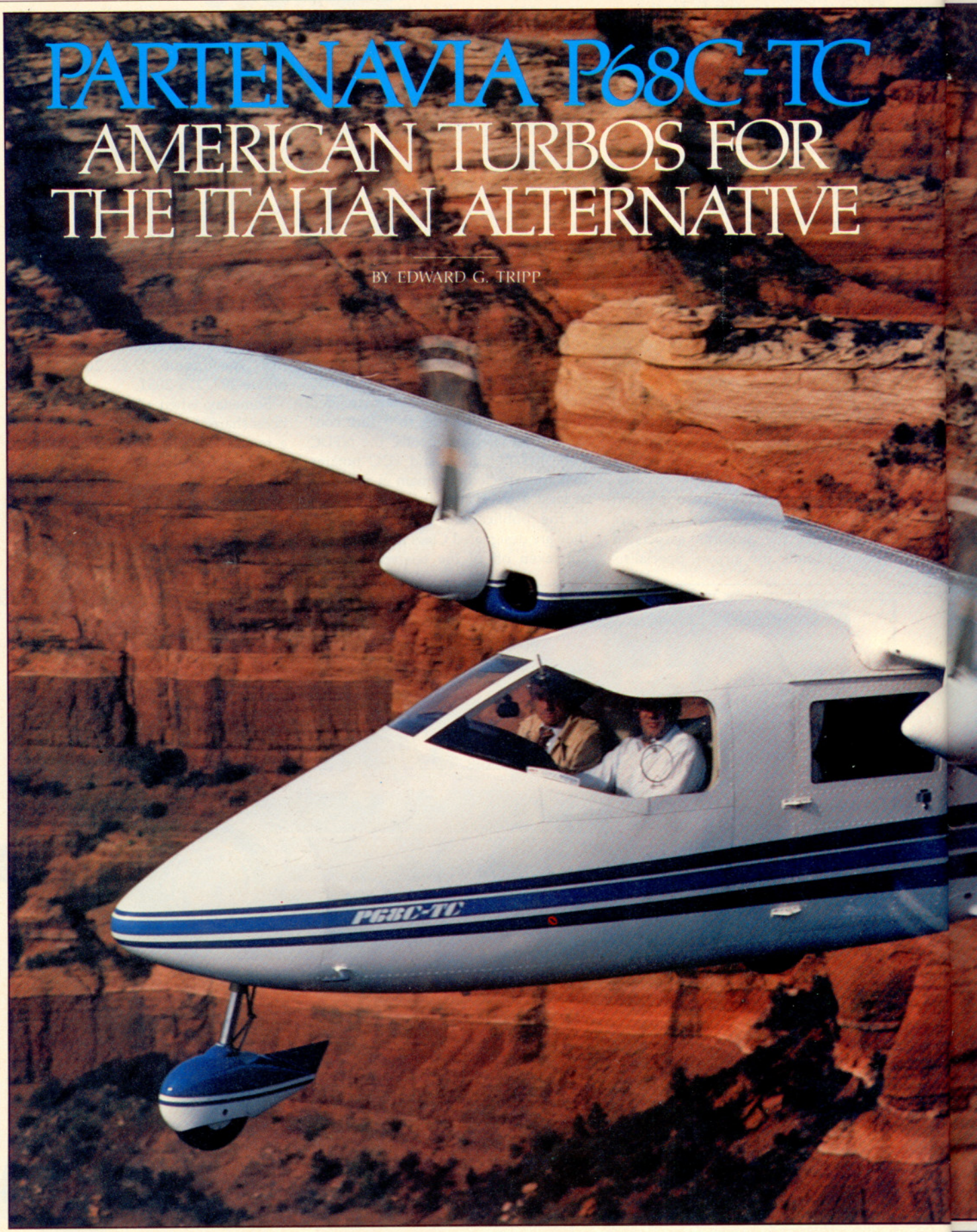
PARTENAVIA P68C-TC
AMERICAN TURBOS FOR THE ITALIAN ALTERNATIVE

BY EDWARD G. TRIPP



PHOTOGRAPHY BY ART DAVIS

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PARTENAVIA

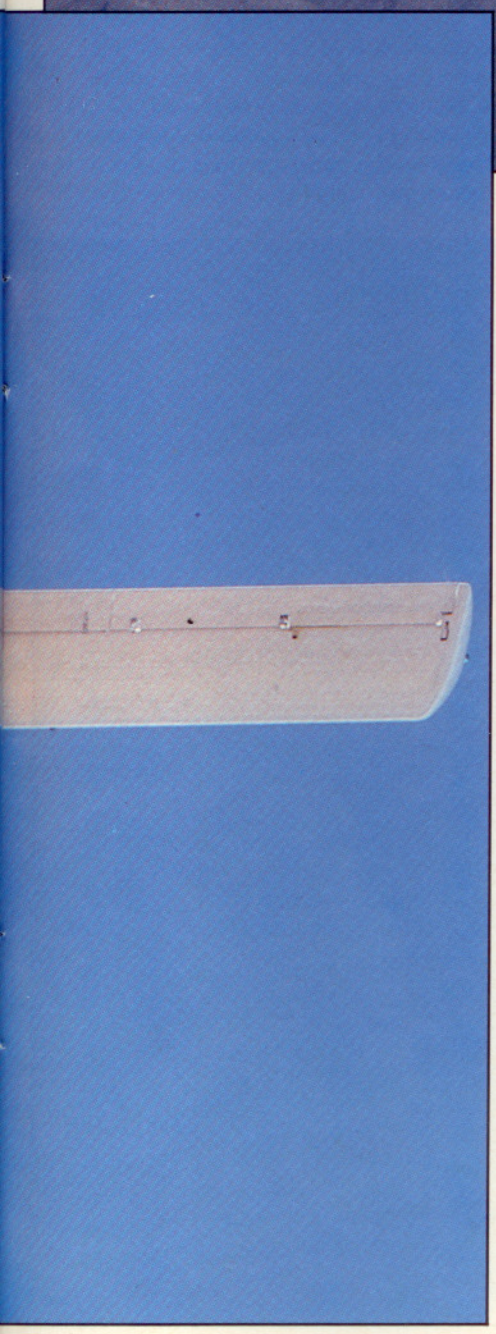
First, a confession: I have been a fan of the P-68 Victor since I first saw the preliminary concepts and operating objectives in the late 1960s. I flew it for the first time 11 years ago and have flown developments of the original a few times since. It always has been an aircraft that should have been a worthy competitor to the light twins available in this country. However, no serious effort was made to market and support the aircraft here until late 1980.

Two years ago we flew the normally-aspirated P-68C (May 1981 *Pilot*, p. 92). Recently, creative director Art Davis and I got to spend a long day with the turbocharged version that was certificated in June 1980.

In those two years, the Partenavia population in the United States (just to show what you can do with statistics) has risen by more than 500 percent: from three to 20.

While one day is not enough to sample and sift an aircraft and its performance, this one did include a good variety: a couple of long cross-country flights, three shorter ones, some short hops between airports, operations in both high- and low-density terminals, a missed approach, unstable air, a touch of weather and a couple of hours of night flight. Most of the flights were made at or close to gross weight.

N2958W is the 267th P-68 to be built and the first turbocharged model to be imported to the United States. The version of the basic Lycoming 360 series engine used in the TC is rated at 210 horsepower, employs a carburetor rather than the fuel injection fitted to the 200-hp engine in the P-68C and



Despite its fixed gear and lower price, the P-68C-TC is competitive with the Cessna Crusader and Piper Seneca.

has a fixed-wastegate Rayjay turbocharger. The cooling system is updraft, with overwing cooling air exhaust ducts. There are no cowl flaps. The magnetos are pressurized.

The carburetors mean the pilot has to monitor inlet temperatures and watch for the possibility of carburetor ice. The fixed-wastegate turbochargers require pilot care with the throttles and manifold pressure.

The only other significant equipment difference between the normally aspirated and turbocharged versions is that a 45,000 BTU Janitrol heater is standard in the P-68C-TC.

There are other differences, of course. The most apparent are precisely the ones you would expect. The TC has significantly better performance above 10,000 feet and better high-density-altitude performance, but only marginally better standard-day, sea-level performance in takeoff, climb rate (both two- and single-engine) and landing. The turbocharged version also gives up 155 pounds in basic empty weight and useful load. Because it burns more fuel at a given power setting, and because both versions carry a maximum of 822 pounds usable fuel, the TC has less range/endurance than Partenavia's normally aspirated version.

What the TC offers for its additional $11,500 in initial cost and shorter time between overhaul (1,400 versus 1,800 hours) is the improvement in hot/high performance and, for those who prefer higher altitude cruise, higher speed.

Both variants of the P-68C offer a combination of efficiency, ease of operation, good visibility, low pilot work load, excellent field performance, delightful handling qualities, loading flexibility, competitive passenger comfort, apparently low maintenance cost for twins (because of the fixed gear, simple powerplants and good access to the innards) and prices that are competitive with quite a few sophisticated singles as well as twins.

The turbocharged version gives away a few knots in cruise speed at all power settings to the Cessna Crusader and the Piper Seneca but beats them both in range/endurance at 65-percent power at 10,000 feet. It has the lowest payload with full fuel of the three (the Seneca is the clear winner by more than 150 pounds), but it has the highest twin- and single-engine climb rates. Cabin dimensions are competitive. The Partenavia TC has the lowest power rating of the three and the lowest base and equipped prices. It is interesting to note that the aircraft is competitive in

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performance with the Crusader and the Seneca, even though it has fixed gear.

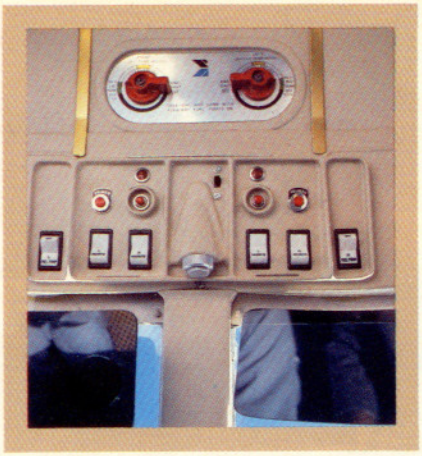
Despite attempts to develop scientific procedures to compare handling characteristics, it still is determined largely by subjective preference or reaction. To me, the Partenavia has the most harmonious controls of the three, as well as the highest level of yaw and lateral stability. This shows up most significantly in turbulent air and at low speed.

Aircraft with light, responsive controls usually trade those qualities for high instability and high pilot work load in turbulence. The Partenavia doesn't display that, at least in my experience. It is one of the easiest aircraft to fly through the bumps, even during approach, that I have flown. Hand flying it for hours at a stretch is not tiring or annoying, except that you have to keep after pitch trim when passengers are moving around a lot in the cabin.

It is a very easy aircraft for transitioning pilots to fly and should be one of the easiest twins for single-engine pilots to convert to. The only tricky part for some pilots is a tendency to overcontrol in pitch during the final stages of landing and flare. This characteristic is similar to that of a Skyhawk or a Skylane.

There is a change in visual clues that tends to confuse some transitioning pilots, too. The cockpit is relatively far ahead of the wing and the engines, similar to the Aero Commander series and the Aerostar, and the nose slopes away from the windshield. Pilots used to the visual clues of wing and nose have a little difficulty getting used to establishing the proper attitude for rotation and flare. However, control forces in pitch are fairly light, and the aircraft is responsive to control input, so adjustments are easy to make.

The cockpit is arranged logically. Ahead on the panel are the basic flight instruments, avionics and engine and



PARTENAVIA

A logical office: avigation instruments in front, electrical switches at left, fuel and sparks above.

fuel gauges. Primary electrical switches and circuit breakers are arrayed on the left side panel and lower left main panel, with the basic engine controls—fuel selectors, magneto switches, fuel pump switches and starter switches—in an overhead console.

Visibility ahead and to the sides is very good (it takes some craning to notice that the gear is fixed). In fact, the only weak point about the entire arrangement is that the glareshield is too shallow; lights reflect in the windshield, particularly to the sides, during night flight.

Preflight, engine start and ground handling are all good, although some care must be taken to ensure clearance since the wingtips are behind the pilot's eyes-forward peripheral vision.

The spring-steel main gear has both a lot more give and more feedback in ground operation, during takeoff on rough surfaces and during landings. (It can make a hard or otherwise bad landing softer but longer work because of its resilience and stored energy.)

Noise level in the aircraft is average, which means it is loud—particularly in the cockpit and during full-power operations. Yet conversation or critical badinage between the front and rear seats can be carried on without strained vocal chords.

During a flight from Los Angeles to Phoenix, I traded seats with Davis. In addition to the lower noise level in the rear, the generous window arrangement and the high wing make the passenger space quite comfortable and make sightseeing an unencumbered joy. (How many times have you tried to point out a landmark to passengers in a low-wing airplane only to have the wing blocking their view?)

The cubic volume of the cabin is good, including the large baggage bay behind the aft bench seat. It is rated for 400 pounds and is almost large enough for another seat or two. The baggage door is large and can be opened from the inside for convenience and for an emergency exit.

Because of the interior volume, the Partenavia is easy to overload. Care must be taken in planning payload and range. A well-equipped TC with a full load of fuel will have just enough weight allowance left to allow for three people and a bit of baggage. There is no zero fuel weight to take into consideration (although maximum landing weight is 220 pounds less than gross weight). The CG range of the aircraft is quite good and allows a variety of loading arrangements within the fore and aft limits.

The basic TC is equipped with sufficient equipment to fly. The basic list includes gyro instruments, carburetor air temperature gauges, engine fire warning system, heated pitot, annunciator lights, Hobbs meter, dual controls, dual 70 ampere-hour alternators, a single strobe, external power plug, partial avionics wiring, static discharge kit and internal corrosion proofing.

A 9.5-percent price increase has been imposed for 1983. At the same time, Aeritalia has changed the basic equipment installed at the factory to include the buyer's choice of a Collins Micro-Line or a King Silver Crown avionics system. Each includes dual nav/com, audio panel, glideslope, marker beacon, ADF and encoding altimeter.

This decision limits the practical choice for purchasers and raises the basic price of the Partenavia TC version to $190,500.

There is also a fairly long list of options. Several variations on Edo Century I or III autopilot systems, including slaved compass systems and Sperry radars, are available. There are differ-

PARTENAVIA USA: MIRA'S MARKET

Mira Slovak came to the United States via an unauthorized diversion of the C-47 he was flying for his native Czechoslovakia's airline. That was in 1953. In the 30 years since that adventure, he has had many others, including air racing, distance flights, air show flying, hydroplane racing, record setting and winning awards. In the process, he has survived and recuperated from spectacular misadventures. He also has spent a lot of time and effort trying to get people in this country to recognize the blessings of our democracy and phenomenal freedom.

From time to time over the years, his small aircraft sales company has represented small European manufacturers. In 1980, after a long period of negotiation and prodding, he became the distributor for Partenavia in North America (although the aircraft has not been certificated in Canada). That same year, the tiny Naples, Italy, design and manufacturing company was taken over by an Italian government aerospace conglomerate, Aeritalia. (Aeritalia, in turn, is controlled by an even larger government conglomerate, IRI-Finmeccanica).

Slovak told us that 15 P-68Cs were sold in this country in 1982. Total production run was approximately 50 aircraft last year. In 1983, 30 aircraft are scheduled for the States and Mexico.

Mira Slovak Aviation (Post Office Box 822, Santa Paula Airport, Santa Paula, California 93060) is moving into larger facilities and has appointed seven dealers around the country.

One dealer, Windward Aviation of Mesa, Arizona, is sponsoring a P-68C aerobatic demonstration flown by Wes Winter. So far, 17 shows have been booked this year. Slovak and Windward Aviation hope this tip of the hat to Bob Hoover's famous Shrike Commander routine will help spur buyer interest.

Long-range goals include the shipment of airframes to this country, where the U.S. components would be added and the aircraft completed. This would reduce costs, including the average $8,000 ferry flight from Naples and double import duties on the components.

Slovak feels the good sales record in last year's depressed aircraft market with a small dealer network is a strong indication that the P-68C has good potential in the United States. *—EGT*

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Turbo P-68C, left, has different paint and engine cowlings, but its real difference from the Victor is evident in a high/hot takeoff.

PARTENAVIA

Thanks to a high wing, the P-68C cabin is a room with a view.

ent hatch arrangements for photogrammetric work, an optional copilot flight instrument package, full deicing equipment (the P-68Cs are not certificated for known icing in the United States) and a few interior options, including club seating, leather upholstery and a small table for the cabin.

The Partenavia is a competitive light twin in terms of initial cost, operating cost, mission flexibility, performance and maintainability.

It seems to be establishing a toehold in the North American market that should improve its reception here. A majority of the bits, pieces, components and accessories are U.S. manufactured items, from the wheels and brakes to the lights.

Still, emotion plays a part in this market's evaluation of the Partenavia. A friend of mine, whom I consider open-minded and somewhat of a numbers-cruncher when it comes to evaluating aircraft, said recently: "Yeah, but who would buy a fixed-gear twin that probably doesn't have enough speed or range to compete over here?"

Only time, availability and a dealer network can tell. □

Partenavia P-68C-TC
1983 Base price $190,500
Price as tested (N2958W) $172,000
AOPA Pilot Operations/Equipment Category*:
IFR $187,175 to $215,875

Specifications

Powerplants	2 Avco Lycoming TO-360-C1A6D 210 hp @ 2,575 rpm, 42 in MP Recommended TBO 1,400 hr
Propellers	2 Hartzell two-blade, constant speed, full-feathering 76 in dia
Length	31.33 ft
Height	11.15 ft
Wingspan	39.37 ft
Wing area	200.2 sq ft
Wing loading	21.91 lb/sq ft
Power loading	10.45 lb/hp
Seats	6-7
Cabin length (including baggage compartment)	11 ft 9 in
Cabin width	3 ft 10 in
Cabin height	4 ft
Empty weight	2,866 lb
Empty weight, as tested	2,957 lb
Gross weight	4,387 lb
Useful load	1,521 lb
Useful load, as tested	1,430 lb
Payload w/full fuel	699 lb
Payload w/full fuel, as tested	608 lb
Max landing weight	4,167 lb
Fuel capacity, std	852 lb (822 lb usable) 142 gal (137 gal usable)
Oil capacity, ea engine	8 qt
Baggage capacity	400 lb, 20 cu ft

Performance

Takeoff distance, ground roll	755 ft
Takeoff distance over 50-ft obst	1,260 ft
Accelerate/stop distance	1,670 ft
Max demonstrated crosswind component	25 kt
Rate of climb, sea level	1,550 fpm
Single-engine ROC, sea level	290 fpm
Max level speed, 17,500 ft	195 kt
Cruise speed/Range w/45-min rsv, std fuel (fuel consumption, both engines)	
@75% power, best economy	
12,000 ft	172 kt/775 nm (159.9 pph/26.65 gph)
20,000 ft	182 kt/810 nm (159.9 pph/26.65 gph)
@65% power, best economy	
12,000 ft	161 kt/940 nm (122.4 pph/20.4 gph)
20,000 ft	171 kt/970 nm (122.4 pph/20.4 gph)
@55% power, best economy	
12,000 ft	149 kt/1,020 nm (102 pph/17 gph)
20,000 ft	158 kt/1,050 nm (102 pph/17 gph)
Max operating altitude	20,000 ft
Single-engine service ceiling	14,500 ft
Landing distance over 50-ft obst	1,600 ft
Landing distance, ground roll	705 ft

Limiting and Recommended Airspeeds

Vmc (Min control w/critical engine inoperative)	65 KIAS
Vx (Best angle of climb)	76 KIAS
Vy (Best rate of climb)	95 KIAS
Vyse (Best single-engine rate of climb)	95 KIAS
Va (Design maneuvering)	130 KIAS
Vfe (Max flap extended)	
17°	157 KIAS
17-30°	143 KIAS
30-35°	101 KIAS
Vno (Max structural cruising)	158 KIAS
Vne (Never exceed)	200 KIAS
Vr (Rotation)	70 KIAS
Vs1 (Stall clean)	66 KIAS
Vso (Stall in landing configuration)	61 KIAS

All specifications are based on manufacturer's calculations. All performance figures are based on standard day, standard atmosphere, at sea level and gross weight, unless otherwise noted.
**Operations/Equipment Category reflects this aircraft's maximum potential. See June 1982 Pilot p. 93.*