting you feel engine vibration clearly, though it is not so excessive as to be uncomfortable. Noise levels are acceptable (any pilot who spends a lot of time in any lightplane cockpit ought to think about wearing earplugs).

At an altitude of 7,500 feet, with the throttle pushed full forward, the gauges showed 22 inches mp and 2,500 rpm, and the airspeed needle pointed to 122 knots. With the speed recomputed for density altitude and converted to miles, the aircraft was trueing out at 157 mph. A fuel-flow gauge (standard equipment) read 11 gph at that power setting (about 75%).

At 3,000 feet, where the temperature was 27°F, full power sped the plane along at an indicated speed of 142 knots, which converted to 168 mph, or 3 mph under the 112A's claimed top speed at sea level. At the same altitude, a more reasonable power setting—which turned out a little over 70% power, was 23 inches mp and 2,500



Comfortable placement of cockpit controls includes, from the armrest forward, the fuel selector handle, trim indicator, trim wheel, mike, and power levers.