

## Pilot Flight Check

# The Rallye 235 GT

*A touring plane  
that just begs for a good time*

by BERL BRECHNER / AOPA 466558

■ ■ Show up at an airport in a Rallye, and you might as well have arrived on the back of a dinosaur. You get that much attention.

The Rallye is a not-so-new light single, built in France, that has had a most checkered and timid marketing history in the U.S. Previous efforts resulted in U.S. sales of a few models of a Rallye, called the "Minerva", in the late 1960s; since then the airplane has been almost unheard of on the west side of the Atlantic.

But Aerospatiale, and its light aviation manufacturing arm, SOCAT, apparently are looking across the sea and seeing buyers. The company is seemingly in the process of making a determined effort to crack into U.S. airspace.

The not-so-diminutive details of assembly and certification of a French-made airplane on foreign soil might yet prove a stumbling block for SOCAT. But if it can all work out, and if the company can supply airplanes in the states, it would appear the demand is there. Pilot interest in the craft seems high, and this is, in some respects, an incredible machine.

Its most unusual features are slats that run almost the full length of the leading edge of each wing. The slats are flush when the plane is flying in normal conditions, but they extend outward seven inches as the angle of attack of the wing moves toward a stall. The

pilot does nothing to operate the slats—they are pulled out by the shifting forward of the low pressure area that normally rests atop any wing in flight. The slats, plus large slotted fowler flaps and a sharply dihedral wing, make the Rallye an unusually controllable craft in slow flight, and into a stall. Takeoffs and landings can be true STOL affairs.

The top of the line Rallye is the 235 GT, powered by a Lycoming O540-B4-B5, the same powerplant right down to the dash numbers found in Piper's Cherokee 235. Note: that Lycoming is rated for 80/87 octane fuel—but the engine has not been too prone to the difficulties associated with running on 100 LL avgas that have beset some lower horsepower 80-octane burners.

There is one notable deficiency in the aircraft. Inside, in flight, it's hot. Ventilation is inadequate. Even on relatively







The Rallye 235 GT: its sliding canopy offers a wide-screen view out the side. Photo by Marvin Ickow.

comfortable summer days, at altitudes several thousand feet above ground, the temperature inside the Plexiglas-shrouded canopy was, simply, sauna-like. It became standard procedure, upon slowing to traffic pattern speed, to slide the canopy back a few inches for circulation inside the cabin.

On the ground, you pull the canopy all the way back and let in more fresh air. The Rallye is steered by braking on the side you wish to turn toward, for the nosewheel is free-castering, like Grumman American's singles. The main wheel spread of the Rallye, however, is only 6 feet 7 inches, so directing the craft at slow speeds becomes a bit burdensome.

Beyond these drawbacks, though, a pilot should find little to fault. And as he begins to explore handling and flight characteristics of a Rallye, he'll soon

discover some unbelievable capabilities of this airplane.

Those pilots who have seen Maurice Séréé demonstrate the Rallye at air shows watched it dance gracefully through the sky, through Cuban 8s not much longer than its short takeoff run; and, through a deadstick landing routine where the aircraft wafts lazily down from 500 feet, leaf-like in the crazy gyrations and turns it makes, before it plunks onto the pavement.

Though Séréé is a masterful hand at the controls, any pilot in a Rallye can get a feel for the ease of such maneuvers. A touch of aileron, and the airplane seems to ask for more, for a roll. A bit of cross control, and you find you can cross control even further—total cross control of aileron and rudder, in a stall no less, and there is not a hint of trouble. A light pull of elevator gives

more than its share of climb. (It's hard to remember the Rallye 235 is not certified for aerobatics.)

Most spectacular, however, are the takeoffs that can be accomplished with a Rallye. Summer day, temperature in mid-80s, field elevation 540 feet, almost full fuel and three aboard. Flaps are lowered halfway. Not at gross weight, but within 200 pounds of it, the airplane, with power applied full from a dead stop, will be at 50 knots in under 600 feet. At that speed you simply pull back on the wheel to hold 50 knots. The slats pop out, and the plane leaps upward at an alarming pitch attitude. Hold 50 knots and the vertical speed will hit the stop at 2,000 fpm. Forward visibility is nil, for with an almost 50-degree pitch angle, all you see is nose to the front and hazy sky above. For a pilot used to more mundane departures from



the earth, this takeoff is a shocking introduction to a new airplane.

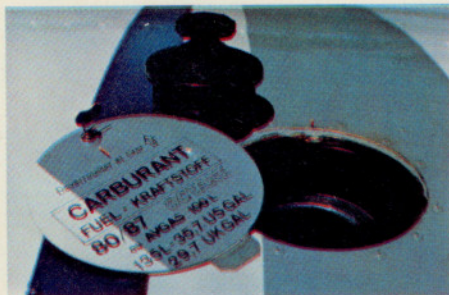
Of course one might worry about a stall out of such an abnormal situation. Later, and at a comfortable altitude, I slowed the airplane, added full power, and very gently pulled the wheel back. At 40 knots there was a bit of shivering, and the climb rate lessened as the nose fell back over. With the extra speed, though, the airplane started climbing again, and continued porpoising upward, in and out of a stall.

Power-off stalls occurred at 50 knots, flaps up or down. This Rallye simply shivers as it makes a flat descent at 900 fpm. In a stalled configuration, with the yoke pulled back to its stop, the airplane can still be banked 45 degrees either direction, or cross-controlled, and

will do nothing more than begin a mild spiral in the direction of the bank. Turn out of the bank and you continue floating, stalled, downward. The airplane has no stall warning—neither horn nor light—of any sort.

In doing stalls and steep banked maneuvers, you find the slats don't

shoot out at a set speed, but only when the extra lift is necessary. In a steep turn the slats start outward at 85 knots indicated, and are fully extended at 75. In level slow flight the slats don't extend fully until 68 knots. But with a hard enough yank back on the control wheel in level cruising flight, the slats



Gas cap is a rubber plug with hinged metal door that closes flush with wing.



The slats that span the wing's leading edge extend out to 7 inches, and are attached by supports that move on nylon rollers. Narrow chord of wing and large fowler flap can be seen below.



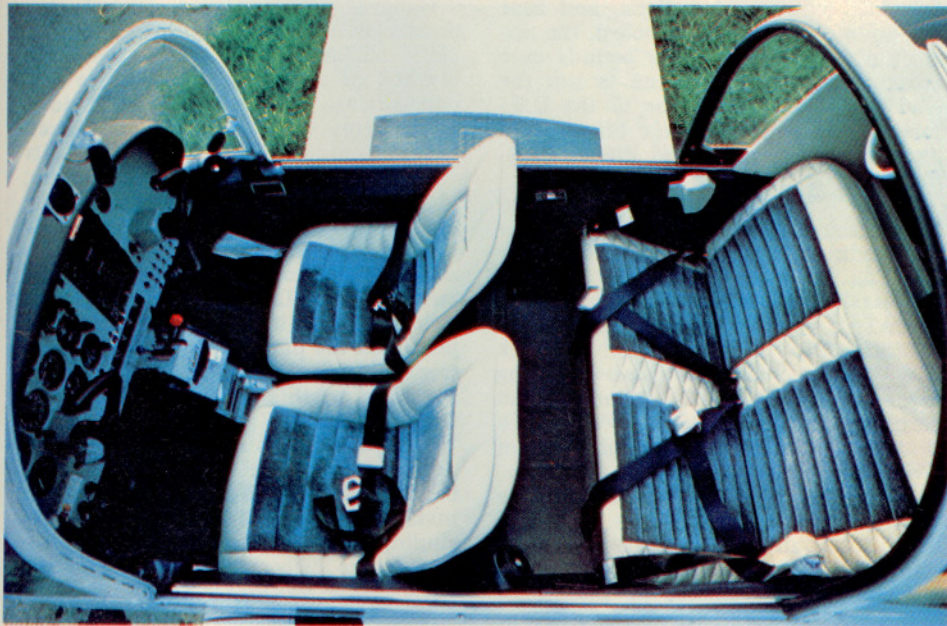
will momentarily extend, no matter what the airspeed.

The Rallye's rudder is the least sensitive of its controls. The rudder surface and vertical stabilizer are large, but the airplane will oscillate about four times after a hard shove of rudder at cruise speed. Its trim wheel is extremely sensitive. Just a touch of trim will send you sailing out of cruise at several hundred feet per minute. The flaps, too, will cause a pitch-up as they extend fully downward. In fact, from 80 knots in level flight, extension of full flap resulted in an initial climb rate of 1,000 fpm.

Full flaps, too, bring about a light-footed landing. The mains will skid with the seemingly gentle brake application when flaps are down—even after landing at a speed too low for much flare. But with flaps part or all the way up, braking is more sure. The best landings



Overhead glass in the canopy adds an extra dimension of visibility. With canopy back, left, occupants step from wing root directly to their seat.



in this craft seem to come with half flaps at 70 knots. That approach speed, with power back, gives ample flare, without ballooning. For a landing within your takeoff distance—500 feet or so—60 knots and full flaps provide a short, but gracelessly abrupt, touchdown.

Stability in cruise is not great, for the Rallye wing area is small. The craft will tend to lean toward the heaviest side as fuel burns, and choppy air will slowly nudge the craft out of level flight. Rudder trim, however, is among the plane's flight controls.

Cruise speeds, with only partial load-

ing, were above the published figures in the aircraft handbook. With 70% power (20 inches mp and 2,500 rpm), in smooth air at 8,500 feet, where the temperature was 11 degrees C., the airspeed indicator read 120 knots, or 139 knots true. With power reduced to 2,300 rpm for 65% power, airspeed dropped off about 2 or 3 knots. Later, with a half load of fuel and only the pilot aboard, the levers were set for maximum power at 5,500 feet. The throttle gave 23 inches mp, and the prop was set at its redline, 2,575 rpm. A true airspeed of 146 knots was attained.

The view from inside the Rallye cockpit is wide screen most of the way around. Still, because of the frame wrapping the windshield where the sliding canopy attaches, and a windshield center post with compass and light attached, the view out the front is not nearly as expansive as you might expect. There is such a remarkable amount of side glass, though, the view left and right is like looking out a living room picture window.

Seating space is good for front seat occupants, though my spine pressed against the metal seat back through the



## SOCATA RALLYE 235 GT

Basic price \$41,900

### Specifications

|                             |   |
|-----------------------------|---|
| Engine                      | Lycoming O 540-B4-B5,<br>235 hp @ 2,575 rpm |
| Propeller                   | Hartzell 77 in dia<br>constant-speed        |
| Wing span                   | 31 ft 11 in                                 |
| Length                      | 23 ft 9 in                                  |
| Height                      | 9 ft 2 in                                   |
| Wing area                   | 132 sq ft                                   |
| Wing loading                | 20 lb/sq ft                                 |
| Passengers and crew         | 4   |
| Cabin length                | 6 ft 10 in                                  |
| Cabin width                 | 3 ft 4 in                                   |
| Empty weight                | 1,525 lb                                    |
| Useful load                 | 1,115 lb                                    |
| Gross weight                | 2,640 lb                                    |
| Power loading               | 11.2 lb/hp                                  |
| Fuel capacity<br>(standard) | 71 gal (usable)                             |
| Oil capacity                | 12 qt                                       |
| Baggage capacity            | 100 lb                                      |

### Performance

|  |           |
|--|-----------|
| Takeoff (STOL)                                   | 490 ft    |
| Takeoff distance<br>(normal)                     | 1,181 ft  |
| Takeoff over 50 ft<br>(normal)                   | 1,640 ft  |
| Rate of climb                                    | 980 fpm   |
| Maximum level speed                              | 148 kt    |
| Normal cruise speed<br>(75% power,<br>8,000 ft)  | 132 kt    |
| Economy cruise speed<br>(65% power,<br>8,000 ft) | 125 kt    |
| Range at normal<br>cruise (no reserve)           | 600 nm    |
| Range at economy<br>cruise (no reserve)          | 659 nm    |
| Service ceiling                                  | 14,800 ft |
| Stall speed (flaps<br>down)                      | 51 kt     |
| Landing distance<br>(ground roll)                | 541 ft    |
| Landing over 50 ft                               | 1,296 ft  |

### THE RALLYE continued

too-thin upholstery padding. Rear seat leg room is sharply limited by a wing spar that cuts across the floor behind the front seats. The craft's baggage compartment is small. It is rated for 100 pounds, and two small suitcases would just about fill the available space.

On preflight, fuel is drained from sumps at the bottom of each tank. Fuel quantity much below full cannot be observed, however, because the tank filler holes are outboard on the steep-dihedral wings.

Maximum gross weight on the Rallye 235 is 2,640 pounds. The aircraft flight checked, of French registry F-ODFU, weighed 1,560 pounds empty. With a full fuel load of 71 gallons, and four 170-pound passengers on board, the aircraft would have been 49 pounds over gross weight. The airplane is not the load hauler that are some of the U.S.-made craft with the same horsepower, like Cessna's Skylane and Piper's Pathfinder.

This airplane was among four crated over to the United States and assembled by Reading Aviation Services in Reading, Pa., for display at the summer run of airshows around the country. SOCATA's U.S. company, the Rallye Aircraft Corp., is located in New York City, and was at last word finalizing arrangements for U.S. assembly and certification of the aircraft. The work is to be handled by Raleigh-Durham Aviation at Raleigh, N.C.

According to Alfred M. Bertolet, the president of U.S. Rallye, an initial batch of 20 to 30 airplanes will be assembled and certified in France, then crated, shipped and reassembled for sale in the U.S. Later, however, just basic airframe parts will be shipped here, and major U.S. components—engines, wheels, brakes, props, avionics and other accessories—will be fitted in the U.S., where the flight test toward a U.S. airworthiness certificate will take place. According to Rallye, roughly 80% of the airplane's dollar value is U.S.-made.

Maintenance of the Rallye shouldn't prove much of an extra hassle, assuming the mechanic confronting the craft has a set of metric tools. The glareshield is easily removable, as is an aluminum cover in front of the windshield. Hardware behind the panel is therefore easily accessible.

Touches of France abound on this

machine, at least as it was presented here. Instead of words, there were little symbols over switches and controls to indicate their function—just like on foreign cars (although the symbols were considerably more obscure). The outer ring of the airspeed indicator was calibrated in kilometers/hour. Throttle, prop and mixture knobs seemed small, compared to their U.S. counterparts—an observation that passed after a few minutes of flying time. The plane's tie-down rings on the wing proved too small to accept a slightly frayed end of nylon rope. And the Rallye manual's English was a bit rough in spots.

Early Rallyes had control sticks, but the version of the airplane coming to the U.S. is equipped with dual control yokes.

Gauges, switches and controls are pleasingly accessible—with fuel selector (left, off and right) easily seen and reached at center pedestal from a normal sitting position. A row of idiot lights helps back up information from gauges and switches. Four red lights show status of generator, oil pressure, parking brake and fuel selector. (If any red light is on, it is unwise—at best—to attempt a takeoff.) Two green lights show when pitot heat or fuel pump are switched on. Landing and taxi light switches are internally lit and are placed on the panel a finger length away from the throttle.

Radios in this airplane included an unusual mix of Narco and King: Narco VHF equipment, audio panel and transponder; King ADF, DME and marker beacon receiver. There was no autopilot installed in F-ODFU. Total options (including \$740 wheel pants) were \$18,121, raising the price of this craft from its basic cost of \$41,900 to \$60,021.

Three other lower horsepower and lesser priced Rallyes are to be available in the U.S.—a 180-hp constant-speed prop version (\$39,900); 180 fixed-pitch (\$35,400); and 150-hp fixed-pitch (\$29,900).

Sander Rang des Adret, whose title is Rallye vice president, is heading marketing efforts here. He projects 20 Rallyes arriving on U.S. shores in 1977, 60 in 1978 and 150 in 1979. Earlier spotty efforts to spread Rallyes across the land resulted in sales of 60 airplanes in the U.S., out of a total of 3,000 manufactured over the past 17 years. So if the new projections of Rallye are even close, comparative success may be quickly at hand. □