



## *SIAI Marchetti SF.260—an F-16 with pistons*

BY MARC E. COOK

**F**rank Strickler was in the instructor's seat—the left—of the SF.260, making himself comfortable under the four-point harness. "There are two kinds of airplanes in the world," he said laconically, pulling slightly on the Marchetti's stick. "There

are *fighters*, and there are *targets*." The nose of the SF.260 rose on the horizon, airspeed bleeding to 135 knots; then he pulled firmly, abruptly sideways on the stick. In a bit more than one second the aileron roll was complete, the bright spinner lined up perfectly with our pre-





vious heading; we hadn't lost a foot of altitude. Turning and grinning, Strickler said, "You can bet that the Marchetti is no target."

After an hour of loops, rolls, and splits, Strickler, owner of Fox-51, the source of SIAI Marchetti SF.260s in North America, had made his point. The Marchetti is, despite the conspicuous lack of guns and a trigger (that red button on the stick does little more than key the com transmitter), a fighter. The view from the cockpit is military; a dull gray covers the metal instrument panel and nearly everything else. The switches, even, are mil-spec items. A thick-grip stick pokes through the floor, and the seat cushions can be removed to accommodate parachutes. The canopy, mercifully tinted on top, affords an unrestricted view of the enemy, er, traffic. No question, the details are correct, right down to the barber-pole striping on the canopy jettison handles.

Though nonstandard compared to civilian aircraft, the controls and switches

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*The cockpit is pure military, with four-point harnesses and seat cushions that remove to allow for parachutes.*

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are logically and intuitively placed. One example: The SF carries its 64 gallons of fuel in four tanks, two 13-gallon wing tanks and two 19-gallon tip tanks. The selector valve is located front-and-center below the throttle quadrant; the four fuel gauges on the panel above are oriented in exactly the same way as the selector—the lever always points in the relative direction of the correct gauge. Plus, there's no Off position on the main selector; a separate shutoff is located above the pilot's left knee.

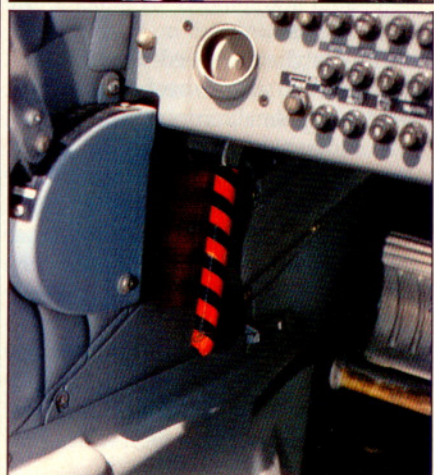
It's fortunate that the Marchetti has a fairly straightforward fuel system, because with 260 horsepower under the

cowl, those 64 gallons go quickly. Cruise consumption is on the high side of 15 gph, more if you abide by Strickler's cruise suggestion: "Use 2,500 rpm and keep the manifold pressure up." Either way, you'll have little more than three hours' endurance with reserves. If you plan on doing a few loops or rolls on your cross country, you can forget filling those tip tanks; they must be empty for aerobatics.

Limited endurance isn't much of a problem when you consider the SF.260's speed. Typical high cruise numbers are near 190 knots, and even pulled back to 65-percent power, the slick Marchetti will rumble along at 176. While waiting for a North American T-6 to join us for a photo session, we pulled the Lycoming back to 20 inches and 2,200 rpm; indicated airspeed, still nearly 140 knots.

No less impressive is the Marchetti's climb performance. The book calls for 1,800 fpm, but at a lighter-than-gross weight the SF went up at nearly 2,000







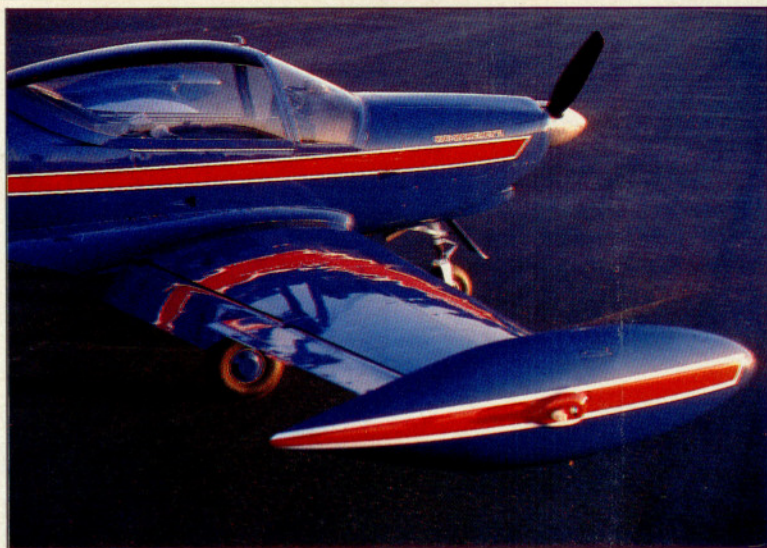
fpm. Performance like this can be matched by few aircraft, chief among them upstart homebuilts like the Glasair III and Swearingen SX300, both of which carry an additional 40 hp compared to the SF.

Looking at the SF today, it's hard to imagine that it sprang from the mind of Stelio Frati more than 20 years ago. The SF.260 originally was designed as a 250-hp three-seat sport machine, but SIAI Marchetti decided it would also make an ideal military trainer. Frati sold the rights and SIAI began production in the early 1960s. Almost immediately, the engine grew in power to 260, and in the ensuing years various detail changes were made to the airframe—including the addition of servo tabs on the ailerons to reduce stick force—and interior. The basic shape, which was similar to that of Frati's earlier, all-wood Falco F.8L (which lives today as the kit-built Sequoia Falco), remained the same. It's easy to see why: The 260's proportions are very nearly perfect; it possesses an enticing combination of beauty and menace, much like Sigourney Weaver wielding a howitzer.

At a gross weight of 2,430 pounds, the SF tips the scales much like a Piper Archer. That's featherweight for 260 hp—sort of like dropping a Corvette engine into a Chevette—so it's no wonder the Marchetti is as speedy as it is. Plus, the airplane is clean; both the wing roots and the tip-tank/wing junction are faired, and the cowling fits as snugly as a pair of blue jeans right out of the dryer.

The windscreen is steeply raked, and the sliding canopy fits with, dare we say it, military precision. Curiously, neither the main gear nor the nosewheel are faired in; Strickler claims that to ensure the SF was up to military abuse, gear doors were not included in the design, although he says some are in the works that could add another 10 knots to the SF's top speed.

The Marchetti's speed potential, and the fact that such a beefy powerplant resides in a small airframe, might lead one to expect the SF to be difficult to fly. That's not necessarily true. For someone used to tamer machinery, the Marchetti is a handful at first, mostly because things happen very quickly. Pour on the power for takeoff, for example, and the Marchetti will scoot to the 65-knot rotation speed before you can complete one scan of the engine gauges. Leave the airplane on the ground too long and it reminds you of your hesitation with a text-



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book wheelbarrow maneuver.

Then the electric gear comes up and you wait for 90 knots before drawing in the flaps; but on the SF, by the time the wheels have cycled, you're already at 90 or better. Twist the detented trim wheel two clicks nose-up and the SF will find the 110-knot best-rate speed. Though the SF is basically stable and straightforward, a low-time Marchetti pilot will be mighty busy during departure.

Once aloft, however, the Marchetti shows a much more docile side. Control response is just about perfect. Only small inputs are required for normal maneuvers, and each nudge of the stick elicits a direct, prompt response. The 260 also seems unwilling to let you make an uncoordinated turn. Except during the takeoff roll, you can perform most maneuvers with your feet flat on the floor. Coaxing a power-on stall from the SF is extremely difficult, and prodigious buffeting takes place well in advance of the stall. With the power off, the nose drops smartly, but the SF shows no tendency to drop a wing.

At the same time, each control surface has enough authority to allow you to grease crosswind landings. Once you are used to the amount of control force required to smoothly fly the airplane, the Marchetti becomes an absolute joy to fly.

But it's when you ask the Marchetti for aerobatics that it really begins to shine. Stick forces build smoothly and predictably as the airplane is brought away from straight and level. The airframe is stressed to the Aerobatic-category limits of +6 and -3 Gs, although it also conforms to the old military standard of +7.33 Gs, according to Strickler. And then there's the power: Vertical maneuvers are made easy by the SF's generous power reserves.

Landing the SF.260 requires no special technique other than to keep a watchful eye on the sink rate. With the full 40 degrees of flaps hanging out, the SF fairly plummets. "I can't imagine overshooting a forced landing in this airplane," states Strickler. Maintaining a stabilized approach isn't difficult, although a healthy amount of power must be kept in until the last. The SF's landing gear has a low 108-knot extension speed, so you must plan well ahead to slow it down, lest you enter the pattern at 130 with no way to bleed off airspeed. It happens more easily than you might expect, too.

With the SF near the ground, the





temptation is to flare too high, largely because it sits lower to the ground than anything this side of a Mooney. Even so, the airframe can take the occasional drop-in, as I demonstrated by using my Cherokee-calibrated senses in the SF; it stopped flying abruptly and fell that last two feet like an express elevator with its cable cut. But it rolled straight down the centerline, nothing broken.

The Marchetti's capabilities as a sport aircraft are beyond reproach, but the pilot intending to use one as a traveling machine butts against a few serious barriers. One is payload. With the fuel tanks full, payload is just over 300 pounds. The gross-weight limitation is based on the FAA's 61-knot stall speed for sin-

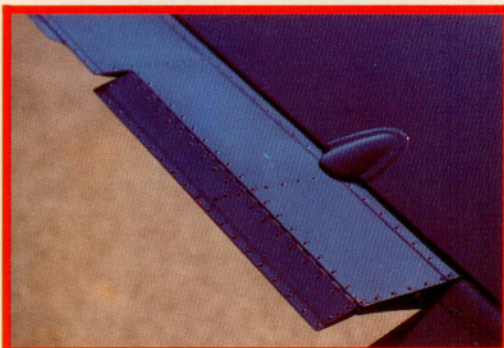
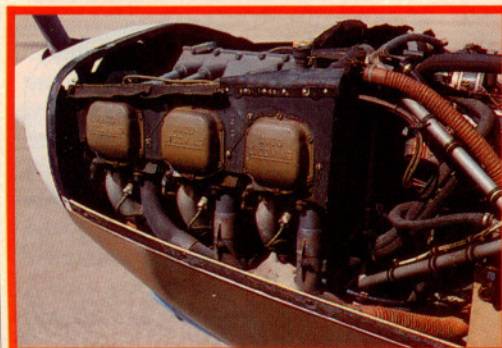
gles; the military versions of the SF can weigh as much as 2,626 pounds. And although there is a third seat, the only way to use it would be to carry just 27.5 gallons of fuel, good for about 90 minutes' travel.

Another shortcoming is noise. With nearly no soundproofing and a big Lycoming up front, the SF.260 ensures that its pilot should always wear a headset. The level of noise might be high, but the quality almost makes up for it: The unmuffled engine emits a glorious, deep-chested rumble.

Neither Strickler nor the 50 or so SF.260 owners in the United States treat the Marchetti as a Bonanza replacement. Sure, it can travel, making 600-nautical-

mile hops at medium-twin speeds, but it won't be a particularly *comfortable* three hours in the cockpit. A full complement of IFR avionics comes standard on every SF.260, although you'll not find an autopilot on that list. The SF exhibits enough stability that flying on instruments isn't difficult, and thanks to its high wing loading, the Marchetti thumps through turbulence with little more than a mild shake of its tail.

Chances are the pilot with \$220,000 to spend on the SF won't care about jack-of-all-trades versatility. The Marchetti is a high-powered, thrill-a-minute carnival ride on wings. It can perform aerobatics nearly as well as a Pitts (sustained inverted maneuvers, too, when



*The Marchetti gets its cat-quick reflexes through generous control surfaces and servo tabs on the ailerons; the result is an airplane flown with the fingertips. With a Lycoming O-540 nestled under the cowl, the SF.260 cooks up an age-old recipe for speed—a large engine in a diminutive airframe.*



equipped with inverted fuel and oil systems—a \$10,000 option), yet the SF is just civilized enough not to overwhelm someone with little time in type. Unless you want to build it yourself, you can't get that anywhere else; the SIAI Marchetti SF.260 hardly could be called a "target." □

### SIAI Marchetti SF.260C

Price as tested: \$220,000

(SF.260C can be purchased only fully equipped.)

#### Specifications

Powerplant	Textron Lycoming O-540-E4A5 260 hp @ 2,700 rpm
Recommended TBO	2,000 hr
Propeller	Hartzell, two-blade
Recommended TBO	1,500 hr
Length	23.25 ft
Height	7.92 ft
Wingspan	27.42 ft
Wing area	108.7 sq ft
Wing loading	22.35 lb/sq ft
Power loading	9.35 lb/hp
Seats	3
Cabin length	7.08 ft
Cabin width	3.5 ft
Cabin height	3.92 ft
Empty weight	1,755 lb
Useful load	675 lb
Payload w/full fuel	303 lb
Max takeoff weight	2,430 lb
Max landing weight	2,430 lb
Fuel capacity, std	64 gal (62 gal usable) 384 lb (372 lb usable)
Oil capacity	12 qt
Baggage capacity	90 lb

#### Performance

Takeoff distance, ground roll	980 ft
Takeoff distance over 50-ft obstacle	1,550 ft
Max demonstrated crosswind component	25 kt
Rate of climb, sea level	1,800 fpm
Max level speed, sea level	196 kt
Cruise speed/Range w/45-min rsv, std fuel (fuel consumption, ea engine)	
@ 75% power, best economy	182 kt/556 nm
6,000 ft	(97.8 pph/16.3 gph)
@ 65% power, best economy	176 kt/682 nm
9,000 ft	(80.4 pph/13.4 gph)
Service ceiling	19,000 ft
Absolute ceiling	20,100 ft
Landing distance over 50-ft obstacle	1,240 ft
Landing distance, ground roll	790 ft

#### Limiting and Recommended Airspeeds

V <sub>x</sub> (best angle of climb)	87 KIAS
V <sub>y</sub> (best rate of climb)	108 KIAS
V <sub>a</sub> (design maneuvering)	162 KIAS
V <sub>fe</sub> (max flap extended)	
Approach (20°)	130 KIAS
Full (50°)	108 KIAS
V <sub>le</sub> (max gear extended)	108 KIAS
V <sub>lo</sub> (max gear operating)	
Extend	108 KIAS
Retract	108 KIAS
V <sub>no</sub> (max structural cruising)	187 KIAS
V <sub>ne</sub> (never exceed)	236 KIAS
V <sub>r</sub> (rotation)	65 KIAS
V <sub>s1</sub> (stall, clean)	69 KIAS
V <sub>so</sub> (stall, in landing configuration)	60 KIAS

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. □