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## Micco's SP20

A remake of the Meyers 145, will this two-place cruiser find buyers in the training and sport recreation market?

A trio of hungry aviators clamber out of a Mooney parked in front of the headquarters of Micco Aircraft in Fort Pierce, Florida. The pilot inquires about getting fuel, while the others ask directions to the restaurant. That's one of the problems that crop up when you build an airplane factory in a former FBO building.

Inside the 40,000-square-foot factory Micco has erected next to its headquarters, 95 workers are welding steel, running wire and riveting sheet metal, turning out the Micco SP20.

Also on the line are the first prototypes of the higher-powered SP26 that may be certified this fall. There is but one completed airplane signed off as airworthy sitting on the ramp. Inside, two more near completion.

### What Is This Thing?

The SP20 is a forward-looking throwback, simultaneously futuristic and retro. As a taildragger, it defies convention. But as a highly maneuverable sport plane, it's trying to tap into what several airplane designers hope is an emerging market.

Diamond Aircraft was first in line—at least recently—with a modern two-seat sportster, the Continental-powered C1 Eclipse. As we mentioned in the July 1999 issue, Roy LoPresti and Aviat Aircraft are each attempting a revival of the Globe Swift, although LoPresti's is so heavily modified that it shares no components with the original type certificate design.

In addition, another newcomer is the Fascination D4, a derivative of a German kitplane that's being built in Germany and distributed in the U.S. by Harper Aircraft in Jacksonville, Florida. Yet another entry, the Sky Arrow, is being imported from Italy, certified under JAR/VLA requirements. Is there a market here? If so, there will soon be many choices to serve it.

The SP20 is priced at \$150,000 for a basic VFR model and \$165,000 for an IFR-equipped version, making it a bit higher than a new, well-equipped Cessna 172. The standard VFR package includes an Apollo GX65 GPS/comm and an Apollo SL70 transponder. The standard IFR package is all-Apollo, including the SL15M audio panel, the GX60 GPS/comm, the SL30 navcomm and SL70 transponder.

Among the standard features is a full set of digital/analog gauges, including a fuel flow meter and CHT and EGT probes for each cylinder. The digital fuel gauges are described by company personnel as "absolutely dead-on accurate."

Options include an S-TEC 30 autopilot with altitude hold for \$10,000, a UPSAT/Apollo MX-20 multifunction display for \$8500 and \$1000 for leather interior.



Micco SP20 looks sleek and fighter-like on longish gear legs.

Micco is bankrolled by the Seminole Tribe of Florida, which put up the money for the factory and certification. The tribe has been successful in a variety of business pursuits and, unless sales are nonexistent, appears to have the financial wherewithal to be in the airplane business for the long haul.

The tribe's chief, James E. Billie, is an avid pilot and professes to be committed to the success of the venture. Given the vagaries of the airplane market, they may have that resolve well tested.

### **Design History**

The Micco SP20 is a derivative of the Meyers 145, a short-lived model born in the aftermath of World War II. But it's highly modified from the original design. The Meyers boasted a 145-HP Continental engine; the Micco has a 200-HP Lycoming IO-360, a variant of the powerplant found the Mooney J-model, but with separate magnetos, not dual mags.

The Micco is longer and wider than the 145 and features the vertical stabilizer from the Meyers 200 and the wing and flaps from the Meyers Interceptor 400, a turboprop. (The flaps are Fowler type, about two-thirds span and electrically operated.)

Other changes from the Meyers include a sliding canopy instead of doors, center console, retractable tailwheel, electrohydraulic gear rather than hand-pumped hydraulic and a three-bladed prop.

The gear system is similar in principle to that found in Pipers, in that an electric motor drives a hydraulic pump, operating the gear via hydraulic cylinders.

If we had the choice, we would prefer a straight electric system. These have proven less maintenance intensive in the field. Emergency extension is done by releasing the hydraulic unlocks and let the gear fall by gravity.

The gross weight tops at 2600 pounds, only a suitcase short of a Piper Arrow. Standard empty weight is stated as 1850 pounds but in the model we flew, it was 1893 pounds for a useful load of 707 pounds. With full fuel—72 gallons total, 68 gallons usable—payload is only 300 pounds or so, not even two standard FAA bodies.

If this airplane is used as a trainer, it needn't tanker that much fuel around. Indeed, 50 gallons would be plenty, for an endurance of 4 1/2 hours with reserves and another 108 pounds of payload for a long trip.

Speaking of which, the SP20 has a small hatshelf behind the pilot's seat and a fair-to-middling baggage area. The hatshelf isn't rated for baggage weights but the baggage area will accommodate 100 pounds. It's behind the seats and awkward to get at, since the seats have to tilt forward. A big bag will be a chore to wrestle into place.

### **Like a Bridge**

The design of the fuselage structure is vintage 1940s. First a steel frame is constructed, with each piece of tubing corrosion-proofed before the airplane is assembled. Rather than skinned with fabric, as in days of yore, the airframe is covered entirely with sheet metal.

All attach points are made from hogged out metal, not forgings or weldments, including the push-pull tubes that run to the ailerons and elevator. Micco has assumed the role of assuring the quality of the 6500 parts that make up the SP20. The company makes 84 percent of the parts in-house, a relatively rarity in any airplane manufacturing, let alone light airplanes.

Some exceptions are the windows from L.P. Aeroplastics, Cleveland wheels and brakes and a few of the curved sheet metal parts.

### **Flight Test**

Because of its positioning as a sport plane and potential advanced trainer, the preconceived notion is that the SP20 is small. Yet approaching it on the ramp, we were surprised at how big it is. Because of the conventional landing gear, the main gear legs are tall, raising the spinner to a

height you'd expect of a Bonanza.

No surprises on the walkaround, other than the need for a ladder or stool to get at the oil dipstick. The only unusual items are the external Fpower plug behind the wing on the left side and the small doors that enclose the retractable tailwheel.

Because of the sliding canopy, getting in and out in the rain would make a mess of the cockpit and would likely leave at least one wet footprint in the middle of the seat. Handholds for getting down are sturdy and clearly marked but all of the two-seat airplanes with canopies that we've tried are awkward to enter and exit. The SP20 is no exception.



**The Micco SP20's standard equipment includes fuel dual controls with single throttle on a console between pilots.**

The canopy in the new airplane we flew slid easily, without the tendency to flex and bind we've seen in other canopy airplanes, such as the Grumman Tiger. The airplane can be taxied with the canopy open but it can't be flown that way.

Inside, the attention to ergonomics is, with only a few exceptions, excellent. The control stick is beefy and solid, with the sculpted grip falling easily to hand, including PTT and landing/taxi switches on the grip.

For a more relaxed ride, resting a hand on your leg puts the stick within reach of two-finger flying, which you'll want for even short straight-and-level stints. The seat belts are four-point harnesses and the cabin, surrounded by a steel cage, feels solid and secure.

The engine and prop controls are on a center console, and reaching the throttle is a bit awkward when it's back at idle. If you try to push the throttle forward, your wrist contorts and the heel of your hand hits two guards surrounding the flap switch. Instead, you have to pull the throttle forward initially. This could use a little design work, in our view.

Gauges—Electronics International digital designs—are well placed, as are principle electrical switches on the lower panel. Micco uses old-style toggle switches, not the rockers found in most new airplanes. The bubble canopy affords excellent visibility, but the greenhouse effect can heat up the interior in a hurry, especially on a humid Florida day.

Micco has fabricated a sunscreen that cuts light and heat overhead dramatically, yet you can still see through it and, when it's not needed, it easily unsnaps and stows.

The sunscreen is so effective that, during steep turns, we were looking around it until company pilot Greg Garee mentioned that it was transparent. When you look at it, it seems solid; when you look through it, it's transparent. Neat stuff.

The tailwheel is fully castoring, with a detent for straight ahead. Steering on the ground is through differential braking, which is easy to get used to. The view over the nose is better than most taildraggers—on par with a Citabria, way better than a Cub or Champ. No S-turns are

required to see ahead.

On takeoff, the combination of the tailwheel detent and the effective rudder help make directional control effective at low speeds. The airplane has enough power to obviate the need to raise the tail and accelerate to takeoff speed. Garee raised the tail slightly and the airplane quickly flew off the runway.

The rate of climb settled in at more than 1000 FPM, which beat the book because we were under max weight by a couple hundred pounds, with partial fuel. The view over the nose at climb attitude was good and the airplane trimmed easily to hold pitch attitude.

Steep turns, Dutch rolls and some other things we'll never admit to proved that the SP20 gives little away when it comes to handling. The nose stays where you put it and maneuvers feel solid, with no tendency for the airplane to hunt in pitch, wag its tail or fall off on one wing, even in the bumpy south Florida summer air. We did find the roll pressures somewhat heavy for an airplane that looks so sleek.



**SP20's hatshelf isn't rated for baggage. The baggage compartment can carry 100 lbs., but is awkward to access.**

### **Less Than Light Speed**

In a comfortable cruise at 3000 feet and 25 inches squared, we noted an average upwind/downwind GPS groundspeed of 129 knots. Surprisingly slow for a light retractable with 200 HP. Basically, then, for cruising, this is a 130-knot airplane, on 9 to 10 gallons per hour. (Micco's data claims a 140-knot cruise at 7000 feet.)

On approach, the SP20 descends quickly if you chop the power, even without drastically dropping the nose. Hold a little power and the airplane seems to naturally find the proper attitude for a three-point landing, which we made easily even in a gusty crosswind.

Flaps cause little pitch change and control remains positive throughout the flare and touchdown, especially for a taildragger. Micco credits the wide stance of the main landing gear with giving the SP20 its relatively docile ground-handling characteristics, something it will need in spades if Micco hopes to make inroads into the trainer market.

### **Conclusion**

The Micco SP20 is a stout airplane that gives the impression of being well-designed and solidly built. We liked the styling, the ergonomics and the construction quality, but for some reason we left the airplane feeling somewhat disappointed, especially with its lack of speed. Frankly, it looks faster than it is.

As a sport airplane, the SP20 suffers from heavy roll forces. Micco originally intended to certify the airplane in the aerobatic category, but settled on utility due to some complications in one corner of the flight envelope. The higher powered SP26 will have servo tabs to help with roll forces and the SP20 will eventually get these as well.

Other aspects of the airplane's handling make it a worthwhile sport plane, although no one will mistake it for a Pitts. The seats are supportive, the visibility is outstanding, pitch control is crisp without being unstable.

As a traveling machine, the airplane is limited by having only two seats. The smallish baggage compartment is awkward to get to and cruise speed, typically 120 to 130 knots, is along the lines of a Grumman Tiger but a bit slower than a Piper Arrow.

Micco is working on an optional baggage compartment extension tube that will allow such cargo as skis and golf clubs, which should add to its cruising appeal.

The SP20 will appeal to people who want an airplane for transportation, but also a stick-

and-rudder-yank-and-bank fun machine.

If you don't mind the less-than-blistering cruise speed and only having two seats, the airplanes rolling out of the factory in Fort Pierce, Florida are unlike anything else out there. Whether they'll find a ready market remains to be seen.

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