

# The Mooney Ovation at



All grown up and everyplace to fly



**T**ypical of two-year-olds, Mooney Aircraft's M20R Ovation demands lots of attention. In fact, buyer attention has made the sleek new design Mooney's sales leader, displacing the perennial favorite, the MSE.

With 54 Ovation deliveries in 1995, Mooney produced about three times as many M20Rs as it did its flagship TLS and the smaller MSE. In total, the Kerrville, Texas, company built 88 aircraft last year, up from 66 in 1994 and 65 in 1993. The 1996 production schedule calls for 120 airplanes, with the Ovation again leading the pack.

The Ovation is a commonsense kind of airplane. It extracts sizzling performance from a tried-and-true engine and airframe, yet makes life easy for the pilot by embracing sophisticated and modern systems.

**By Thomas B. Haines**

The Ovation's faster sibling, the TLS, gets its 220-knot maximum cruise speed by utilizing a turbocharged 270-horsepower Lycoming

PHOTOGRAPHY BY MIKE FIZER



TIO-540 engine. The turbo'd airplane is terrific for those who need to fly high and for those who don't mind paying the higher acquisition, fuel, and maintenance costs associated with such an installation. But until the Ovation debuted in 1994, Mooney customers who didn't need a turbo were shown the MSE, an efficient 200-hp, 168-knot airplane, but one that uses a shorter fuselage.

The Ovation, then, filled a gap in Mooney's lineup. Its normally aspirated 280-hp Continental IO-550-G allows a max cruise speed of 190 knots in the comfort of the TLS's 20-inch-longer fuselage. Like the TLS, the brawny Ovation carries with it enough redundant systems to get it through almost any in-flight crisis short of an engine failure.

An engine-driven vacuum pump normally drives the Ovation's gyros, but another engine-driven pump is always in standby. A 100-amp alternator powers the electrics, but if that packs it in, two batteries pick up the slack. If you



Large, smooth overhead and side composite panels give the Ovation one of the most attractive interiors available.

run down a battery in an attempt to start the engine on a cold morning, flip the switch and bring on the fresh one.

Ovations equipped with Mooney's newly certified TKS anti-ice system come with even more redundancies. The Ovation is the first normally aspirated piston-powered single to be certified for flight into known icing. The certification criteria demand complete

electrical redundancy for the two pumps that push the anti-ice fluid through tiny holes in the titanium leading-edge skins. The fluid keeps ice from adhering to the surfaces. Ovations with the TKS option come with two alternators, using up one of the engine pads typically occupied by the standby vacuum pump. In that case, an electric standby pump is placed in the tailcone—a normal configuration for the TLS, which comes standard with two alternators and two batteries.

In either airplane, the TKS system adds about \$35,000 to the price tag and 39 pounds to the empty weight. With the TKS tanks filled with 6 gallons of fluid, the weight goes up another 54 pounds. Mooney officials predict that 40 to 50 percent of TLS buyers will opt for the TKS system, while about 25 to 30 percent of Ovation buyers will pony up the extra money. The system is available on the MSE, but the lack of redundan-





cies prevents it from being certified.

The 1995 base price for the Ovation was \$225,750; but typically equipped, the cost climbed to about \$318,000. The average TLS, meanwhile, flew out of Kerrville for \$370,000. For 1996 the base prices went up about five percent. Another price increase is possible this year, but it will bring with it additional

after-sale services for the customer, according to Mooney. Details of the new plan had not been finalized at press time.

Regardless of the model, all new Mooneys come with a training package at FlightSafety International's San Antonio facility. The two higher-end products also come with two-year spinner-to-tailcone warranties. The MSE carries a more conventional one-year warranty.

Mooney plans to expand the Ovation's

options list further in March when a new air conditioning system becomes available. The \$13,600 engine-driven system adds 60 pounds to the 2,225-pound empty weight. Air conditioning is retrofittable to Ovations already in service.

#### The high road

The Ovation brings much versatility to the pilot. A turbocharged airplane is at its peak up high; most normally aspirated airplanes don't produce much power above 10,000 feet. The Ovation, though, performs well in either regime and in between. Fly high, fly low, fly fast, fly far,

Completely enclosed landing gear, a thin wing, and sleek fuselage aid the big Continental in pulling the Ovation along at up to 190 knots.



# Fly high, fly low, fly fast, fly far, the Ovation has a mission profile to fit the job.

the Ovation has a mission profile to fit the job.

Last November, I had an opportunity to sample just how versatile the Ovation can be when I flew N9163E—the airplane shown on these pages—from the factory to Frederick, Maryland. The 55-hour-old Ovation leaped the 1,200-nautical-mile journey in 6 hours and 40 minutes of flying time, about the same amount of time it had taken me to fly on Southwest Airlines from Baltimore to Houston a few days earlier. Despite the Boeing 737's speed advantage, the total time en route for the two trips ended up about the same. For the Southwest trip, I had to leave the house two hours before the scheduled departure time and change airplanes in Nashville before landing at Houston Hobby Airport about seven hours after leaving home.

A 30-minute fuel stop at McKellar-Sipes Regional Airport in Jackson, Tennessee, just northeast of Memphis, brought the trip in the Mooney up to about the length of the airline flight. Of course, Frederick Municipal is only 15 minutes from home. Southwest would have dropped me at Baltimore—an hour away.

## Homeward bound

I leveled off at 11,000 feet about nine-and-a-half minutes after takeoff from Kerrville's 1,600-foot-elevation airport, for an average climb of 990 fpm. With full fuel of 89 gallons and some baggage, the airplane was about 350 pounds below the maximum gross weight of 3,368 pounds.

As a rule, normally aspirated airplanes reach their top cruising speeds between 7,000 and 9,000 feet. The Ovation, for example, peaks at 9,000 feet, where the true airspeed stretches to 190 knots. But while most airplanes begin struggling to climb above that altitude, the Ovation—with its 280-hp engine strapped to a sleek airframe—still climbs well. In an earlier near-max-gross-weight situation, N9163E was still climbing at 1,100 fpm

through 8,500 feet and 800 fpm at 12,000 feet. The Mooney sales staff routinely flies Ovations in the mid- to high teens. Apparently many customers intend to use those altitudes, as well. About 30 percent of buyers opt for the \$4,500 oxygen system.

Unlike other Mooneys, the Ovation has no cowl flaps to mess with. While the airplane was flying around Kerrville, where surface temperatures were in the 70s and temps at altitude were about standard, the cylinder head temperature gauge never climbed much above the middle of the green arc. In the cooler Northeast, the Ovation needed its winterization kit installed. Oil temperatures never struggled into the green arc.

After leveling off just northeast of Kerrville, the Ovation quickly accelerated. At a 65-percent best-power setting of 20 inches of manifold pressure and 2,400 rpm, the airplane turned in 182 knots true airspeed on 14.3 gallons per

## Engine efficiency extolled

### A perfect match of fuselage and powerplant

To many in the general aviation community, the words *Mooney* and *efficiency* are synonymous. With a sleek fuselage and flush-riveted surfaces on much of the wing, Mooneys have always extruded more speed per gallon of avgas than any other production airplane. For years, Mooneys have used various 200- and 210-horsepower engines to deliver speeds that leave many more powerful competitors in the prop wash. Therefore, it was not surprising that some Mooney aficionados gasped when the company introduced the Ovation with its big-bore Continental engine.

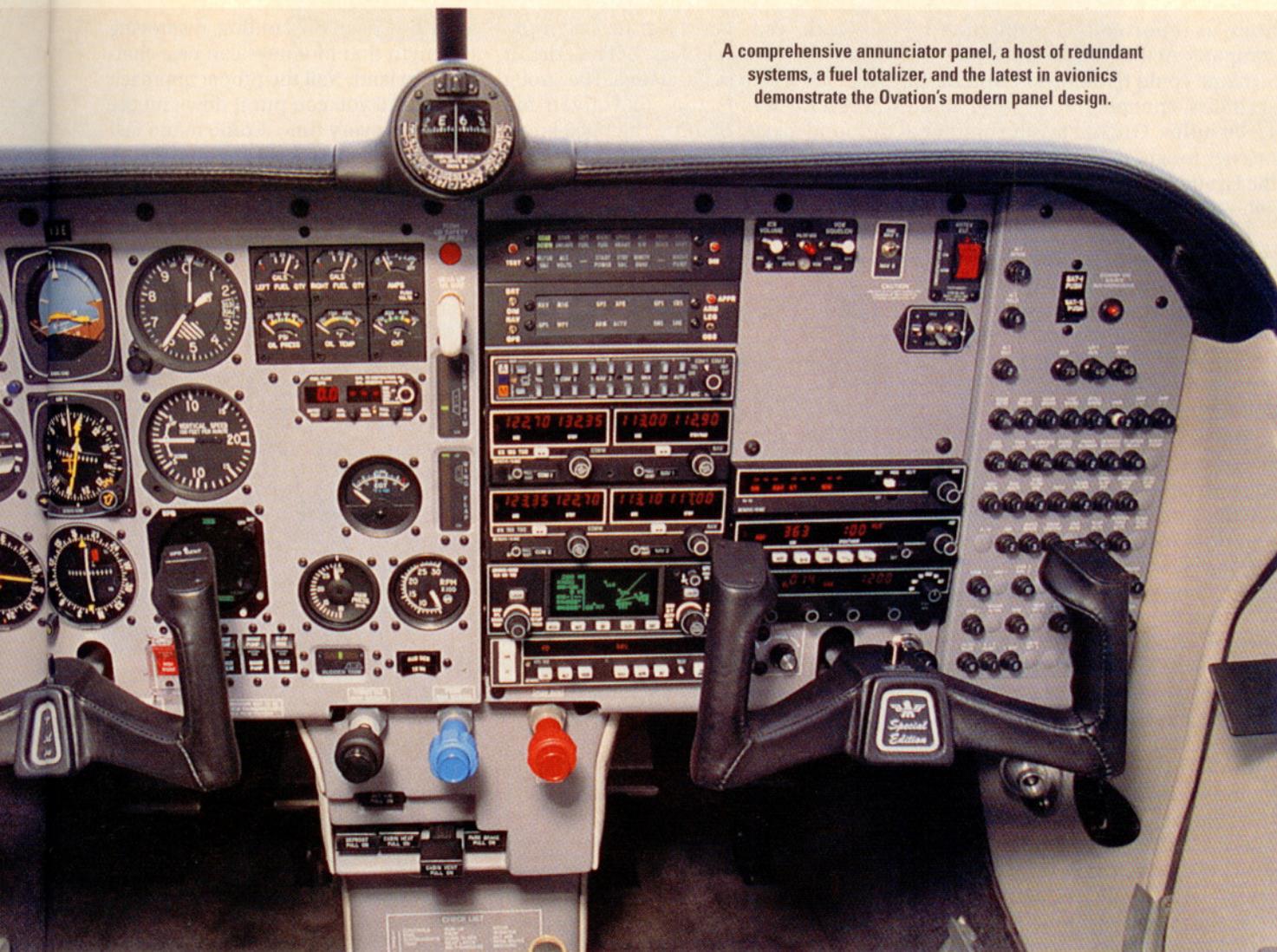


But its 280 hp notwithstanding, the Ovation's Continental IO-550-G engine brings with it a fuel efficiency that a Mooney lover can appreciate. The Continental-claimed fuel specific of 0.38 pounds per horsepower per hour comes in part from the tuned induction system. The engine's induction-air intakes drape across the top of the engine like a tarantula sunning itself on a rock. By equaling the distance the air travels to each of the cylinders, the induction system assures a nearly balanced mixture of fuel and air in each cylinder.

A more equal fuel/air distribution means a smoother-running engine—which is noticeable in the Ovation—and the ability to lean the mixture more aggressively, since all cylinders should peak at about the same fuel flow.

Other IO-550 models typically put out 300 to 310 horsepower while turning at 2,700 rpm. Continental limits

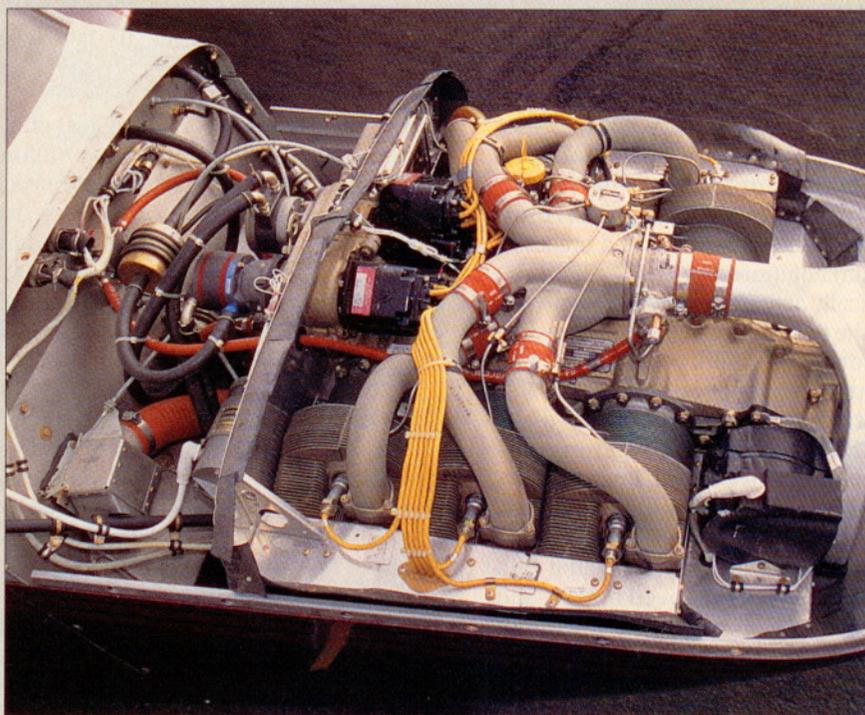
A comprehensive annunciator panel, a host of redundant systems, a fuel totalizer, and the latest in avionics demonstrate the Ovation's modern panel design.



the rpm to 2,500 in the -G variant, derating the engine to 280 hp but upping the published TBO to 2,000 hours from 1,700 in other normally aspirated IO-550s.

To the Ovation pilot, the derating means simplified engine operation. For takeoff, put all the levers forward. They can stay that way through about 5,000 feet msl. Thereafter, in the climb, a flick of the mixture control every thousand feet or so will keep the exhaust gas temperatures in the blue arc on the EGT gauge. Upon leveling off, the pilot, if desired, can leave the throttle and prop full forward and lean normally. And without any cowl flaps to contend with, the Ovation comes about as close to a single-lever power control as you'll find in today's market.

—TBH



hour, as reported by the Shadin fuel computer. At that consumption rate, the airplane could remain aloft for almost six hours, enough time to cover about 1,100 miles. On an earlier flight at a heavier weight down at 9,500 feet msl, the Ovation turned in 185 KTAS on 15.5 gph—a 75-percent power setting.

I spent the time over Texas, Louisiana, and Mississippi learning the Ovation's sophisticated avionics panel and marveling at how the company has been able to improve on the airplane's design over the years. I've flown a mid-1960s Mooney a few times. It's efficient and simple, but a bit austere.

The day before I visited Kerrville, Bob Overmyer, *AOPA Pilot's* new columnist, allowed me to fly his 1978 Mooney 201 in the Houston area. His is a nice airplane that meets his needs well. However, in the 18 years since Overmyer's 201 was built, Mooney has done a remarkable job of improving the comfort and equipment in its airplanes. No longer do you sit low in the airplane with legs stretched horizontally. In modern Mooneys, the pilot sits more upright, with knees bent. Mooney de-buted a new style of interior with the Ovation, one that has subsequently been adapted for the TLS and, just this year, for the MSE. The leather interior with its smooth, cloth-covered overhead panels gives the airplane a more spacious, airy feel, as do the larger windows. Additional soundproofing reduces interior noise. An overhead panel for lighting switches helps to declutter the instrument panel and gives the interior an airliner look.

### Getting down

Like other sleek, high-performance airplanes, the Ovation will go down or slow down, but it won't go down *and* slow down without dramatically decreasing power or deploying speed brakes. Fortunately, Mooney provides speed brakes as standard equipment on the Ovation. The electrically actuated speed brakes deploy from the top of the wing with the push of a button on the pilot's yoke. They can be deployed at any speed up to  $V_{NE}$ .

Anticipating the usual slam-dunk visual approach from Washington-Dulles Approach Control, I began slowing the Ovation 20 miles from Frederick. Ten miles out, with the airport in sight and still at 4,000 feet, I canceled IFR with Dulles, deployed the speed brakes, and managed a 1,500-fpm descent without any increase in airspeed or further reduction in power, all the while keeping the CHTs well into the green arc.

By the time I crossed the last of the Catoctin Mountains west of Frederick, it was about 10 p.m. local time. The strong westerly winds that had given me groundspeeds of more than 200 knots during the last leg demanded a landing on Frederick's Runway 30. Down low, the wind kicked up turbulence that the Mooney, with its high wing loading, tolerated well. Even in the gusts, I man-

aged a respectable landing, disproving the myth that Mooneys can be a challenge to land. Nail the proper approach speed and you can put it down on the numbers every time. Come in too fast and you'll float—true of any airplane.

The trip showcased the Ovation's capabilities. Conduct a day's business and then fly home across half a continent in time to catch the late news. The

## The new faces of Mooney Aircraft

### New airplanes still the charge

While other general aviation manufacturers have been in and out of bankruptcy, quit manufacturing light airplanes, or all but ignored their piston lines, Mooney Aircraft has soldiered on through the industry's 15-year doldrums.

Three new models—the PFM, TLS, and Ovation—have rolled out of the Kerrville, Texas, factory over the last eight years. That's more new piston-powered models than any other manufacturer.

Part of the company's sustaining grace is its versatile work force. Subcontracting for larger companies now makes up about 25 percent of Mooney's annual revenue. The subcontract work helps the company weather general aviation's notoriously erratic sales cycles, says Jeff Dunbar, Mooney's newly appointed chief operating officer.

Until last fall, Dunbar had served as vice president of sales. When company President Jacques Esculier hired on with AlliedSignal last September, Dunbar got the nod from Mooney's French owners to take over the day-to-day aircraft business. Meanwhile, Bing T. Lantis, a retired entrepreneur, was hired as president and chief executive officer. Lantis says his biggest challenge is expanding the subcontracting business and seeking new areas of growth for the airplane manufacturing.

Currently, Mooney is involved in a subcontracting deal through E-Systems. E-Systems won a major contract to overhaul the U.S. Navy's aging Lockheed P-3 Orion fleet. Mooney's task as a subcontractor is to build parts for the P-3's tail surfaces. The P-3's horizontal stabilizer is as large as a Mooney's wing, Dunbar notes. In addition, Mooney builds some 2,500 part numbers for Boeing, 500 parts for Lockheed F-16s, and additional parts for Bell Helicopter.

Dunbar, 44, came to Mooney from his family's business in Ohio after spending six years in the Air Force as a ground radar operator. Dunbar regularly used general aviation aircraft in his work with the family's mobile-crane manufacturing business. In 1988, he joined Mooney as a regional sales manager in Ohio. He later handled sales in the New England region before going to the factory as V.P. of sales in 1992.

Lantis, meanwhile, joined Mooney management out of retirement. The 49-year-old California native recently sold his interest in The Lantis Corporation, manufacturer of airline containers and pallet loaders. Since he earned his pilot certificate at age 22 he has owned a variety of aircraft that he used for personal and business flying. But prior to accepting his new position, he had never flown a Mooney nor been to the Mooney factory. His current airplane is a Beech B36TC Bonanza. "That's for sale," he assures. He now has eyes only for a TLS. —TBH



Mooney COO Jeff Dunbar



Mooney President and CEO Bing T. Lantis

airplane's sophisticated avionics and autopilot ease pilot workload; the redundant systems provide peace of mind. All this on your own schedule and with the satisfaction of having done it yourself. Not a bad way to go. □

**Mooney M20R Ovation**

Base price: \$225,750

Price as tested: \$318,120

**Specifications**

Powerplant	Continental IO-550-G, 280 hp @ 2,500 rpm
Recommended TBO	2,000 hr
Propeller	McCauley three-blade, constant-speed, 73-inch diameter
Length	26 ft 9 in
Height	8 ft 4 in
Wingspan	36 ft 1 in
Wing area	175 sq ft
Wing loading	19.3 lb/sq ft
Power loading	12.0 lb/hp
Seats	4
Cabin length	10 ft 6 in
Cabin width	3 ft 8 in
Cabin height	3 ft 9 in
Empty weight	2,225 lb
Empty weight, as tested	2,338 lb
Max gross weight	3,368 lb
Useful load	1,143 lb
Useful load, as tested	1,030 lb
Payload w/full fuel	609 lb
Payload w/full fuel, as tested	500 lb
Max takeoff weight	3,368 lb
Max landing weight	3,200 lb
Fuel capacity, std	95 gal (89 gal usable) 570 lb (534 lb usable)
Oil capacity	8 qt
Baggage capacity	120 lb, 20.9 cu ft

**Performance**

Takeoff distance, ground roll	900 ft
Takeoff distance over 50-ft obstacle	700 ft
Rate of climb, sea level	1,200 fpm
Max cruise speed, 9,000 ft	190 kt
Cruise speed/endurance w/45-min rsv (fuel consumption)	
@ 75% power, 9,000 ft, best power	184 kt/4.9 hr (94.2 pph/15.7 gph)
@ 65% power, 14,000 ft, best power	181 kt/5.6 hr (84 pph/14 gph)
Service ceiling	20,000 ft
Landing distance over 50-ft obstacle	1,600 ft
Landing distance, ground roll	1,000 ft

**Limiting and Recommended Airspeeds**

V <sub>X</sub> (best angle of climb)	85 KIAS
V <sub>Y</sub> (best rate of climb)	105 KIAS
V <sub>A</sub> (design maneuvering)	127 KIAS
V <sub>FE</sub> (max flap extended)	110 KIAS
V <sub>LE</sub> (max gear extended)	165 KIAS
V <sub>LO</sub> (max gear operating)	Extend 140 KIAS Retract 106 KIAS
V <sub>NO</sub> (max structural cruising)	174 KIAS
V <sub>NE</sub> (never exceed)	196 KIAS
V <sub>SI</sub> (stall, clean)	66 KIAS
V <sub>SO</sub> (stall, in landing configuration)	59 KIAS

*For more information, contact Mooney Aircraft, Louis Schreiner Field, Kerrville, Texas 78028; telephone 800/456-3033, fax 210/896-8180.*

*All specifications are based on manufacturer's calculations. All performance figures are based on standard day, standard atmosphere, sea level, gross weight conditions unless otherwise noted.*