



Up front, the new retractable Skylane houses a carbureted Lycoming 235-hp engine.

Photos by the author.

Pilot Flight Check The Retractable Skylane

■ ■ Around 1960, Cessna Aircraft took its 182 model, put retractable landing gear on it, added 30 horsepower, and called it the 210. That airplane has evolved into the 210 Centurion, which is now powered by a 300-hp engine.

In 1977, Cessna Aircraft took its 182 model, placed retractable landing gear on it, added five horsepower, and called it the Skylane RG.

It's a natural. The Skylane, already Cessna's third most popular airplane, faces an era where speed and fuel efficiency are predominant in most pilots' minds. The craft already had a controllable pitch propeller and its horsepower was already plenty for a four-seat airplane. So dispensing with the landing gear in flight was the next logical event in the 182's saga.

It would appear Cessna has tried to keep the gear from creating unnecessary burdens or limitations on the pilot who chooses this airplane over its fixed-gear factory-mate. The retractable Skylane, with an upped maximum gross weight, has more useful load than the fixed-gear model. And the retracting wheels are designed to operate simply and quickly.

The main gear on the new plane disappears into wells in the fuselage that have no doors—a common source of extra maintenance needs on the 210. Also, each main gear rotates back into place in one sweeping movement, on one axle. The gears are moved by electrically driven hydraulic actuators and work relatively quickly, as compared to the gear on other Cessna singles. Gear down took about 5 seconds and gear up was clocked in 6½ seconds.

The effects of retracting the landing gear on the Skylane are pronounced. In flight, at 8,500 feet, N2261T, the flight check aircraft, was set up for a 61% cruise power setting, obtained with 21 inches manifold pressure at 2,100 rpm. With the gear

up, that setting produced 135 knots indicated airspeed, five knots below the maximum gear-operating speed for the aircraft. After lowering the gear and retrimming—without touching the power levers—the indicated speed dropped to 110 knots. When compared to its fixed-gear counterparts, Cessna specifications show the new RG with a 12-knot edge at both maximum speed and 75% cruise settings.

How much does 12 knots extra speed cost? A shade over \$1,000 per knot. The fixed-gear Skylane carries a price tag marked \$12,600 less than comparably equipped retractable Skylanes. With the extra speed that comes on the more expensive bird, however, the buyer also gets a Lycoming O-540 engine that carries a 2,000-hour time between overhaul and a useful load that tops the fixed-gear Skylane. Other than these three features—gear, engine, and load—the two airplanes are identical.

Normally, one would expect the addition of retractable gear to add 50 pounds, or more, of hoses, motors, actuators, switches, and hydraulic fluid to make the wheels do their thing. The weight is usually subtracted from the carrying capability of the craft.

But Cessna took advantage of the new certification required on the Skylane RG and managed to come up with a machine that has a 3,112-pound allowable ramp weight, compared to the ramp weight of 2,960 pounds allowed on the fixed-gear craft. According to Cessna specifications, the useful load of 1,318 pounds for a standard Skylane RG II is 128 pounds more than a straight-legged Skylane II.

In flight, the new airplane is relatively quiet and quite vibration-free. The engine in the craft is downrated to 235 hp, so 2,400 rpm is the maximum it will turn. The engine is rated for 100LL grade fuel.

**The gear goes up
on another
Cessna single to
boost speed — and,
surprisingly, load**

by BERL BRECHNER / AOPA 466558

This plane had the optional long-range tanks installed, which yield 75 gallons of usable fuel. Check flights were with full tanks and two aboard, so we were starting off at between 400 and 500 pounds below maximum gross weight. As equipped, N2261T weighed 1,871 pounds empty.

Assuming an accurate airspeed indicator, speed checks in the plane consistently showed faster-than-published speeds, most probably a result of the light flying weight. In cruise, where it was 37°F at 8,500 feet, 71% power (21 inches manifold pressure and 2,400 rpm) offered an indicated airspeed of 145 knots, a point on the airspeed indicator just into the yellow arc. That speed converted to 165 knots true, or almost 190 mph.

A more miserly power setting—21 inches mp and 2,100 rpm—could be used for 61% power and a fuel burn rate of about 11.2 gallons per hour. We showed 135 indicated, or 154 knots true.

At 2,000 feet with throttle and prop handles full forward (continuous running at full power is OK for this engine, but is not a good operating practice), the airspeed read 160 knots in choppy 52°F air. That converted to a true reading of 165 knots.

In all, the feel of the retractable





SKYLANE RG continued

Skylane is not different from the Skylane we have known since 1956. Its elevators are, simply, heavy. Smooth, flowing landings are hard work, particularly in a Skylane loaded with a forward center-of-gravity, as was the flight check craft—full fuel and two front-seat occupants, with no people or baggage behind.

Once in cruise, though, the machine is stable. Aileron forces are moderate and reaction is comfortable, if not quick. Rudder pressures, too, are moderate. The airplane has good yaw-damping characteristics and is comfortable in handling a crosswind. But again, heavy elevators sometimes make minimal changes in altitude a rigorous pilot exercise.

As mentioned, dropping the gear slows the airplane significantly, but it also results in about a 1,000- to 1,500-fpm rate of descent. And conversely, when raising the gear from level flight, the craft starts upward at about 1,000 fpm. I found that about a half turn of trim wheel toward nose-up negated the descent that starts as the gear goes down.

For an IFR descent, power can be pulled back to 18 inches and 2,300 rpm. Once under 140 knots indicated, 10 degrees of flaps may be lowered. This configuration will provide for a 140-knot descent at 500 fpm. Farther down, say crossing the outer marker, dropping the wheels and retrimming (without a power or flap change) offered 120 knots and a 500 fpm descent. The rest of the flaps may be lowered at 95 knots on

final, for a comfortable landing as slow as 65 knots.

Takeoffs in the RG Skylane, without rushing to pull up the gear, were accomplished from the Augusta, Kan., airport in under 1,000 feet. Winds were up to 10 knots from the northwest, and the outside air temperature was 60°F at the 1,328-foot-elevation north-south runway.

On a short-field takeoff, the book recommends pulling the nose off at 55 knots and climbing at 60. This pro-

cedure, I found, would give about a 1,200-fpm rate of climb. More comfortable climbs—where the horizon is visible over the nose—came at 110 knots and still produced a 900-fpm climb.

Ground handling of this new bird seems unusually easy. The brakes feel almost as if they are power-assisted; nosewheel steering is easy and responsive. Overall, the touch on the ground is that of a much lighter airplane.



The gear handle is found just in front of the pilot's control yoke, and is adjoined by single up and down indicator lights.



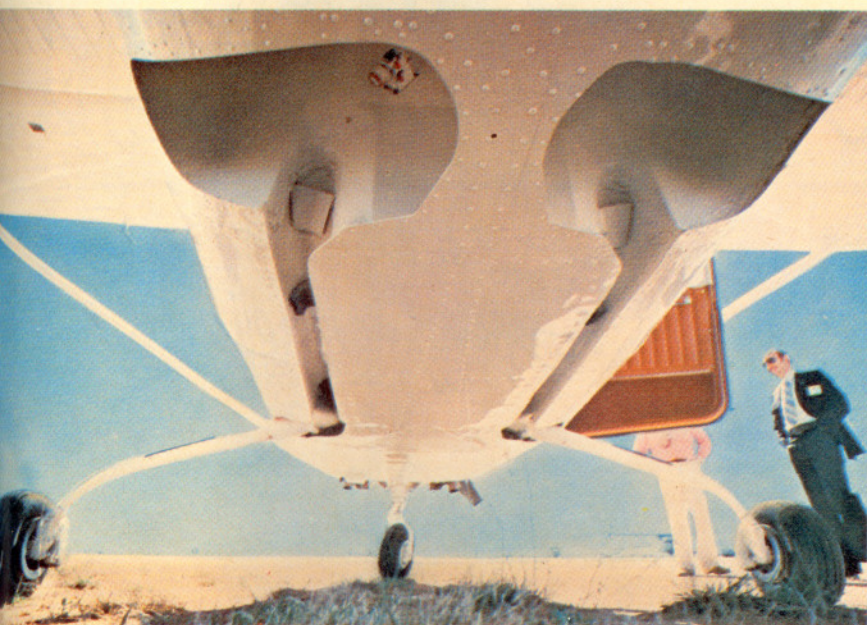
Wing struts, but no landing gear are an unusual combination for Cessna.

Unlike Cessna's other retractable singles, the Skylane RG has wing struts, which might lull the unwary pilot into thinking he's in a fixed-gear Cessna, so you must be particularly attentive to wheels at takeoff and landing time. The gear handle is found just below the right half of the pilot's yoke and beside it are gear position lights—a single green light for down and a single amber up light.

Emergency lowering of the gear relies on a handle that unstows from between

the front seats and is used to pump down the wheels. The baggage compartment, which is entered through a small door at the rear port side of the cabin, is smaller than in fixed-gear Skylanes, for a box in the compartment houses the main wheels when they're in the up position. Two hundred pounds of luggage may still be placed in the compartment, however.

Cessna publishes three prices for many of its airplanes, depending on



Main wheels retract into doorless wells that are set into the Skylane's baggage compartment.

SKYLANE RG

Basic Price \$49,950

Specifications

Engine	Avco Lycoming O-540-J3C5D 235 hp @ 2,400 rpm
Propeller	McCaughey Constant speed, 2 blades, 82 in dia
Wing span	35 ft 10 in
Length	29 ft 4½ in
Height	8 ft 9 in
Wing Area	174 sq ft
Wing loading	17.8 lb/sq ft
Passengers and crew	4
Empty weight	1,734 lb
Useful load	1,378 lb
Gross weight	3,112 lb
Power loading	13.2 lb/hp
Fuel capacity (standard)	61 gal (56 usable)
Fuel capacity with optional tanks	80 gal (75 usable)
Baggage capacity	200 lb

Performance

Takeoff distance (ground roll)	820 ft
Takeoff over 50 ft	1,320 ft
Rate of climb	1,140 fpm
Maximum level speed	160 kt
Normal cruise speed (75% power, 7,500 ft)	156 kt
Maximum range (10,000 ft, standard fuel)	655 nm
Maximum range (10,000 ft, with optional fuel)	940 nm
Service ceiling	14,300 ft
Stall speed (clean)	54 kt
Stall speed (flaps down)	50 kt
Landing distance (ground roll)	600 ft
Landing over 50 ft	1,320 ft

equipment options. A stripped Skylane RG is \$49,950. The "II" model, which adds basic radios, gyros, and other creature comforts, is \$56,970. A "II with Nav-Pac" version, with basic IFR capability, is \$60,200.

Despite all these prices, however, N2261T managed to achieve a price of \$68,870. Among higher-priced options on the airplane were encoding altimeter, 300A autopilot, Narco DME 190, electric trim system, wing-tip strobes, and vertical-adjusting front seats.

Just what the retractable Skylane will do to Cessna's line is not certain. Obviously, the new airplane will cut into sales of fixed-gear 182s, as well as Cardinal RGs and Centurions. And Cessna has made allowances; a slight reduction in production of these airplanes is expected. But rather than take sales away from other products, Cessna marketing people expect the Skylane RG to add a new slice to the pie, in the hope that they'll wind up the meal just that much fuller. □