MU-2P

One of a Kind

It'll get in and out of 1,800 feet with ease and do better than 300 knots besides.

text and photography by Russell Munson

IT LOOKED SHORT. The chart said the grass strip was 2,000 feet long. Halfway down final, though, I suddenly noticed white cones placed across the far end of the runway, well short of the 2,000-foot mark. Bruce Boehm, the Mitsubishi demonstration pilot, made no move to go around. Things were coming fast, now: 90 knots over the fence, down with a thump, props in reverse—and we turned off comfortably before the markers.

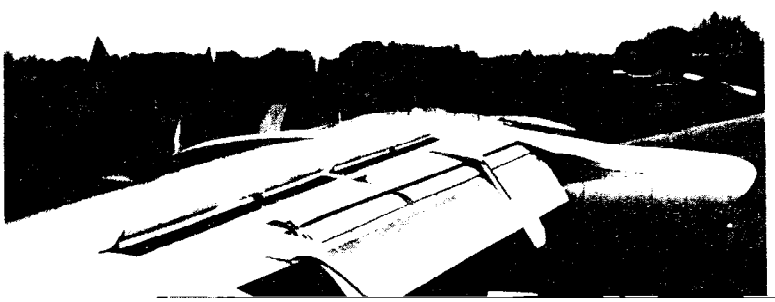
"Didn't even use the brakes," commented Boehm, as color returned to my face. This was an airplane a bush pilot could love, and the gear had smoothed out the uneven surface like a Mercedes-Benz on a country road.

"How long is this strip?" I asked a local pilot.

"The charts say 2,000 feet, but it's really 1,800."

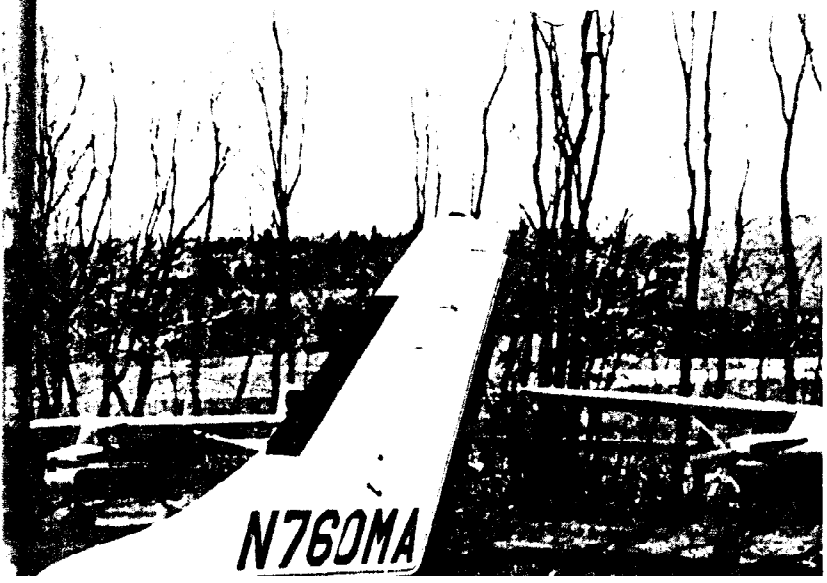
We were light, 8,800 pounds compared to the maximum takeoff weight of 10,470, and it was cool, but that kind of short-field performance for an executive airplane that is capable of cruising at over 300 knots is unique.

That's what's so interesting about the Mitsubishi; the whole doggone airplane is unique. The MU-2 was originally conceived as a totally new design; it wasn't an adaptation of an earlier airplane, nor did it look like any other machine. The MU-2 was created with specific speed and short-field performance goals in mind; it is these capabilities that give it beauty in the eyes of



Spoilers give good slow-speed roll control—plus room for those wide-span Fowler flaps.

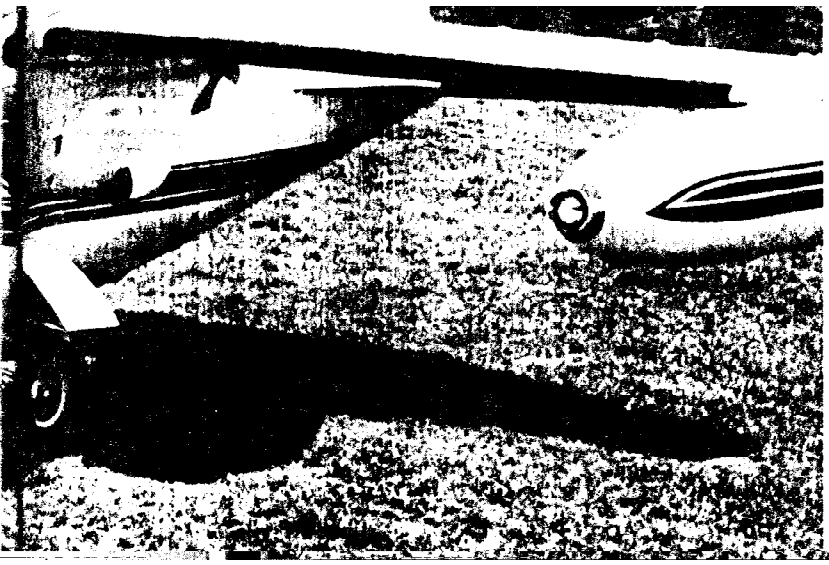
One way to learn about an airplane is to let it talk to you. The MU-2P has a lot to say right on the ground. Look at the gear: same design as the F-104's (which Mitsubishi used to build under license) and perfect for rough fields. The four-blade props, new last year, provide a 21-inch ground clearance, so whatever else



MU-2P

sticks and stones may do, they won't break your blades, and the MU-2 is the only turboprop without restriction on the ground use of reverse pitch.

The wing tells a story, too: it's short (just over 39 feet for such a heavy airplane, and its high-speed design helps make this the fastest turboprop on the market. The factory claims maximum cruise of 317 knots at average weight, but even at more conservative power settings, 300 knots or more is entirely realistic. The MU-2P is not only the fastest airplane in its class, but it also has the highest wing loading. This could have made it a hot ship needing plenty of runway, but when you check the wing from the rear, you see why the MU-2 has the second shortest runway requirement among its competitors. Spoilers replace the ailerons to good advantage; they remain equally effective at all airspeeds, eliminate adverse aileron yaw and, most significantly, permit space for almost full-span double-slotted Fowler flaps. When fully extended, the flaps increase wing area by 24 percent and reduce stalling speed by 24 knots. With a good power-to-weight ratio, unrestricted reverse thrust and a dual-personality wing, the Mitsubishi can have its cake and eat it too.

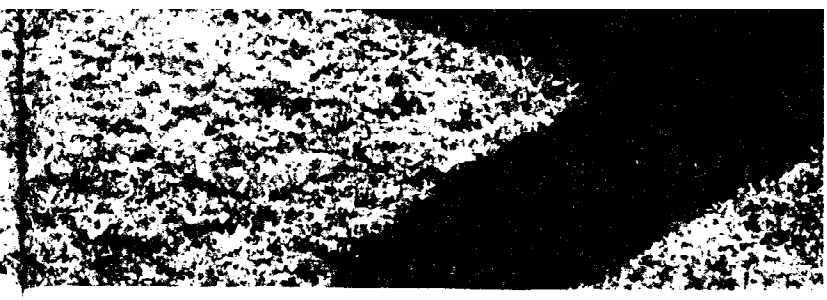


A prospective buyer would enjoy walking down the

look inside the cabin with its structure laid bare can only inspire confidence. The airplane is well built, with a lot of attention to detail.

The fuselage allows a comfortably spacious cabin. Although the standard rear bench would be a snug fit for three adults, it's roomy for two; even with good-sized people in the facing club seats, there is plenty of leg room.

With the push of a button, the little AiResearch TPE 331-5-252Ms begin to whir until the familiar whine of an idling turboprop sneaks into the cockpit. During the start, the pilot keeps an eye on the interstage turbine-temperature indicator to make sure it stays within limits. There are two ways to hurt a turboprop engine: take too much power from it or let it get too hot. In the event of a potentially damaging hot start, the pilot would immediately shut down the engine. Normally, however, there's nothing to do but push the button and watch in fascination as the needles of the torque meter, ITT gauge, tachometer and fuel-flow indicator begin to move higher to the accompanying crescendo of sounds.



A short stopper with almost two feet of prop clearance,

(continued on page 64)

continued from page 63

Instead of the throttle, propeller and mixture control that a piston engine requires, the AiResearch unit needs only two levers. The power lever corresponds to a conventional throttle control, and the condition lever replaces the propeller control. The power lever moves from reverse, the most rearward position, through ground idle and flight idle to takeoff, at its most forward point. The condition lever moves from emergency stop, which both feathers the engine and shuts off its fuel, to taxi, minimum cruise and takeoff-land at its firewall position.

When I began to taxi, the nosewheel, linked directly to the rudder pedals, seemed quite stiff. Steering with the pedals was a waste of energy, though, for the power levers, moved together or differentially, in and out of reverse as necessary, made taxiing an effortless, enjoyable little tap dance.

By the time the engines are started, the pilot has already completed most of the pretakeoff checklist. There's no run-up; you just slide the condition levers to takeoff when turning onto the active and feed in the power levers. Acceleration at our light weight was exhilarating.

The new four-blade props turn 409 rpm [illegible] model because of an extra gear in the reduction assembly; the result is less noise and clockwise rather than the usual counterclockwise propeller rotation. On takeoff, therefore, the pilot needs left rudder pressure instead of right.

Because the MU-2 sits at a negative angle of attack, it doesn't gracefully leave the runway of its own volition; instead it requires a pronounced back pressure for rotation, then an immediate release of this pressure after takeoff to keep the nose from angling up too sharply. This seems abrupt at first, but smoothness is quickly learned.

Best single-engine angle-of-climb speed at our weight was 114 knots, which I would use for a normal takeoff. For those of strong faith, taking off at Vmc (93 knots) allows the airplane to clear a 50-foot obstacle in 1,800 feet at gross on a standard day. This would be a strain on my nervous system, but it's nice to know the performance is there.

After our departure, the power levers had to be pulled back almost to flight idle to comply with the 200-knot TCA restriction. We were soon clear of the area, however, and level at 14,500 feet under the watchful eye of New York Center.

The Mitsubishi has a stick shaker but, at Boehm's suggestion, clean and dirty stalls were held until a complete break. They were thoroughly benign. In fact, the airplane is powerful enough to be flown out of the stall without lowering the nose below the horizon as in a normal recovery: just push the power levers forward. That much reserve is nice to have, and it is reflected in the airplane's 760-fpm single-engine rate of climb, at a typical weight of 9,250 pounds.

In both cruise and slow flight, the spoilers were as advertised—consistently responsive, reasonably light for this type of aircraft and hard to distinguish from ailerons.

With Boehm minding the store, I went back to sample each passenger seat and found them all quiet and comfortable. The noisiest seat in the house is the copilot's, but all locations in the four-blade Mitsubishi seemed significantly quieter than the three-blade model I flew in several years ago. The most common criticism of the airplane has been successfully countered.

Getting down from altitude is easy: move the power to flight idle and point the nose down. No need to worry about shock cooling or detuning a sensitive engine. Throughout our rapid up-and-down trip to 14,500 feet, the pressurization system did its job with such precision that out of four eardrums not one popped. Cabin temperature was also remarkably consistent; neither system was adjusted during the flight.

The turbulence increased noticeably below 5,000 as we descended for some landings and takeoffs. On final approach, the airplane suddenly had something new to tell me: "Keep your hands to yourself, stupid."

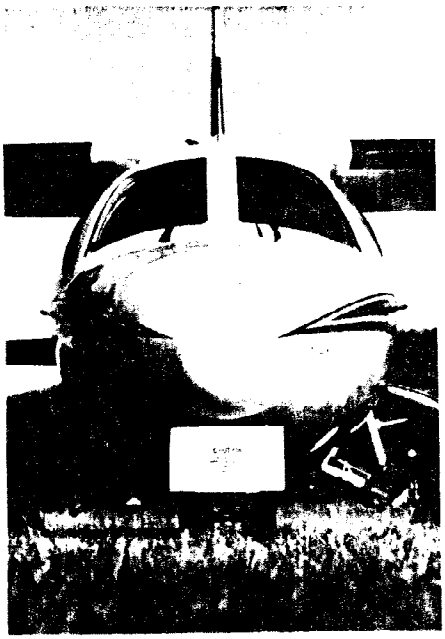
[illegible] tank was at least half full, and the wind was gusty. At first, it seemed that whatever I did with the spoilers elicited no immediate response. This was largely caused by roll inertia from the tip tanks, and it encouraged me to apply more control input than needed to counteract the gusts. My overcontrolling made the first few approaches twice as much work as necessary. This is a characteristic that takes getting used to.

Landings are not completely satisfying if you appreciate classic, nose-high roll-outs. Touchdowns are gentle enough, but the wheel must be pulled all the way back as soon as the mains touch to keep the nosewheel from coming down unnecessarily hard.

Every airplane is a compromise, trying to give the most advantages with the least disadvantages. After spending some time with the MU-2P, I realized how carefully this airplane's tradeoffs have been thought out. The ratio of good to bad is impressive, indeed.

It's of passing interest that the MU-2's attributes have pricked up the ears of the dope-smuggling community. These folks are drawn to marginal airstrips and have been known to slingshot the Mitsubishi out of a rock-strewn cloud of dust, turn off the automatic torque limiter, pull 110-percent power and trim the cactus at 300 knots indicated. That's exceeding the operating limitations by far, of course, but these pilots have so much trust in the airplane that they are unconcerned with such details.

Even if you're not into smuggling yourself, the MU-2P will give you performance, comfort and low operating costs in a combination that's just not available anywhere else. It's one of a kind. □



Mitsubishi MU-2P

The price given is for the airplane flown for this report. Its equipment included IFR instrumentation, [illegible] dual transponders, radar altimeter and an eight-track stereo, plus other airframe options normally ordered on this aircraft.

Price, as tested	$877,000
Engines	AiResearch TPE 331-5-252M, 665 shp each
Props	Hartzell four-blade, full-feathering, reversible
TBO	3,000 hrs.
Length	33 ft. 3 in.
Height	12 ft. 11 in.
Wingspan	39 ft. 2 in.
Wing area	178 sq. ft.
Wing loading	58.8 lbs. per sq. ft.
Power loading	7.9 lbs. per hp
Seats, as tested	7
Empty weight, as tested	7,050 lbs.
Useful load, as tested	3,420 lbs.
Payload with full fuel, as tested	1,236 lbs.
Gross weight	10,470 lbs.
Usable fuel capacity, as tested	364 gals./2,184 lbs.
Maximum landing weight	9,955 lbs.

Performance at standard conditions, from pilot's operating handbook

Maximum rate of climb	2,450 fpm
Single-engine rate of climb	475 fpm
Single-engine climb gradient at 150 kts. (Vyse)	190 ft. per nm
Service ceiling	32,200 ft.
Certificated ceiling	28,000 ft.
Single-engine service ceiling	16,800 ft.
Max cruise at 16,000 ft.	306 kts.
Econ cruise at 24,000 ft.	272 kts.
Duration at max cruise	3.9 hrs.
Duration at econ cruise	5.9 hrs.
Stalling speed, clean	103 kts.
Stalling speed, full flaps	78 kts.
Pressurization differential	6 psi
10,000-ft. cabin at	31,200 ft.