

sick," said Lounsbury. "I feel totally comfortable taking on high crosswinds and making wheel landings. Folks who want the Maule performance simply have to learn how to fly them."

Ainsworth, of Maule AK World Wide, who accounts for the sale of about 25 percent of the new Maule production each year, agrees. "These airplanes are not for everyone," said Ainsworth speaking from his 27 years of Maule operational experience including many years based in Fairbanks, Alaska. "In fact, I won't even sell one to a pilot who doesn't have the ability to learn how to handle it properly."

Some pilots who believe that the intricacies of flying a Maule lie in the tailwheel handling department have decided to avoid the situation entirely by choosing a tricycle gear configuration. Today nearly 40 percent of new Maules leave the factory with a wheel in front. What these pilots don't

realize is that tailwheel skills are only a portion of unraveling the Maule mystery and that if even aided by the trike gear, they'll still be missing much of what the plane has to offer if they don't seek qualified instruction.

With 19 different models from which to choose, purchasing a new Maule requires some planning. In recent years the factory has reined in their loose dealer system to form a more traditional support network. Since much of the yearly production is pre-sold, it is important to work with a dealer who has enough existing production slots to accommodate your order.

Options are many. Within the 19 models you can select from dozens of other options covering everything from gear configuration and style, to avionics, engines, props, tires and interior choices. The factory website, mauleairinc.com provides a good presentation of all the current options available.

The airplane depicted in this article is a M7-260C Orion with a fuel-injected IO-540 Lycoming and three-blade McCauley prop (Ainsworth owns the STC), aluminum gear, extended fuel,

IFR panel and SP3 avionics package, heavy duty brakes, welded float attach points, observation doors and windows, VGs, 29-inch Alaskan Bushwheels (STC on all tailwheel models) and an oversized tailwheel just to name a few.

The true Maule mystery is the price. As equipped, the demonstrator lists for \$163,500, but Ainsworth is selling it for \$150,000 since it is a 2001 model. Surprisingly, a base model M7-235B Super Rocket is \$139,600. Impressive for a five-place new airplane.

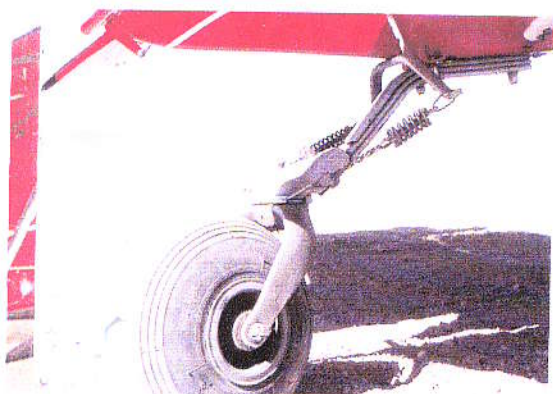
Those that fly a Maule say that you will love them if you get to know them. For me, I have learned that they are correct; you must give the Maule adequate time to reveal all of its performance secrets.

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Maule AK Worldwide, Jeremy Ainsworth, 330 Old Steese Hwy #741, Fairbanks, AK 99701, 907-452-6807 or 707-942-5934, www.maules.com.

Maule Air Inc., Brent Maule, 2099 GA Hwy 133 S, Moultrie, GA 31788, 229-985-2045 Ext 230, www.mauleairinc.com, slaes@mauleairinc.com.

A Maule quirk is the aileron-rudder servo system (top, left), which deflects the rudder in coordination with aileron input. The system actually moves the rudder servo tab to deflect the rudder aerodynamically — the two flight controls are not interconnected. Rudder trim is accomplished by trimming a bungee connected to the rudder pedal and not through the servo tab. An oversized tailwheel option by GarAero (top, right). Alaskan Bushwheels recently announced plans to introduce their own oversized tailwheel design. The M7-235 demonstrator on Aqua floats (bottom, left). Maule dealer Dick Lounsbury demonstrated incredibly tight step turns and confined area water work with the Maule on the Aquas. Jeremy Ainsworth and the -260 demonstrator (bottom, right) launches from the high desert of California.



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Maule Mystique M7- 235/260

by Peter M. Diemer, photography by George Kounis

ONCE AIRBORNE THE MAULE HANDLES LIKE A MAULE, WHICH IS TO SAY IT DOESN'T COMPARE TO OTHER AIRPLANES EASILY. . . TO TRULY TAKE ADVANTAGE OF THE MAULE'S PERFORMANCE REQUIRES A SERIOUS PILOT COMMITMENT TO SPEND TIME WITH THE AIRPLANE.

ime appears to have stopped in Moultrie, Georgia, home to the Maule family aircraft factory. Neither the much higher prices other manufacturers are charging nor the slowing economy have caused them pause. They just keep cranking out 60 to 65 new Maules per year and let the rest of the world worry. Not a bad place to be.

My first introduction to the Maule was as a flight instructor. I had picked up a few hours in M4 and M5s conducting flight reviews and springtime tailwheel currency for customers. Later on I had the opportunity to teach a Maule transition to a new owner of a M5-210 Lunar Rocket (many of the Maule models sport space-theme names). This experience left me with a lasting impression, and, in



*B.D. Maule, the founder
of Maule Aircraft*

First introduced in 1962 by the late B.D. Maule as the M4 Jetason, the Maule line has been steadily growing to now include 19, that's right, 19 distinctly separate models. They are all variations of the current refinement of the M4 Maule design, now designated M7. With so many model options available, I elected to focus on the two most practical variants, the M7-235 and M7-260, both of which are tailwheel-equipped. Lounsbury made the -235 demonstrator available to me in Alaska on skis, floats and wheels. Ainsworth's -260 was flown in California and is set up with a three-blade McCauley prop and 29-inch Alaskan Bushwheels.

It is notable that B.D., until his death in 1995, held the honor of owning a family-operated certified aircraft manufacturing company over the longest period of time in the world. The Maule family has been delivering aviation products since the formation of the B.D. Maule Company in 1941, which produced non-electrical aircraft starters and lightweight steerable tailwheels for several aircraft manufacturers (which are still being produced). In 1968 they moved from their original location in Napoleon, Mich., to their current facility in Moultrie.

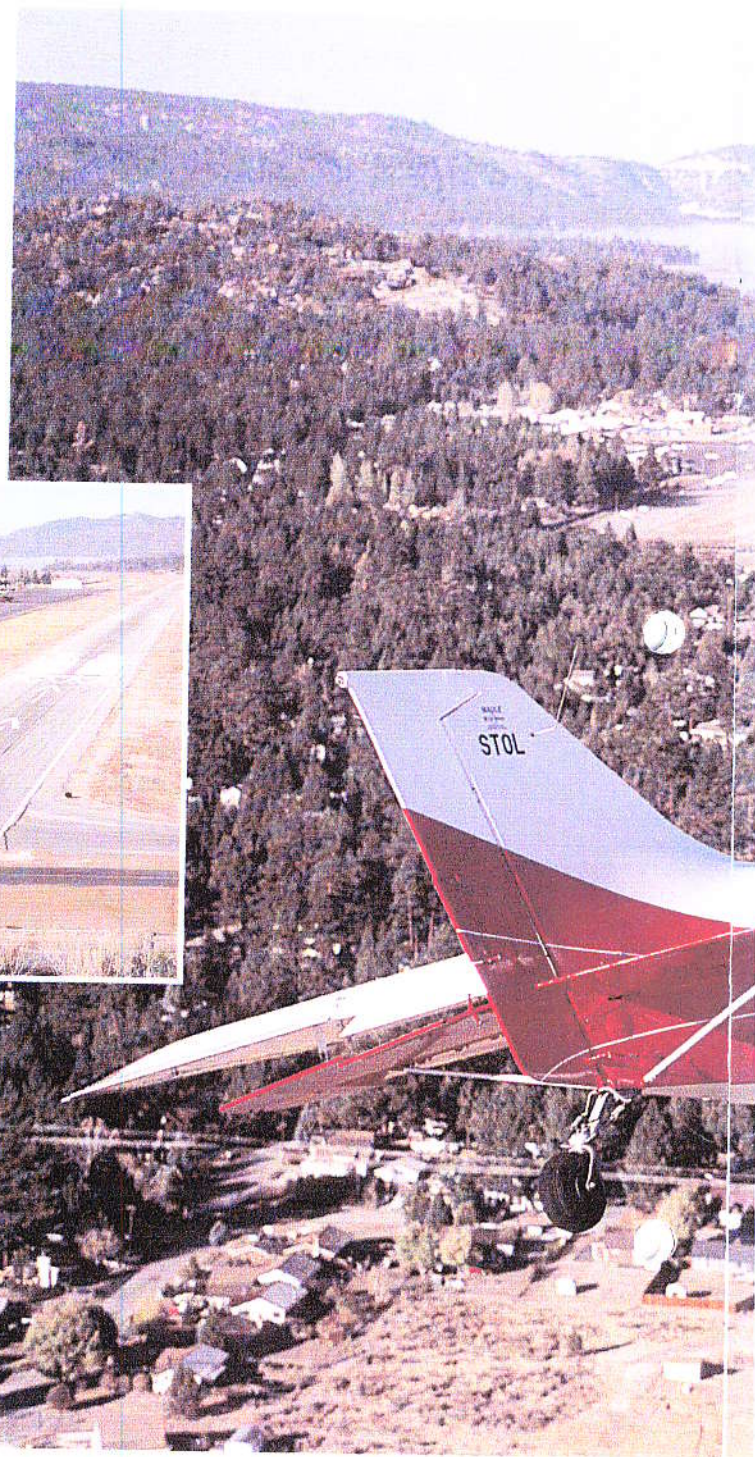
The Maule has evolved slowly. Some large improvements separate the M7 from the M5 and M4 — the models I cut my teeth on. Key changes include a longer wing, new flap design, larger vertical tail and rudder, engine options, tricycle gear options, and, for the tailwheel configuration, a choice between the standard narrow oleo strut gear or wider flat aluminum-spring gear.

retrospect, not the best introduction to the type. At the time I found the gear to be narrow, the wing short, the aileron-rudder interconnect distracting and the sight picture of the nose during wheel landings unnerving — hardly a sales endorsement. To demonstrate to this skeptical editor what a Maule is actually capable of, Maule dealers Dick Lounsbury and Jeremy Ainsworth had their work cut out for them.

Large 54-inch wide doors allow access to the entire rear cabin. The middle sling seat can be quickly removed and stowed to allow for cargo.



THE MAULE IS NOT AN AIRPLANE
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INTRODUCTION.



All of the models utilize the same basic airframe and wing. The fuselage is 4130 welded steel powder coated tubing with conventional Ceconite fabric covering. The wing is all aluminum, as are the ailerons and flaps. From the outside the Maule appears short; the large dorsal swoop leading to the tail accentuates the fuselage's height and makes the length appear shorter than it actually is. The wing at 33 feet is a little shorter, however, than most other aircraft of the same weight by about 10 percent.

The cabin features four-door access: one per pilot and two double doors on the right rear. The ease of front seat ingress is fair. The distance from the seat back to the front door post is adequate, but gets a little tight with winter clothing and boots. Access to the rear seat(s) and baggage area is unrestricted. The large 54-inch-wide doors open to expose the entire rear cabin of the aircraft. Loading cargo or passengers into the Maule is not a problem. The front seats are adjustable to four positions and I found the legroom to fit me nicely. The rear middle seat is a sling seat design that I did not test for comfort. The third row seats are much like that of a C185 third seat. The interior finish is not lavish, but it is light, functional and appropriate for the aircraft. A neat interior feature is a retractable skylight cover to block the sun or to hold in the heat on cold days.

Fuel is stored in four welded aluminum tanks, two per wing. Standard capacity is 73 gallons with 85 gallons as an option. The inboard tanks serve as the mains and fuel is transferred from the outboard tanks via electric transfer pumps to the main tanks when needed.

On final to Big Bear: Huge flaps make for slow approach speeds.

Aileron, rudder and elevator control is via cable and pulley connected to a panel-mounted yoke. The flaps are actuated manually via a Johnson bar between the front seats. The five-position flaps deflect to a maximum of 48 degrees positive and seven degrees negative (reflex). The flap bar, which angles slightly to the right, is awkward to actuate from the right seat, but is perfectly natural to pull from the left.

Elevator and rudder trim is available. The elevator trim is a conventional tab actuated by a wheel mounted near the flap handle. Rudder trim is controlled via a T-handle mounted on the sub instrument panel. Pull out, twist clockwise and lock for right rudder trim.



The instrument panel is large enough to accommodate instrumentation and avionics suitable for the Maule's intended mission. The sub panel, which contains numerous electrical system and power controls, is angled on the edges to wrap around fuselage structural components.

A Plane of All Seasons

Back in February Lounsbury invited me to fly in a new -235 equipped with Airglas 2500 straight skis (see February/March 2002). Performance was impressive on the cold winter day. After the usual preheat, the Lycoming O540-B4B5 started without a hitch (the IO540 is an option). The Maule engine installation does require both prime and boost pump for start. The Maule is fast — off the ground and in cruise. The skis and

■ SPECIFICATIONS

POWERPLANT	LYCOMING O-540-B4B5 / 10-540-V4A5
POWER LOADING	10.6 LB/HP / 9.6 LB/HP
WING SPAN	32 FT 11 IN
WING AREA	165.6 SQ FT
WING LOADING	15.1 LB/SQ FT
LENGTH	23 FT 6 IN
HEIGHT	6 FT 4 IN
GEAR WIDTH	6 FT / 7 FT 10 IN
SEATS	5
CABIN WIDTH	42 IN
EMPTY WEIGHT	1,605 LB / 1,671 LB
MAX. GROSS WEIGHT	2,500 LB / 2,750 SEA
USEFUL LOAD	895 LB / 829 LB
FUEL CAPACITY	73 STD / 88 EXTENDED

■ PERFORMANCE

TAKEOFF ROLL	250 FT
OBSTACLE CLEARANCE	600 FT
RATE OF CLIMB	
(ONE PILOT / HALF FUEL)	1,500 FPM / 1650 FPM
CRUISE SPEED @ 75%	160 MPH / 175 MPH
LANDING W/OBSTACLE	500 FT
FUEL BURN @ 65%	12 GPH / 15 GPH
RANGE @ 65% 73 GAL	900 SM / 840 SM
ENDURANCE	6 HOURS / 4.8 HOURS

■ REFERENCE AIRSPEEDS

V _S	50 MPH
V _{SO}	40 MPH
V _Y	90 MPH
V _X	75 MPH

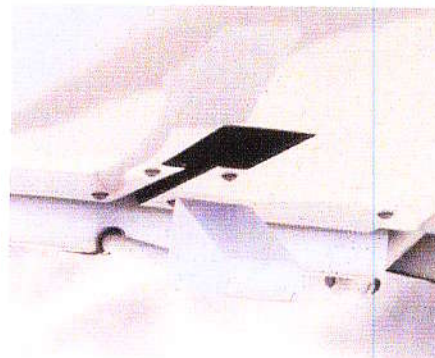
Specifications and performance data provided by manufacturer.



IN ADDITION TO PROVIDING FOR HIGH CRUISE SPEEDS, THE SHORT WING IS ALSO AN ADVANTAGE DURING THE LANDING: YOU CAN SET UP A PHENOMENAL DESCENT RATE AT A STEEP APPROACH ANGLE (THANKS TO THE LARGE FLAPS).

rigging didn't slow us down much; in fact, we clipped along at speeds faster than a tundra tire-equipped version. A setting of 2,450 RPM and 23 inches of manifold produces about 138 MPH indicated at 2,000 feet when on skis or 29-inch tires. Fuel burn at this setting is about 13 GPH.

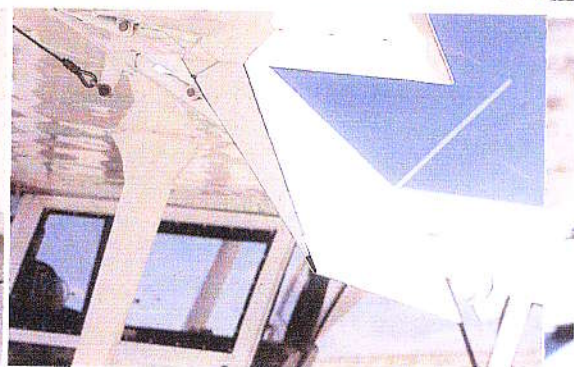
Ever the master of the soft sell, Lounsbury demonstrated a different - 235 equipped with Aqua floats. Aqua Floats? Yep. The Clagget family is still producing a few sets of these fully



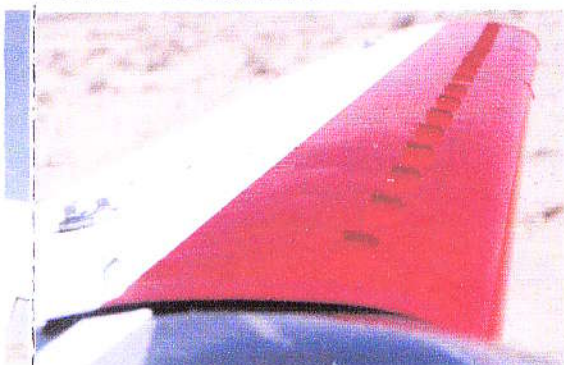
certified straight floats from their Minnesota home. Lounsbury swears by the combination of the Aquas with the Maule.

We flew to a lake small enough to be traditionally called a "Cub Lake," but it turned out to really be more like a pond. We proceeded to do a series of takeoffs, landings and step turns, each time using half the amount of water than I expected. Takeoffs are five seconds or less. Landings, thanks to the big flaps, STOL airfoil and optional VGs, can be accomplished in the same distance as the takeoff run, making the Maule one of the few balanced airplanes that, when flown correctly, can match takeoff and landing distance.

In addition to providing for high



cruise speeds, the short wing is also an advantage during the landing; you can set up a phenomenal descent rate at a steep approach angle (thanks to the large flaps). In fact, the first couple of demonstrations caught me off guard. Lounsbury, with 40 years of bush flying experience and who has logged 1,000 hours in Maules since 1997 when he became a dealer, was able to establish descent profiles that I would have never attempted. The surprising thing about the Maule is how much elevator authority it has at slow speeds. We approached at a very steep angle at 1,000 FPM, carrying power, and the transition into the flare and descent arrest is accomplished without the addition of power (at our weight).



Optional aluminum-spring gear (top, left) increases the gear stance by 22-inches. The panel (above) is large enough for the Maule's intended mission. The demonstrator is equipped with the optional SP3 avionics package and IFR gyros. Maule design is functional - like the aileron mass balance arrangement (far left). Flaps (near left) deflect to a maximum of 48 degrees. An integrated bungee system restricts maximum deflection until the airspeed is 55 MPH or less, even when the flap setting is selected by the pilot. Micro AeroDynamics VGs (far right) on the wing and horizontal tail significantly improve slow speed control authority. The flaps set to cruise reflex (near right). Note that the aileron is in trail of the wing and the flap is deflected upward.

On the water the Maule with Aqua floats is capable of incredibly tight step turns. The plane remains rock solid in the turn and will quickly pivot (particularly to the left) about the step. While all step turns feel unnatural, the extremely tight turns demonstrated by Lounsbury felt no more so than any other standard rate turns made in other seaplanes. With three people and half tanks the -235 seaplane will be airborne in a scant 500 to 600 feet.

On wheels the takeoff roll is brief. I experienced no difficulties tracking the centerline and over the nose, visibility is excellent even in the three-point attitude. The standard oleo gear is 72 inches wide, which improves ground maneuverability at the expense of extra

stability. The optional aluminum-spring gear stance is an impressive 94 inches. Once airborne the Maule handles like a Maule, which is to say it doesn't compare to other airplanes easily. The aileron rudder servo system eliminates much of the required rudder work after takeoff. Cub pilots who are used to heavier rudder inputs will skid their initial turns badly in the Maule. I found it best to simply steer in the desired direction, much like a car, and check coordination only after the turn is established. Some owners prefer to maintain control of the plane's axis independently and quietly disconnect the system. I think that with a little time and exposure to the system most pilots will forget it's there.

Normal cruise is accomplished with the flaps in the first position, reflexed upward seven degrees. The drag reduction in the configuration over the second position (zero degrees - flaps in trail of wing) is immediately noticeable. Ainsworth opted for several observer options on his -260, including patroller doors, observer window, large skylight and copilot swing-out window. The combination of these options with the ample stock side windows, make for a very light and airy feeling in the cabin. Maneuvering a cruise requires control forces typical of a 2,500-pound airplane. The ailerons are not too stiff, but rapid roll requires two hands on the yoke or a slight lead with the rudder.

Slowed down, the M7 is very comfortable at 60 MPH and flaps set to the third position, 24 degrees. At this speed more rudder attention is needed and I found myself somewhat complacent with the rudder work after the no-rudder during cruise requirement. Slip the nose up a bit more; add flap and power and the M7 will motor along at a minimum controllable airspeed of 45 to 40 MPH. After abusing the flight controls with cross-control inputs and bursts of power, I induced a stall at some airspeed below 40. Once stalled, however, the Maule STOL wing is done flying. The stall characteristics are middle of the road — not unpredictable and twitchy, but not Citabria like either. Pay attention to your rudder work at slow speeds as the Maule will drop a wing — don't get lulled into a feet-on-the-floor condition due to its benign cruise handling characteristics.

In the traffic pattern the Maule's rate of climb and speed become readily apparent. Simply put, the M7 scoots. A good power-to-weight ratio provides for a rapid climb at steep angles and quick acceleration on the downwind. A common problem for new Maule pilots, according to Lounsbury, is that they never slow the plane to an appropriate landing speed.

"Many folks are running around landing their Maule at 65 miles per hour," said Lounsbury. "And they wonder why their landing distances are

so long! Sixty-five is fine on final, but not at touch down."

I found that making full flap, power-on approaches to a three-point landing to be straightforward requiring only normal tailwheel landing technique. The flap bungee system is an interesting M7 feature that comes into play during landing. Basically a bungee is integrated into the flap actuation cable that restricts the maximum flap deflection until the airspeed is less than 55 MPH. This means that when you pull full flap at 65 MPH on final, the flaps actually deflect to 24 or 40 degrees. As you slow to 55 on short final, the air load is reduced and the flaps are deployed to 48 degrees, which can cause some unexpected pitch changes and, if the entire approach was flown too fast, the added flap can occur during the flare, resulting in a balloon. This quirk — designed to protect the airframe from flap over-speed — can cause frustration to an inadequately briefed pilot.

Roll out is accomplished with minimal rudder work. One thing to get used to is the sight picture during both the three-point and wheel landings. Yes, despite popular myth, Maules make perfect wheel landings. The geometry of the gear and shape of the cowl, make for a relatively "flat" picture upon landing, even during the flare. This sight picture can cause a pilot to misjudge the position of the wheels and flare late and, during wheel

landings, it may cause a reluctance to push forward upon touch down, resulting in a balloon. Practice and some dual with an experienced Maule pilot will clear this up.

Solving the Mystery

To truly take advantage of the Maule's performance requires a serious pilot commitment to spend time with the airplane. The Maule is not an airplane that gives up its secrets quickly and many people make the mistake, as I did with my first Maule experiences, of judging the airplane based on their first introduction. Because of this, the Maule line has a mixed reputation, but to those like Lounsbury and Ainsworth, there is no better STOL airplane for your money.

"I fly my Maule to Alaska Peninsula and Aleutian Chain for my guiding business. Down there the wind is always blowing 40 MPH and the turbulence is so bad it makes everyone

