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TRINIDAD

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AUTOPILOT APPROACHES: Man Versus Machine



FRENCH CONTENDER

Sagging sales records and a lack of enthusiasm from the hometown crowd have caused domestic manufacturers to drop their guard, leaving an opening for the French Trinidad to go for American gold

By Bill Cox

It's perhaps notable that in the last few years, most of America's major aircraft manufacturers have been absorbed by corporate giants. Piper became a part of Bangor Punta, which itself was absorbed by Lear-Siegler. A few years ago Mooney became a minuscule division of Republic Steel, and then LTV acquired Republic. Recently, even Beech was folded under the Raytheon umbrella.

Only Cessna, the world's largest aircraft manufacturer, remains its own master, beholden to no one except its stockholders. Smaller companies such as Bellanca, Champion and Maule have flirted with an increasingly fickle market only to find the cost too high, although a few of the minors are still in limited production.

Internationally, the situation isn't too different. General aviation airplanes are most often products of larger companies. Take, for instance, the line of singles from Aerospatiale, the French-government owned aerospace conglomerate that builds everything from airliners to fighters. Several years ago Aerospatiale attempted to market three fixed-gear, STOL airplanes, known as Rallyes, in the United States. The aircraft were capable enough — all four seaters having 150, 180 and 235 hp, respectively, and possessing truly spectacular short-field performance.

The Rallye experiment failed for a number of reasons, most of which aren't relevant. Perhaps the primary problem was that American tastes and needs in light, single-engine airplanes are slightly different than European preferences, and except for the STOL capabilities, American airplanes could easily match the Rallyes at far lower prices.

Aerospatiale is trying again, and this time it's attacking a different market segment with some far better products. The principal airplane in the new trio of products is a machine known in Europe as the TB-20, but marketed in this country as the Trinidad. As with the Rallyes, there are three airplanes in the family: the TB-9 Tampico, bottom of the line with fixed gear and prop (optional constant speed) plus 160 hp out front; the TB-10 Tobago sporting 20 more hp; and the 250-hp, constant-speed retractable Trinidad. All three are built on the

same production line, share many common parts and look alike.

The West Coast distributor, Trinidad Distribution Corp. Of The West, Hayward, Calif. (the Trinidad is also distributed by Aerovision Inc. of Houston, Texas), saw that the demonstrator was flown into Van Nuys Airport. I spent about an hour in a thorough checkout before I was handed the keys and told to have fun.

"Fun" is rarely the primary mission of most four-place retractables. By reason of their pricetag, the airplanes in this class most often must satisfy a business need. There's little question, though, that fun is a definite part of the Trinidad's personality. From the second you see the airplane sitting pretty on the ramp, you can't help but speculate on how much fun it will be to fly. The Trinidad bears little resemblance to any

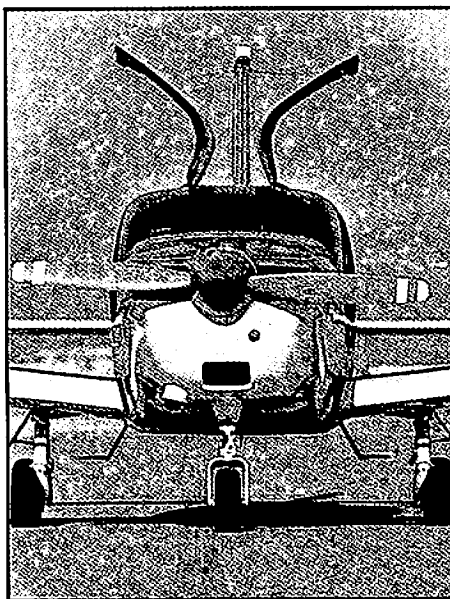
other airplane you've seen. It looks a little like a tall Comanche 260, perched high on its narrow main gear. The cowl is long and fat, housing an injected 250-hp Lycoming, technically designated the IO-540-C4D5D. The windshield sweeps back from the cowl with a minimum of taper, an obvious concession to low-drag aerodynamics. Trinidad's tail is an unusual design, mounting the rudder and vertical stabilizer well forward on the empennage, ahead of the horizontal's leading edge.

The wings are short and thick, Cherokee-style, with significant dihedral. If you didn't know better, you'd swear that they were designed by John Thorp. Entry is through a pair of gull-wing doors that rotate out and up, a la 300 SL Mercedes. It's a sporty arrangement, sure to garner more than its share of second looks on the ramp.

In fact, the airplane's overall look is decidedly sporty, more so than you may have come to expect from the majority of other general aviation retractables. The severely swept tail and generally arrow-like fuselage are reminiscent of much faster designs, which is interesting in view of the Trinidad's simple construction. The Trinidad achieves its low price (which we'll discuss later) by minimizing construction time and parts count. The airplane was designed from the outset to be simpler to build than any comparable machine on the American market, and that simplicity is reflected in significant economies of construction.

Climb inside the Trinidad, and you recognize other immediate differences between French and U.S. aircraft construction. On the test airplane, the upholstery is done in a rich-looking, plush, tan leather. The seats are built large, with the overall impression of comfort, the kind of seats you might expect to see in an exotic European sports car rather than a weight-conscious general aviation single.

That's certainly not all bad, especially when it comes to seating comfort. The Rockwell 114 was another airplane that offered copious room and lux-



From head on the Trinidad's unusual gull-wing doors remind one of a Mercedes 300SL.

TRINIDAD

urious accommodations, and though it wasn't much of a success among medium retractables, it offered one of the roomiest and best-finished interiors in the business. The Trinidad appears to have similar dimensions and the same design philosophy.

Room in the back seat is almost as good as up front, although a friend of mine who stands more than 6 feet tall found his head was brushing the roof. The distance from the left to the right cabin wall is constant in front or back, so at least all passengers have the same hip and elbow room. Alternatively, if you need to carry more things than people, you can pull the rear seats and use the entire rear area for cargo, 573 pounds of it as a maximum.

Flight instruments are grouped left, radios are laid down the center and engine condition instruments are to the right, canted toward the pilot for easier reading. Power controls are located on a quadrant that doubles as a right armrest for the pilot, and the combination works well. The controls fall readily to hand. Rudder trim is to the rear of the other controls and, as I learned later, is extremely positive, almost too much so. It's obviously directly connected to the rudder and has an immediate effect on yaw trim when you barely touch it. The panel is finished in a professional gray with lighter accents. The overall effect is one of tasteful but still functional appearance.

Your first taste of the Trinidad's perhaps characteristically European enthusiasm comes when you push the throttle forward for takeoff. With only 250 hp out front to propel almost 3000 pounds of airplane, I might have expected a little less enthusiasm, but the Trinidad responded nicely to power up. It leaps forward more quickly than I seemed to recall when I flew behind the same power in a Comanche. Contrary to what you might expect from the unusually narrow gear, steering on the ground is quick and sure, without any of the darting back and forth that is often associated with tight nosewheel steering. It is a good idea to keep your

feet off the brakes from the instant of power application, however, to avoid any possibility of inducing an oscillation to left and right. Despite what appears to be a high panel from the outside, the pilot sits tall enough in the seat to allow good over-the-nose visibility.

The Trinidad is ready to fly in only about 1000 feet of runway. During the time I flew the airplane, I took it into strips as short as 2000 feet, and there was never any apprehension about getting in or back out. The electric flaps are large and effective, so you can plan to leap out of short strips in minimal space without worrying about dragging the gear through the fence.

It's always refreshing to find an air-

moderate chop. On the first afternoon that I had the airplane, I took it to Big Bear Lake, 6750 feet high in the San Bernardino Mountains. On the way up, the winds off the hills chewed the air above the mountains into slashes of turbulence. The Trinidad took it all in stride, refusing to do more than bob its nose up and down. There was little yaw associated with turbulence, a factor that probably contributes more than any other to making passengers uncomfortable.

Handling in all modes is better than you could expect. I'd anticipated a heavy elevator and not particularly responsive ailerons, but the Trinidad proved far more eager to maneuver than I'd guessed. The ailerons aren't exactly

Aircraft Comparison Chart

Aircraft:	Aerospatiale Trinidad	Mooney 201	Piper T-Arrow IV	Cessna Skylane RG
Average equipped price:	\$110,000	\$125,000	\$138,000	\$123,000
Cruise (kts):	164	169	172	157
Stall (kts):	54	53	60	50
Max range (nm):	1150	902	778	1135
Fuel (gph):	14.0	10.8	12.2	13.7
Rate of climb (fpm):	1260	1030	940	1140
Service ceiling (ft):	20,000	18,800	20,000	18,000
Takeoff over 50-ft obstacle (ft):	1571	1550	1620	1570
Landing over 50-ft obstacle (ft):	1740	1550	1555	1320
Useful load (lbs):	1254	1100	1113	1192
Power loading (lbs/hp):	11.8	13.7	14.5	13.2
Wing loading (lbs/sq.ft.):	23.1	16.4	17.0	17.8
Engine horsepower:	250	200	210	235
Propeller type:	CS	CS	CS	CS
Landing gear type:	Tri/Retr	Tri/Retr	Tri/Retr	Tri/Retr
Fuel capacity (gals):	86	64	72	88
Seating capacity:	4	4	4	4
Cabin width (in):	50.4	43.5	42	44

plane that loves to climb, and the Trinidad is one of them. I tried climb at 80 knots initially (best rate of climb speed) and managed to see more than 1200 fpm with two souls aboard and almost full fuel (86 gallons). Pushed over to a more reasonable angle of attack for better forward visibility and improved engine cooling, I saw 100 knots in exchange for 1000 fpm.

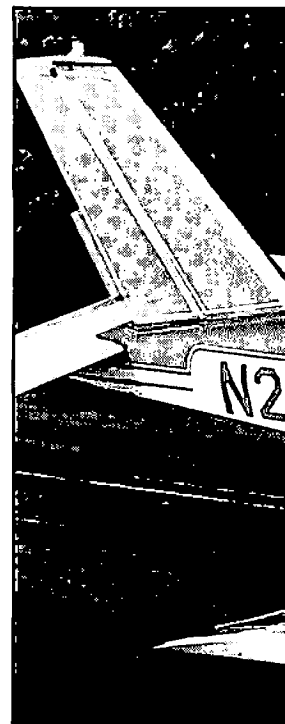
The climb doesn't seem to diminish noticeably as you gain altitude. Passing 5000 feet, I could consistently see 850 to 900 fpm in the light chop over Southern California. Aerospatiale lists the Trinidad's service ceiling at 20,000 feet, and in view of the airplane's ascension at lower levels, that certainly seems a reasonable number.

Another feature of the Aerospatiale Trinidad that's worthy of note is the airplane's excellent stability in light to

light, but they are fast if you're willing to put a little muscle into the yoke.

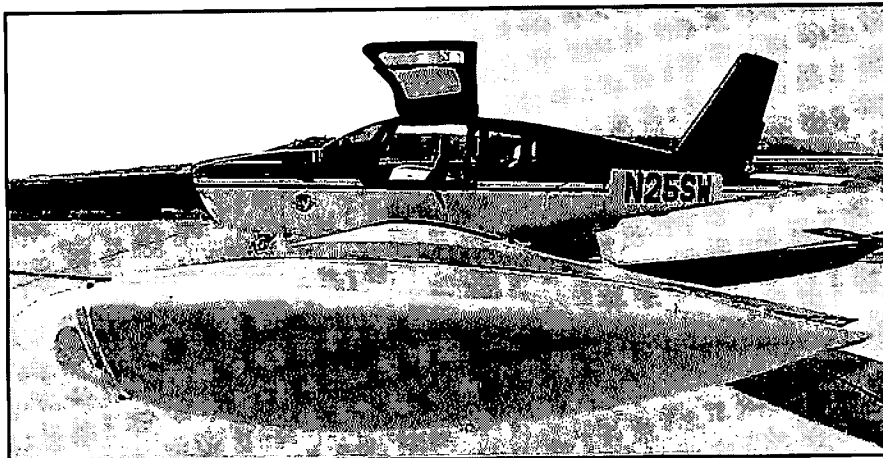
If climb, control and stability were better than average, cruise speed was a little disappointing. The book said that I should have expected to see about 164 knots at 8000 feet density altitude with 75 percent power dialed in. In fact, I saw about 158 out of the Trinidad under imperfect conditions. At 12,000 feet, where the manual told me to expect 160 knots on 65 percent, cruise was more like 153 knots, still faster than the nearest competitor.

Those aren't spectacular numbers, but somehow you don't mind so much in



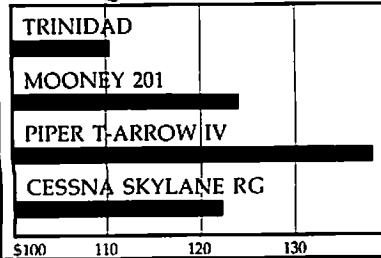
ABOVE: Climb performance is excellent. At max gross weight, the airplane can ascend at better than 1000 fpm. RIGHT: Doors on both sides make entry/exit convenient for all passengers.

TRINIDAD

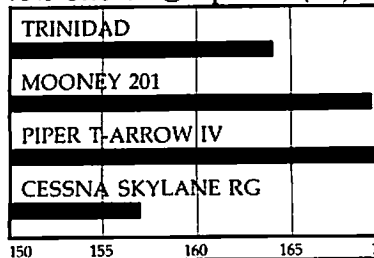


The Trinidad's fuselage and tail configuration are unusual in that, in addition to the gull-wing doors, the vertical and horizontal stabilizer are mounted independently, one ahead of the other.

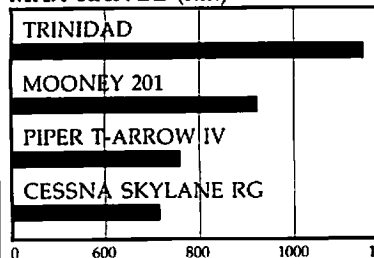
AVG. EQ'D PRICE dollars × 1000



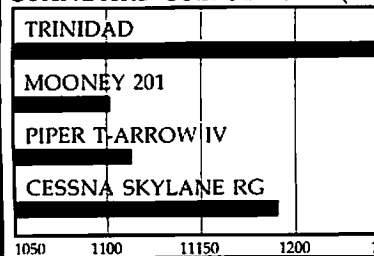
75% CRUISE @ Opt. Alt. (kts)



MAX RANGE (nm)



STANDARD USEFUL LOAD (lbs)



view of the airplane's manners in traveling cross country. It is an extremely comfortable way to fly, and the speed becomes secondary to the comfort.

Losing a few knots in cruise also has little effect on range. With 86 gallons in the twin wing tanks and a consumption rate at 75 percent of only 13.8 gph, you can plan to range out an easy 800 nm in 5.5 hours with normal reserves. Pulled back to 65 percent, the range extends another 100 nm. This means that you could fly nonstop from, say, Seattle to San Diego, or Long Beach to San Antonio.

Noise level in the Trinidad isn't exactly quiet but it's also probably no worse than American pilots are used to in Mooneys and Cessnas. I wear earplugs religiously, a precaution every pilot should take in piston airplanes, no matter how quiet he may think they are.

Slowing up for some stalls, I discovered that the Trinidad did not have a mean bone in its body. I had tried a full stall series during the checkout, and about the most excitement the Trinidad would provide was that of a hobby-horse bucking up and down. Forced into an extreme angle of attack and cross-controlled to a ridiculous extreme, I managed to get the airplane to drop a wing and depart toward a spin. It was immediately recoverable, however, and it's certainly not the kind of maneuver a pilot might encounter in normal flying. For the most part, the TB-20 is a docile machine in a stalled configuration.

Back in the pattern, the gentle flying qualities during slow flight pay off. With a gear-and-flaps stall down around 54 knots, you can easily walk around the airport at 65 knots, staying behind the 152s and Tomahawks. The TB-20 isn't as good at slow flight as was the Rallye with its leading edge slats, but the new airplane certainly enjoys flying slow as well as flying fast.

Landings are an exercise in simplicity.

1984 Aerospatiale Trinidad

SPECIFICATIONS

Base price: \$76,000
 Price as tested: \$110,000
 Engine(s) make/model:
 Lycoming IO-540-C4D5D
 Horsepower @ rpm @ altitude:
 250 @ 2575 @ SL
 Horsepower for takeoff: 250
 TBO hours: 2000
 Fuel type: 100/100LL
 Propeller make/type: Hartzell CS
 Landing gear type: Tri/Retr
 Max ramp weight (lbs): 2955
 Gross weight (lbs): 2937
 Max landing weight (lbs): 2937
 Empty weight (std) (lbs): 1701
 Equipped weight (as tested) (lbs): 1911
 Useful load (std) (lbs): 1236
 Useful load (equipped) (lbs): 1026
 Payload (full std fuel) (lbs): 510
 Fuel capacity (std) (gals): 89
 Usable fuel (std) (gals): 86
 Oil capacity (qts): 13
 Wingspan: 32 ft 6 in
 Overall length: 25 ft 4 in
 Height: 9 ft 4 in
 Wing area (sq.ft.): 128
 Wing loading (lbs/sq.ft.): 23.1
 Power loading (lbs/hp): 11.8
 Wheel base: 6 ft 3 in
 Wheel size: 6.00 x 6
 Seating capacity: 4
 Cabin doors: 2
 Cabin length: 8 ft 4 in
 Cabin width: 4 ft 2 in
 Cabin height: 3 ft 8 in
 Baggage capacity (lbs/cu.ft.): 110

PERFORMANCE

Max level speed (kts): 167

Cruise speed (kts):

	Altitude	Best Econ
75% power:	8,000	164
65% power:	12,000	160
55% power:	12,000	152

Max range

(reserve/no reserve) (nm):

75% power:	885
65% power:	964
55% power:	1010

Fuel consumption (gph):

75% power:	13.8
65% power:	12.5
55% power:	11.0

Estimated endurance (65% power) (hrs): 7.0

Stall speed (flaps up, gear up) (kts): 64

Stall speed (flaps down, gear down) (kts): 54

Best rate of climb (fpm): 1260

Rate of climb (8000 ft) (fpm): 900

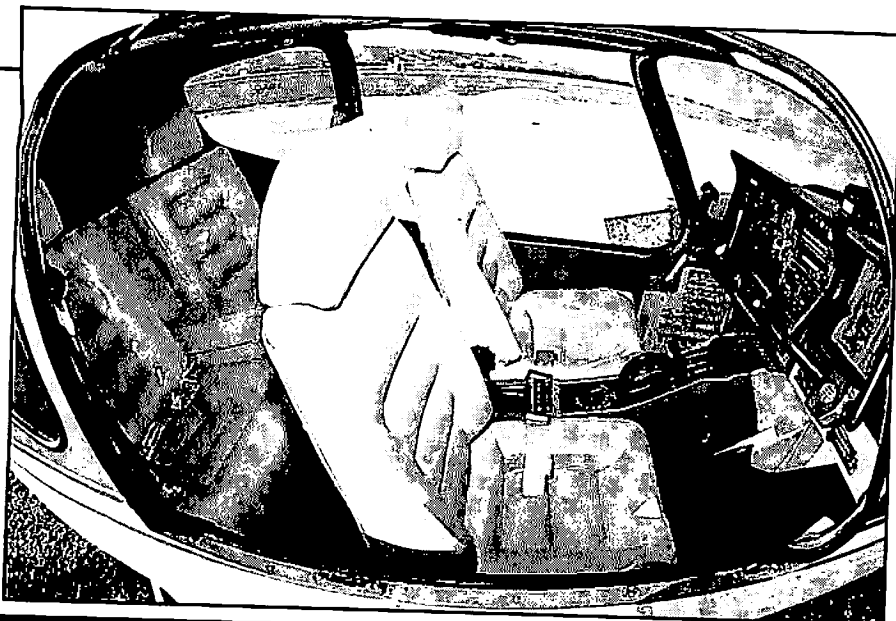
Service ceiling (ft): 20,000

Takeoff ground roll (ft): 968

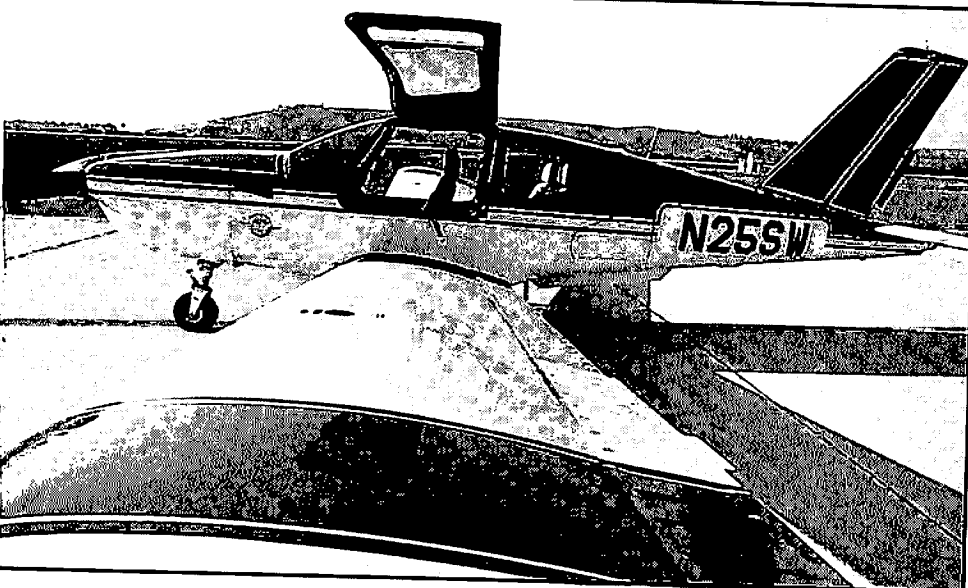
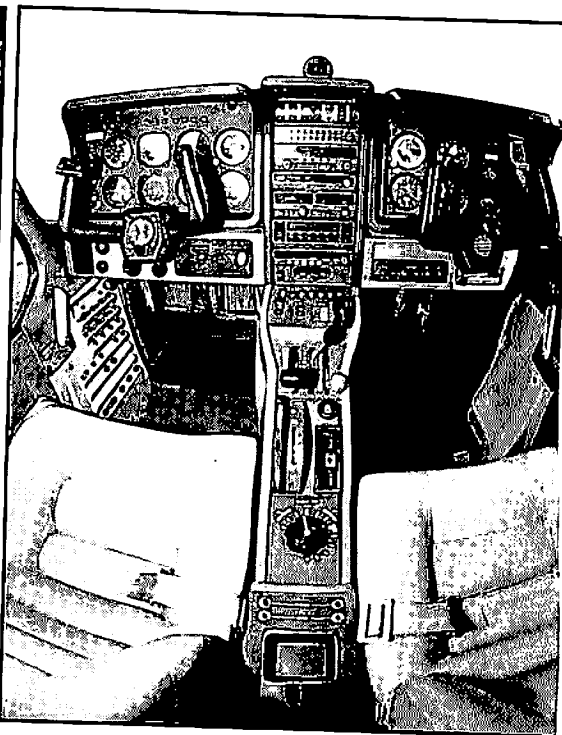
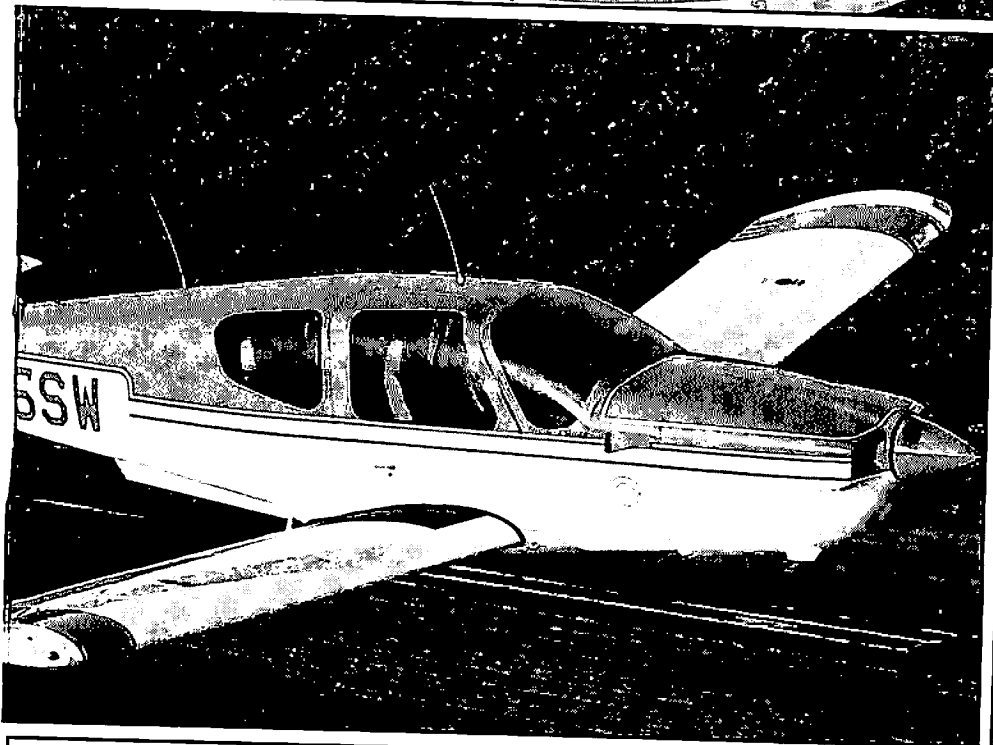
Takeoff over 50-ft obstacle (ft): 1571

Landing ground roll (ft): 755

Landing over 50-ft obstacle (ft): 1740



LEFT: Entry to the Trinidad is perhaps easier than that of other airplanes because the door is also part of the roof. BELOW: The Trinidad's panel is business-like and logical, obviously designed by pilots for pilots.





As mentioned, I tried putting the Trinidad into some tight places, and the airplane always kept me from embarrassing myself.

If price is a primary motivation in the decision to purchase an airplane, the Trinidad should have some success in competition with such machines as the Cessna Skylane RG, Mooney 201 and Piper Turbo Arrow IV. The test airplane had a base price of only \$76,000, and even with a full IFR package of King radios, it cost less than \$110,000. Equip a 201, 182 RG or T-Arrow with the same goodies, and you're likely to wind up with the same investment or more.

That means you could buy a Trinidad without paying an economic penalty, which alone may be enough to induce some prospective purchasers to scribble their signature on the dotted line. Certainly, a Trinidad is the most unusual airplane of the three and will have a strong attraction for pilots who don't want to fly what everyone else is flying.

There are tradeoffs to owning a Trinidad (slightly slower cruise and higher fuel consumption), but for the pilot who values the new and different, Aerospaciale's Trinidad may be just the ticket. •

