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Used Aircraft Guide: The Mooney 201

Originally conceived as an economy version of the V-tail Bonanza, it outlasted its sibling instead.

Although avgas prices have abated recently, smart owners know the respite is temporary, thus economical airframes are much in demand in the current anemic market. Topping the list of economical choices is Mooney's venerable M20J or 201.

The J-model is one of those rare ideal compromises between speed, economy and payload. It's not the fastest retract on the block, but it's affordable to own and easy to fly and maintain. Owners rave about their 201s, thus it was no surprise that our query for comments on the airplane drew more letters than any other model.

History

Amazingly, even the latest speed champions from Kerrville—the Mooney Type S Acclaim—trace their heritage to the original Mooney type certificate. The basic airframe has evolved over the years, but the concept of a semi-monocoque rear fuselage mated to a metal-skinned steel-tube cabin, a long and slender tapered wing and distinctive reverse tail has endured.

The J-model evolved most directly from the F-model, which was itself descended from the short-body C-models of the mid-1970s. The first J-model or 201—the number derives from its supposed top cruising speed in MPH—appeared in 1977. It sported a 200-HP Lycoming four-banger—the IO-360—improved landing gear and a sloping windshield, among other changes. All of these were the product of a concerted effort by Mooney to kick the model line up a couple of notches.

The 201 is, to the surprise of many, very much the work of the late LeRoy LoPresti. LoPresti had a long aeronautical background, including a stint on the Apollo lunar program at Grumman. He became a near legend for his ability to get the utmost from an airplane through aerodynamic cleanups, which he'd done with success on the Grumman Tiger.

Applying his magic to the M20F model, LoPresti and the Mooney team created the M20J. A number of changes were made, the most visible being a new cowling and a more aerodynamic windshield. The interior was addressed, too, with adjustable seats and a contemporary flat panel with organized electricals and circuit breakers rather than the typical dog's breakfast arrangement of the 1960s and 1970s.

The old Mooney naming conventions—Executive, Chaparral, Statesman—were chucked in favor of the top speed moniker. To be fair, it should really be more like a Mooney 184, since this model doesn't honestly cruise at 170 knots. As a marketing ploy, Mooney even went so far as to reserve as many 201 registration numbers as possible for the new airplanes. Even by 1970s standards, the 201 was a smash hit, selling more than 1000 copies in the first four years.

By 1985, the general aviation slump was taking its toll so Mooney tarted up the J into the 201 LM (for "Lean Machine"), a stripped-down version with basic IFR avionics for a bargain price. Two years later, the M20J got some more tweaks (gear doors) and was renamed the 205. Inexplicably, the 201 was still being produced, as was the 201 LM. Mooney was selling three airplanes that were more or less the same: All M20Js, but with different equipment. In 1988, the 201 was dropped and the 205 became the 205SE.

Confusion Abounds

By 1989, Mooney realized it was simply confusing customers and returned to the 201 name. That same year, a trainer version was introduced, called the AT. It was intended only for flight schools and is notable for the inclusion of speed brakes.

The M20J's front office has more than enough room for everything. Note the engine power gauges on the far right, along with circuit breakers. Fuel and system gauges are top and center, along with the trademark gear switch.

In 1991, Mooney abandoned numerical names and re-dubbed the 201 the MSE. There was a version with special equipment in 1992 called the MSE Limited. In 1993, all special variants were dropped and just before it abandoned the J-model, Mooney gave it one more name: the Allegro, ostensibly to go along with the Ovation and the Encore, the re-do of the 252 that was also dropped just after it reappeared. Very few Allegros were made.

Total production of the M20J —regardless of name—totaled about 2150 with about 1600 registered in the U.S. The airplane retains a loyal following and the fact that demand for it remains strong is evidenced by price trends: The 201's base price more than doubled in the first six years, from $46,725 (1979 base) to $97,500 (1985). On the used market, the 201 continues to be a strong seller. Gone are the days when a clean model would fetch $200,000, but a mid-1980s J or LM will still command about $100,000. A good one will sell quickly, even against lower-priced hangar queens.

Evolution

Here is a rundown on the more significant changes to the series: The biggest operational shortcoming of the original M20J was its low gear-operating speed (Vlo) of 107 knots for both retraction and extension.

This, together with the low flap extension speed (Vfe of 114 knots), caused pilots

grief in high-density areas and led to the airplane's reputation as a hot-handling, hard-to-land performance machine, which it really is not.

Many different variants of the M20J, as the 201 is formally known, have left Mooney's Kerrville, Texas, factory. Pictured above is a 1994-model M20J, which the company dubbed "MSE."

Vle (gear extended speed) and Vlo/e (maximum gear operating/extend/speed) were increased to 132 knots for the 1978 model year. The 107 knots maximum retraction speed remains. Even these speeds are low, given the slickness of the airframe. Speed brakes were offered as a factory option in 1986 and aren't a bad feature to have; you can retrofit the Precise Flight boards to any model.

Where the first 201s have throttle quadrants with a pistol power lever, carried over from the C-model, in 1978 this was changed to conventional push-pull engine controls. The panel and central console/pedestal were redesigned twice. In 1980 (1981 model year), the panel and glareshield were changed to the same configuration as that in the 231, with the extended section over the radio stack to provide more room.

This change also is credited with solving vibration and rattling that had been an annoying problem in earlier 201s. For all its reliability, the IO-360 isn't the smoothest engine out there. The ventilation system also was improved and the shaped wing tips with faired navigation and strobe lights that were first introduced on the 231 were added.

Further aerodynamic and several serviceability changes were made for the 1984 model year. The nose gear doors were redesigned to make them close fully on retraction, a fairing was added to the tail cone and a one-piece belly fairing was installed. This is a desirable feature, otherwise maintenance access to the belly is a pain. The single fairing, which is fastened with 38 Dzus fasteners, replaces eight separate access panels with 175 screws. Engine access was improved, too.

Over the years, empty weight increased by roughly 80 pounds; basic empty weight was 1640 pounds in 1981, 1671 pounds in 1984 and 1726 pounds in 1992. Some versions have more than 200 pounds in optional equipment and end up with full-fuel payloads around 460 to 470 pounds. In any case, don't plan on much more than 600 pounds with the tanks full.

That cramped feeling? It's an optical illusion.

The big changes in the 205 were in the electrical system and landing gear. The 205 electrical system is 28 volts compared to the 14-volt system in earlier M20Js. The higher-capacity system is an improvement even though the 70-amp maximum output of the alternator is unchanged, because it can produce 70 amps whereas the earlier system is capped out at roughly 60 amps.

Battery rating also increased. Along with that, Mooney added an improved electric load monitoring system to supplement the high- and low-voltage annunciators—idiot lights that don't help manage demand to any great extent.

The 205 gear system incorporates the M20K doors that fully enclose the gear when retracted and is the major contributor to the modest claimed speed increase of 4 MPH. The mechanical, three-position cowl flaps were replaced by an electrically-operated, infinitely adjustable system. We like the manual flaps better, but they need to be kept in adjustment.

Gear speeds were raised to a Vlo/extend of 140 knots and Vle of 165. A flap preselect system was offered for the first time and Vfe/approach (15 degrees) was raised to 132 knots. The higher speeds were lost when the 201 returned in 1989.

With the 1991 introduction of the MSE, the maximum takeoff weight was increased by 160 pounds, from 2740 to 2900 pounds. The increase can be retrofitted (primarily a paperwork change and airspeed indicator exchange) back to some 1989 models, from serial number 24-1686 on.

Performance, Comfort

Performance is the bottom line for most Mooney owners. At 60 to 65 percent, true airspeeds average 150 to 155 knots and endurance with reserves at 4.5 hours or better. Some owners report 160 to 165-knot airspeeds and, while some airplanes

definitely are faster than others, we're skeptical of these claims. Plan on 150 to 155 knots on about 10 GPH.

Good handling qualities in an efficient package make Mooney's

Typically equipped 201s can haul three 170-pounders plus about 40 pounds of baggage. With partial fuel loads—say 50 gallons—the Mooney still offers good range with seats filled. The 201 has outstanding altitude performance for a low-power, normally aspirated single, thanks to its comparatively high aspect ratio and efficient wing. Its performance is good enough to make cruising at 14,000 to 15,000 feet a practical matter, with oxygen of course. Service ceiling is 18,600 to 18,800 feet, depending on the version and if light, a 201 can go there.

The J-model isn't a rough-field airplane, although it will handle short runways admirably well. The gear doors almost brush the ground and the prop has less

than 10 inches of clearance. Well-manicured turf runways are no problem; rutted gravel will beat up the doors, as will muddy surfaces.

M20J a very popular used airplane.

Mooneys in general have a reputation for being cramped, but are in fact nearly as wide as a Bonanza. It's the shape of the cabin section that makes them feel snug.

The small frontal area of the airplane means that the seating position is rather sports-car-like, with feet stretched out in front. This is in contrast to, say, a typical Cessna, which is more like sitting in a kitchen chair. There is definitely lots of legroom: Pilots shorter than 5 feet 9 or so may have to use a booster cushion to reach the pedals. For folks with bad backs, the Mooney can be an irritant and it's not easy to ingress and egress gracefully.

The M20J is a relatively noisy, vibey airplane, some examples being worse than others. Cracks in cowls, baffling and cowl flaps aren't unusual. Good headsets, an intercom, a thicker windshield and sound insulation help with the noise. So does prop balancing.

The baggage bay is of adequate size and is approved for up to 120 pounds. Most owners don't mind the location of the hatch, which requires you to lift baggage over the sill rather than place it in. The baggage door doubles as an emergency exit for rear seat passengers (although some owners say it's too small or too hard to reach). The earlier models have fixed rear seat backs, which occasionally causes loading problems for really bulky items. The baggage door isn't all that large so muscling golf clubs into the airplane isn't easy. There are mods for fold-down rear seats to address this.

One sore spot with owners is sealing the integral fuel tanks in each wing. At left are the underwing fuel stains and corrosion resulting when repairs are left too long.

Handling

Control pressures in the 201 are higher than in other airplanes of similar size and power, thanks to the push-pull tubes rather than cables used to actuate primary flight controls. The result is direct, fast and linear response. The stiff roll feel is due to the tubes bearing against rub blocks that help carry the aerodynamic loads without binding.

Rudder is the lightest control in the three axes, but it also is the least powerful, although there's plenty of rudder to handle crosswinds. We've landed 201s with 20 knots across the runway, with control authority to spare. Pitch changes with configuration and power changes are significant. A go-around or missed approach with full flaps requires anticipation and generous use of trim.

In landing configuration, application of power results in a strong pitch up. One trick of note is that the flap and trim motors run at the same speed, which means that the pitch change with flap extension can be nicely balanced by running the trim in the opposite direction at the same time.

Stalls in a well-rigged 201 with the stall strips properly located on the leading edge are brisk but not tricky. There can be a pronounced wing drop as the nose falls through, as it usually will. The airplane isn't approved for spins and they should be avoided. They're recoverable by conventional means but may require more altitude than the pilot is willing to give up or has available.

Mooneys have long had a reputation as floaters on landing. And they will float, if flown too fast on final, which most pilots tend to do. Nail the speed, however, and you can plant the airplane right where you want it, with minimum runway used.

Touch down too fast and force the airplane on, and you'll be in for a wild wheelbarrowing or skidding ride that could end in a prop strike or damaged gear. Similarly, takeoffs can be sporting and bouncy, too. The trick during takeoff is to set the trim properly, use flaps as recommended and apply a little back pressure. When the airplane wants to fly, don't try to hold it on the ground.

On efficiency alone, Mooneys make ideal personal airplanes. They're not the best load-haulers, but you can fill the tanks, throw in enough gear to go camping, bring along a friend and travel at 155 knots on 10 GPH.

The biggest handling challenge occurs not in the air but on the ground. The turning radius is fairly large. This, coupled with the long wingspan and low seating position creates taxiing and ground maneuvering problems for transitioning pilots. The limited nosewheel turning radius also creates maintenance problems. Untrained or careless ramp people towing Mooneys occasionally exceed the limits and damage steering horns, trusses and other nose gear components.

Maintenance

Besides engines and steel-tube corrosion, Mooneys are plagued with fuel tank leaks and the 201 is no exception. Repairs are expensive and some owners have chronic problems. Others have none. Reseal quotes run from $6000 to as much as $12,000, if the tanks need major work involving hand scraping the old sealant through hard-to-access fuel bays.

Another recurring fuel system problem is water contamination caused by faulty fuel cap seals and/or corroded fillers. Advice: Change the cap O-rings at annual.

Leaking water also is responsible for another expensive problem. Poorly sealed (or deteriorated sealant in) windows or leaking storm windows allows water to seep into insulation, which leads to corrosion of the tubular cabin structure on the pilot's side. One shop said 50 percent of all 201s have the problem to some degree; another one said early (through 1982) Mooneys are the most affected.

Inspection and repair is expensive because the interior and insulation have to be removed. Even if an airplane has been repaired, replacing tubes is frequently required and the problem can recur if an improved type of insulation was not installed or if window leaks recur.

One repair operation recommends detailed inspection of all flight control elements, especially if an airplane has been

repainted. Paint stripper can penetrate and corrode torque tubes, bell cranks and other elements of the system. Exhaust system elements, especially flame tubes and mufflers, also are repeat maintenance items, in part due to poor quality, according to some maintenance technicians.

Despite a variety of fixes, the cowl-mounted landing lights fail at an annoying rate, largely due to vibration. One owner says he went through 27 landing lights in nine years. One solution is to install an HID lamp. These are expensive, but effective.

The ram air system also is prone to failure and regular inspection for deteriorating gaskets and proper operation is suggested. Some owners recommend sealing it and forgetting it. Using it adds a barely discernible bump in MAP. Finally, the next best thing to a warm, bird-free hangar are cockpit covers and cowl plugs. Birds like to nest in the tail cone and plugs in gaps will help. They don't seem to like the nose openings as much as in Cessnas or Pipers.

Mods, Owner Groups

There are two owner support groups. Mooney Owners of America can be reached at 877-564-6662 and www.mooneyowners.com. This group has a monthly magazine and other benefits. The Mooney Aircraft Pilots' Association (MAPA at 210-525-8008 or on the Web at www.mooneypilots.com) also has a magazine and other benefits, such as an insurance program.

There are a number of shops that specialize in Mooneys. Some mods are intended to make older Mooneys more like the 201, with sloping windshields, newer cowls, speed mods and the like. Others are mechanical and systems improvements.

Of particular note are Lake Aero Styling and LoPresti Speed Merchants. Reach Lake Aero at 707-263-0412 and www.lasar.com and LoPresti Speed Merchants at 877-565-1731 and www.speedmods.com. Check out Precise Flight for speed brakes (www.preciseflight.com or 800-547-2558. Hartzell has prop upgrades, contact www.topprop.com and 937-778-4200.

Owner Feedback

When I bought my 201 in May 1982, it had 40 hours tach time. The four-cylinder 201 was selected over the turbocharged 231 because my flying is primarily East coast with modest terrain. I wanted to minimize operating costs.

This airplane has been a pleasure to fly during my 26-plus years of ownership. Typical cruise is 155 knots and optimum altitude is 8500 to 9000 feet.

I ballpark 11 GPH for planning and run rich of peak. The engine was overhauled by Zephyr at 2000 hours and continues to be very reliable.

The original electronics are still functioning: KNS80, Century 31 autopilot and Bendix/King navcomms.

SB/AD items to be aware of include cabin insulation replacement (original absorbed water, caused corrosion of the cabin tubular cage), fuel tank sealant not applied properly causing water to be trapped and aileron links need to be replaced with reinforced units.

A significant problem area is the engine's Bendix dual mag. The single nut/star washer per mounting stud has resulted in having the mag loosen or fall completely off the engine. Most owners, I believe, have added a second lock nut to keep the mag attached to the engine.

In summary, the Mooney 201 is a very stable instrument platform, is a delight to fly and relatively low cost to operate.

Dwight Wilcox
Gaithersburg, Maryland

I have owned a 1979 Mooney 201 for two years during which I have flown it 345 hours. Having owned a Beechcraft Debonair, it has taken a while to transition to owning a Mooney. I don't think many will argue that a Beechcraft is the Cadillac of light airplanes. However, the more I fly my Mooney, the more I like it. It has fulfilled nearly all of my expectations.

The primary reason I chose the 201 was that it provided the best performance vs. cost of any airplane in its class. After owning the Beechcraft, cost of operation—particularly the cost of parts—was of primary concern. Also, the IO-360 is one of the most proven engines in the general aviation fleet. With proper care, it should easily make TBO without major expense.

The airframe lacks some of the build quality of my Beechcraft, but is nevertheless strong and simple to maintain.

I have yet to get used to the hundreds of sheet metal screws used to hold things in place. The cowling is fiberglass, which suffers from wear and vibration, and seems to cause the single landing light to burn out more often than it should. Other than leaking fuel tanks—which seems to be a trademark of all vintage Mooneys—I have had no unusual maintenance problems.

I would highly recommend that a 201 be maintained by a shop experienced in maintaining Mooney aircraft. I have found the network of Mooney Service Centers are hard to beat for annual inspections. The price might be a bit higher, but the right things get adjusted and fixed. When shopping for a 201, a recent annual performed by a service center is a major plus. My past two annual inspections have run about $2500 each, and I am not in the habit of postponing needed repairs.

As for insurance, last year I paid $1600 for a full coverage policy with $1 million single-limit liability through AOPA on a hull value of $110,000.

There are those who claim a Mooney is cramped, but I don't find this to be so. Once seated, a 201 is quite comfortable for both front and rear seat occupants. I have flown several five-hour legs with minimal discomfort. When the rear seats are unoccupied, the front seats can be adjusted so that even a pilot with long legs can't reach the rudder pedals. This is a nice feature on long flights with a good autopilot.

One thing I dislike about the 201 is its stiff landing gear. While smooth landings are easy to achieve, the ride on the ground is terrible—much like a covered wagon on a rough trail. A very slow taxi speed helps.

The thing I most like about my 201 is its speed and efficiency. Being based in the west, I often fly at 9000 to 12,000 feet. At these altitudes, I flight plan for 150 knots at 10 GPH, including climb and descent.

Flight characteristics are excellent in every respect. Contrary to rumor, the 201 will not float if flown at the proper approach speed of 75 to 80 knots in the pattern and 65 knots over the numbers. It must touch down on the main gear first, as there is very little clearance between the prop and the ground. This makes the airplane poorly suited for operation from unimproved strips. My 201 is a keeper and, in my opinion, represents one of the best values in the used airplane market today.

Charles Raine
Camarillo, California

I bought my J-model Mooney new from the factory in March of 1994, and have flown it for 2200 hours since. It is a great cross country airplane. I have flown it to every state except Hawaii and made it from the East to the West coast in one day several years ago. (I departed coastal North Carolina just before dawn and landed in San Diego at sunset with stops in Memphis, Amarillo and Phoenix. Thirteen hours in the air and three one-hour fuel stops.) A few years later, I flew the airplane to Alaska from my base in Connecticut; 26 hours over three days.

The airplane is perfectly comfortable on long trips. Its reputation for having a cramped cockpit probably stems from the fact that there is a trick to climbing in. On long flights, letting the seat all the way back occasionally to stretch your legs works for me. (The back seats are useful for short trips)

Book cruise speed is 168 knots at 8000 feet. I am still getting 164 knots burning 11 gallons an hour at 100 degrees rich of peak. I ran the first engine to 1950 hours, just short of the published TBO, and replaced it with a factory reman.

One thing a new Mooney pilot has to know is the airplane's tendency to float if you carry even a very few extra knots into the flare. The low wing generates considerable ground effect and the airplane is not a good choice for a spot landing contest.

A couple of years ago, I installed a Garmin GPSMap 396 with a yoke mount and now have a mini glass cockpit with terrain warning, TIS and weather. It represents a huge step forward in safety and convenience for a relatively small investment. Primary navigation is still the original KLN90B which, linked to the autopilot, still takes me anywhere I want to go.

A. T. Soper
Lyme, Connecticut