



SITSEERS

OBSERVER

A new nose for business

BY EDWARD G. TRIPP

One of the first aircraft to visit AOPA's new headquarters in Frederick, Maryland, was the Partenavia Observer. Really, the droves of people who flocked to look at this unusually configured aircraft were the observers.

The aircraft shown in the accompanying photographs, N2959B, is the first Observer in the United States. It will initially have two missions: as a demonstrator to prospective buyers and as a platform for a variety of aerial survey and photographic jobs.

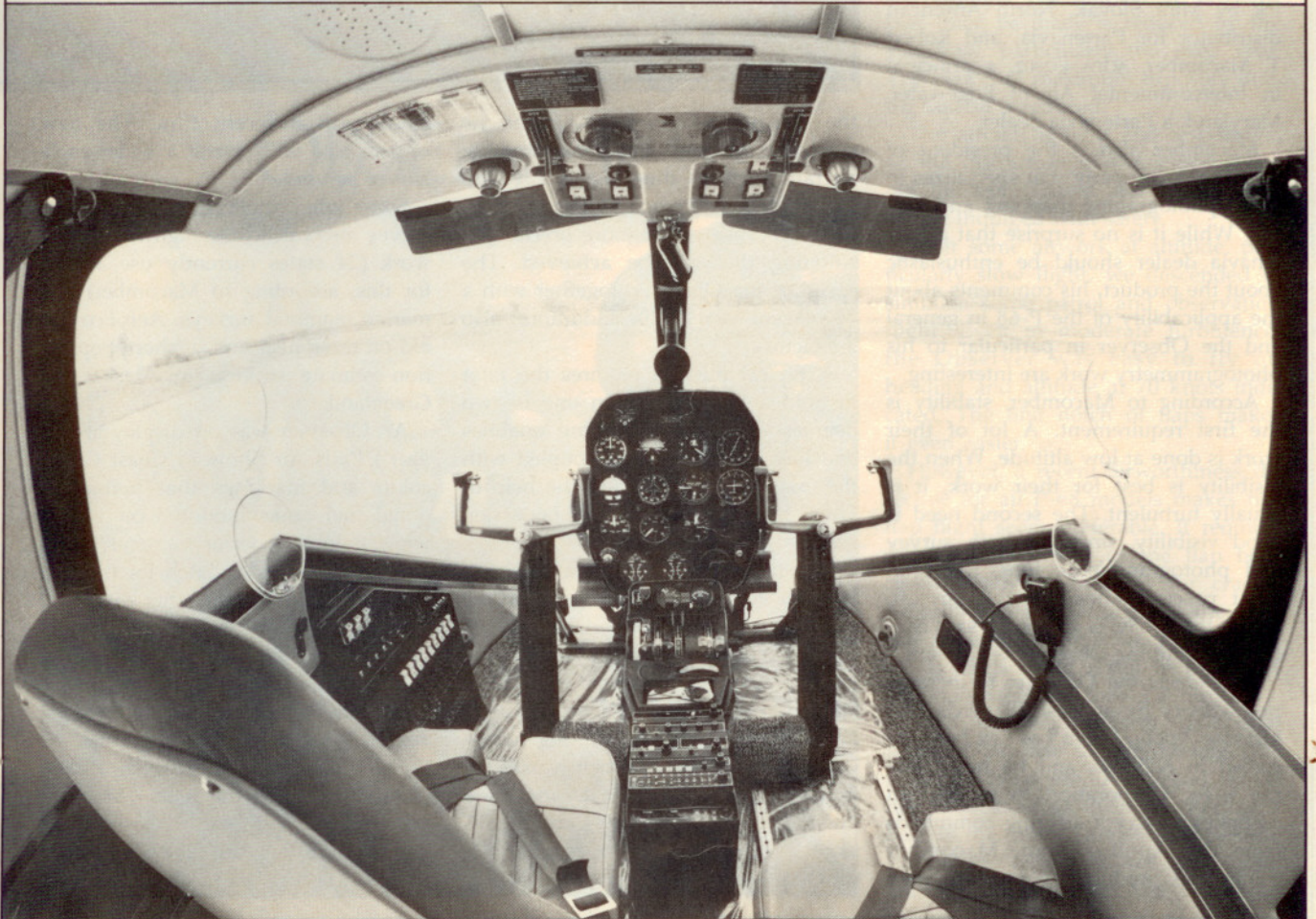
It is the latest development of a special-use aircraft that was first conceived

and modified by Sportavia-Putzer, a subsidiary of the German aerospace conglomerate MBB. Its principal feature is the transparent forward fuselage that provides forward and downward visibility comparable to that of a helicopter. The first unit flew in February 1976 and went to work with the German police for patrol and observation work to replace helicopters in missions that did not require the vertical capability of rotary-wing aircraft.

The P-68 is well-suited to such tasks. The high-wing configuration together with the pilots' positions located well

ahead of the leading edge of the wing, nacelles and propeller arc provide excellent visibility even in the standard aircraft (see "Partenavia P-68C," May 1981 *Pilot*, p. 92 and "Pilot Précis: Partenavia P-68C-TC," May *Pilot*, p. 74). Although light for a twin, it is a very stable aircraft that has good low- and high-speed performance. Operating economics are quite attractive and, because of the simplicity of the design, maintenance costs should be low for a multi-engine aircraft.

Partenavia built the first Observer in its Naples, Italy, factory in early 1980;



the Observer was certificated in June of that year. By May 1983, eight had been delivered, including N2959B.

Changes have been made on the flight deck to improve the already excellent visibility. The engine and flight instruments have been relocated in a panel that looks as though it has been lifted directly from a helicopter. The previous configuration had a central panel with strip panels between the console and the sides of the cockpit. Avionics are mounted in a console that runs from below the engine controls back between the pilot seats. Aside from the relocation of certain systems controls to a sub-panel on the left wall of the cockpit and the large control columns, the rest of the cockpit is similar to the standard P-68.

Improvements have been made to cockpit ventilation. The large greenhouse becomes very hot, and fatigue is a concern during the long endurance missions for which the Observer is suited. An optional air-conditioning system is being evaluated to further improve pilot comfort.

The Observer that several *Pilot* staff members flew was brought to Frederick by Mira Slovak, North American distributor for Partenavia, and Robert T. Macomber, AOPA 492002, a principal in Intercontinental Air of Edgewater, Maryland, a Partenavia dealer.

Macomber also is the president of AeroEco, a company that specializes in aerial photography, mapping and survey. While it is no surprise that a Partenavia dealer should be enthusiastic about the product, his comments about the applicability of the P-68 in general and the Observer in particular to his photogrammetry work are interesting.

According to Macomber, stability is the first requirement. A lot of their work is done at low altitude. When the visibility is best for their work, it is usually turbulent. The second need is good visibility, since for both survey and photogrammetric jobs, the pilot must precisely position the aircraft. "Even the P-68C is so good," says Macomber, "but the Observer is a dream."

He expects the Observer to increase productivity by at least 20 percent. A Morrow Apollo Loran has just been installed in N2959B, and he has asked the S-Tec Corporation to modify an autopilot to accept steering commands from the Apollo Loran. Macomber thinks the productivity increase over



the Geronimo-converted Apache he currently operates and other favorite aircraft, such as the Cessna 206 and 210 models, will reach 50 percent with Loran because of the more precise positioning that can be achieved. The speed of the Observer, together with a 70 percent increase in endurance, also are factors.

A typical mission requires the pilot to hold a heading within one to two degrees. The good handling qualities and low pilot work load coupled with the excellent visibility and the help of Loran make precise tracking far easier, according to Macomber.

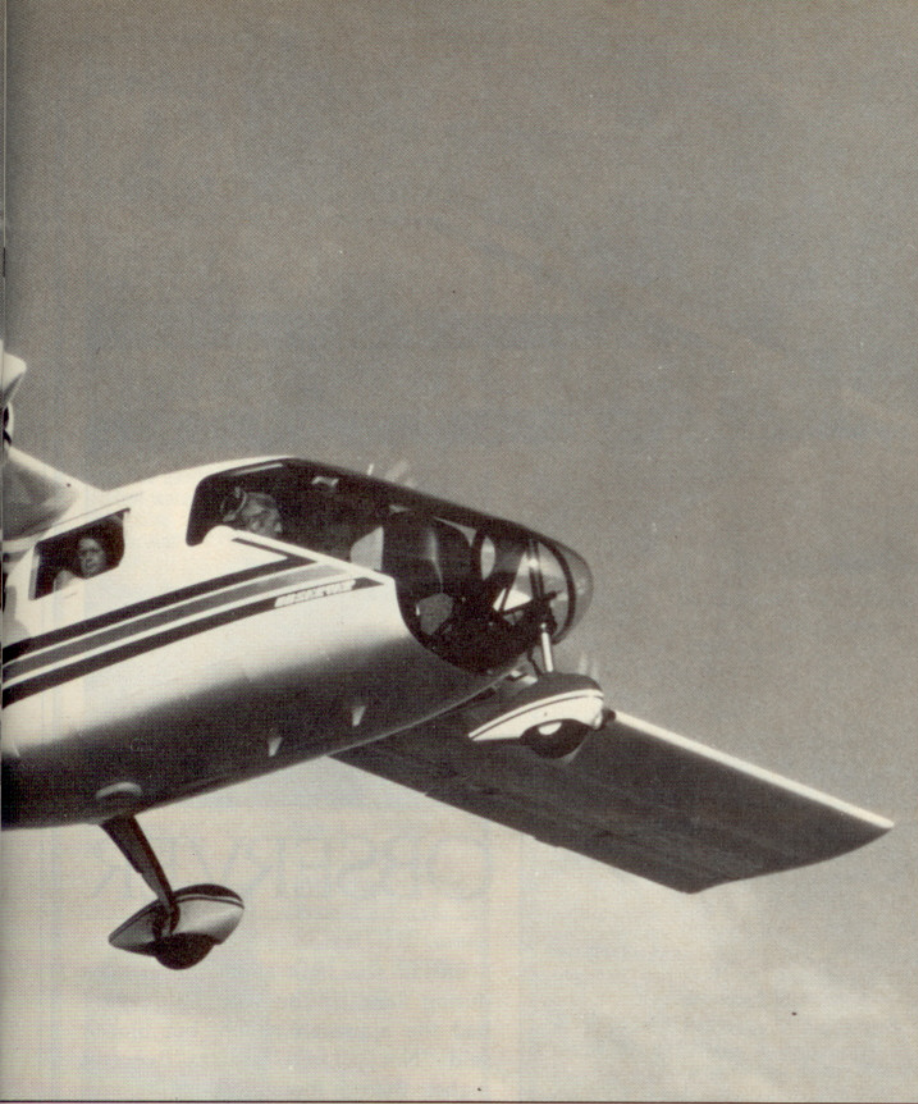
Partenavia offers a camera hatch located in the belly of the fuselage at the fourth seat position for aerial photography. The 18 by 23 inch opening is not enough for the camera Macomber wants to install (it is a Jena, made in East Germany). He is working to obtain an STC for two 24-inch-square apertures, one in the same location and one in the baggage bay. Certain missions require either two cameras for different types of imagery, or two mis-

sions with different film. The new camera also will permit a wider-angle lens to be used.

Some other applications of an aerial survey aircraft include highway survey work (24 states currently use aircraft for this, according to Macomber) and marine mammal surveys. AeroEco has bid on three near and offshore population-estimate surveys in Alaska and Greenland.

An Observer was on display at this year's Paris Air Show in Coast Guard colors and markings that had additional fuel tanks mounted on underwing pylons, exterior cameras, side-looking radar and a hatch for cameras or for dropping rafts or other gear.

When we were preflighting the airplane for the first flight of the day, Slovak said that the only difference between the Observer and other P-68 aircraft I had flown was the visual impression and false clues from all the glass surrounding the pilot. "Most pilots tend to think they are closer to the ground than they are. The tendency is to flare too high on landing," he said.



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It was a clear, 80-degree day, humid but with almost none of the haze that is typical in the Middle Atlantic States at that time of year. There were five people on board with partial fuel. The aircraft was right at gross for takeoff. Even on the ground, the visual sensation is almost like flying a helicopter—or a Breezy or most ultralights, without the wind and bugs in your face. Tracking the centerline of the taxiway and runway is simple.

The impression of acceleration in the initial stages of takeoff is great, as is the temptation to fixate too close to the nose instead of down the runway.

Vmc is 60 knots, five knots below the stalling speed without flaps. I lightened the nose at 65 KIAS; the aircraft flew off at about 70 knots and accelerated to Vyse, 88 knots, quickly.

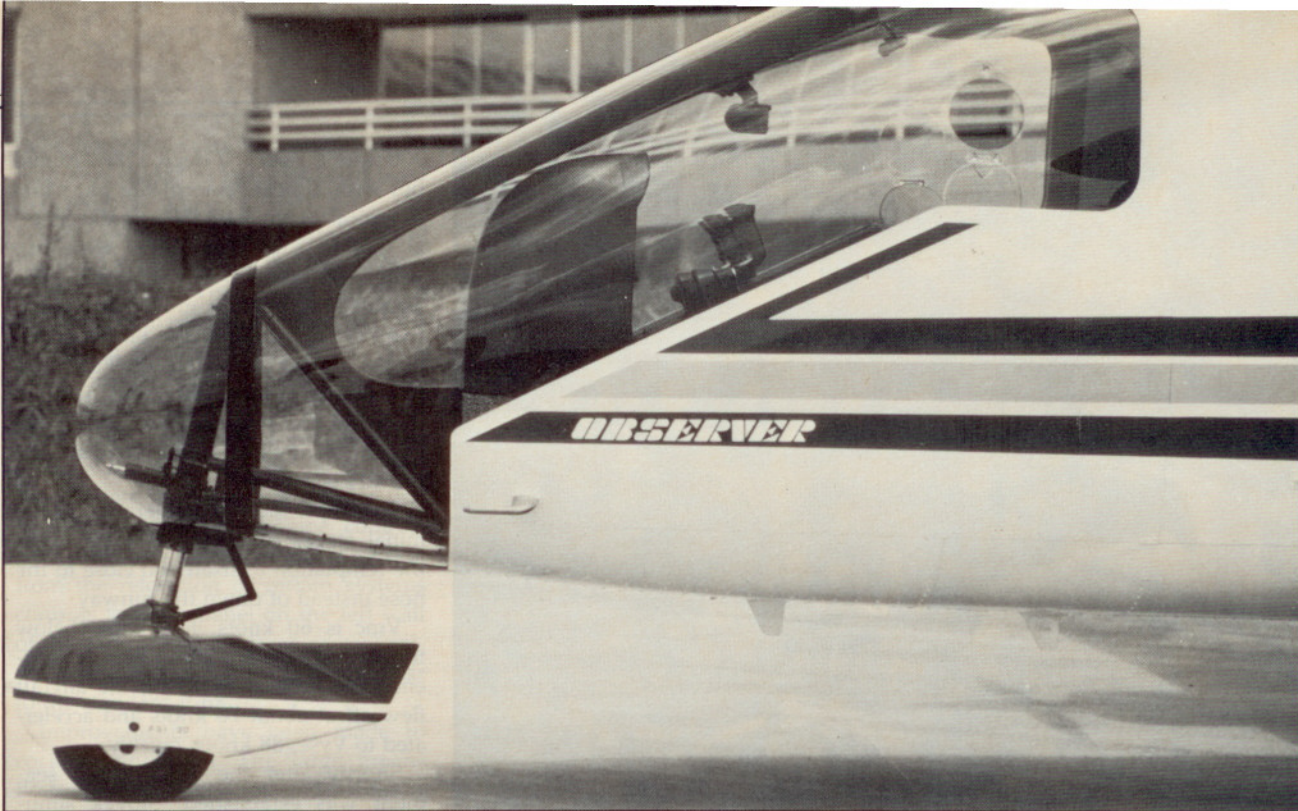
Shortly after the initial climb segment was established, Slovak simulated a right engine failure. Recognition was easy, as was configuring the aircraft for single-engine flight. Climb rate settled at approximately 200 fpm. The simulated emergency was easy to handle, despite the load and the high-density altitude. The number of decisions that must be made is reduced by the simplicity, particularly the fixed gear. The period of maximum exposure during takeoff is reduced.

The aircraft is light and responsive, so the distraction of the superb view out the front, down and to the sides can be indulged with safety.

After some airwork at altitude, particularly slow flight, we descended to simulate some patrol and observation flight. Even in moderate turbulence, the Observer was easy to fly on heading and altitude at 70 knots indicated. The first notch of flaps makes it even easier.

However, a recent airworthiness directive for all P-68 models makes no-flap flight seem preferable. It requires repetitive inspection of the flap bellcrank mounting brackets for cracks. According to the factory and the Federal Aviation Administration, failure of the brackets could result in failure of the flap system and loss of control.

As a working platform for special missions or just for sightseeing, the Observer is superb. The visual sensation is outstanding, even for passengers back in the cabin. There would be little excuse for failing to see and avoid another aircraft from the Observer.



Partenavia P-68 Observer

Base price \$200,260
(including choice of Collins Micro-Line
or King Silver Crown avionics)

U.S. delivery \$8,000
Price as tested \$212,505

AOPA Pilot Operations/Equipment Category*:

Cross-country \$203,255
IFR \$230,715-\$232,905

Specifications

Powerplants	2 Lycoming IO-360 A1B6 200 hp @ 2,700 rpm
Recommended TBO	1,800 hr
Propellers	2 Hartzell 2-blade, constant speed, full feathering 72-in dia
Length	30 ft 8 in
Height	11 ft 2 in
Wingspan	39 ft 4 in
Wing area	200.21 sq ft
Wing loading	21.58 lb/sq ft
Power loading	10.98 lb/hp
Seats	6 to 9
Cabin length (including baggage compartment)	11 ft 9 in
Cabin width	3 ft 8 in
Cabin height	4 ft
Empty weight	2,821 lb
Empty weight, as tested	2,861 lb
Gross weight	4,321 lb
Useful load	1,500 lb
Useful load, as tested	1,460 lb
Payload w/full fuel	678 lb
Payload w/full fuel, as tested	638 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	750 ft
Takeoff distance over 50-ft obst	1,270 ft
Accelerate/stop distance	1,550 ft
Max demonstrated crosswind component 25 kt	
Rate of climb, sea level	1,600 fpm
Single-engine ROC, sea level	320 fpm

Max level speed, sea level 174 kt

Cruise speed/Range w/45-min rsv, std fuel
(fuel consumption, ea engine)

@ 75% power, best economy
9,000 ft 165 kt/1,005 nm
(123.6 pph/20.6 gph)

@ 65% power, best economy
9,000 ft 158 kt/1,108 nm
(109.8 pph/18.3 gph)

@ 55% power, best economy
9,000 ft 149 kt/1,180 nm
(96 pph/16 gph)

Service ceiling 20,000 ft

Single-engine service ceiling 7,800 ft

Landing distance over 50-ft obst 690 ft

Landing distance, ground roll 1,570 ft

Limiting and Recommended Airspeeds

Vmc (Min control w/critical engine inoperative) 60 KIAS

Vx (Best angle of climb) 76 KIAS

Vy (Best rate of climb) 90 KIAS

Vxse (Best single-engine angle of climb) 76 KIAS

Vyse (Best single-engine rate of climb) 88 KIAS

Va (Design maneuvering) 130 KIAS

Vfe (Max flap extended) 17° 157 KIAS

30° 143 KIAS

35° 101 KIAS

Vno (Max structural cruising) 158 KIAS

Vne (Never exceed) 200 KIAS

Vr (Rotation) 70 KIAS

Vs1 (Stall clean) 65 KIAS

Vso (Stall in landing configuration) 56 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 Categories are defined in June 1983 Pilot, p. 96. The prices reflect the costs for equipment recommended to operate in the listed categories. For further information, contact Mira Slovak Aviation, Post Office Box 822, Santa Paula, California 93060; telephone 805/525-2191.*

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continued

Slovak was right about the miscues during flare, by the way. I thought I had the approach nailed, but Slovak said "Not yet, Ed." I was five feet higher than I thought. Only his reminder kept me from a red-faced splat and bounce.

After other staff members flew the airplane, there was no disciplined debriefing. Their wide grins and excitement obviated that.

Aside from compliance with the flap-bracket AD and routine maintenance, probably the biggest chore in keeping the Observer up to snuff will be maintaining all that plexiglass. It is not an aircraft on which I would want to let just anyone clean the "windshield."

The Observer seems well fitted to its missions. Macomber has put more than 170 hours on N2959B to date, including a swing around the country and quite a few demonstration flights.

It is a special kind of business airplane, one that is not an adjunct to making money by getting you to your plants and customers, but one that is the tool by which money is made.

And, probably, there are a few well-to-do pilots who might just try one on for the combination of practicality and differentness, or because sightseeing, as opposed to siteseeing, is their primary mission. □