CONSTRUCTION

BY JOHN BERRYMAN

AN ITALIAN FIGHTER FOR PEANUT SCALE

THE S.A.I.-207

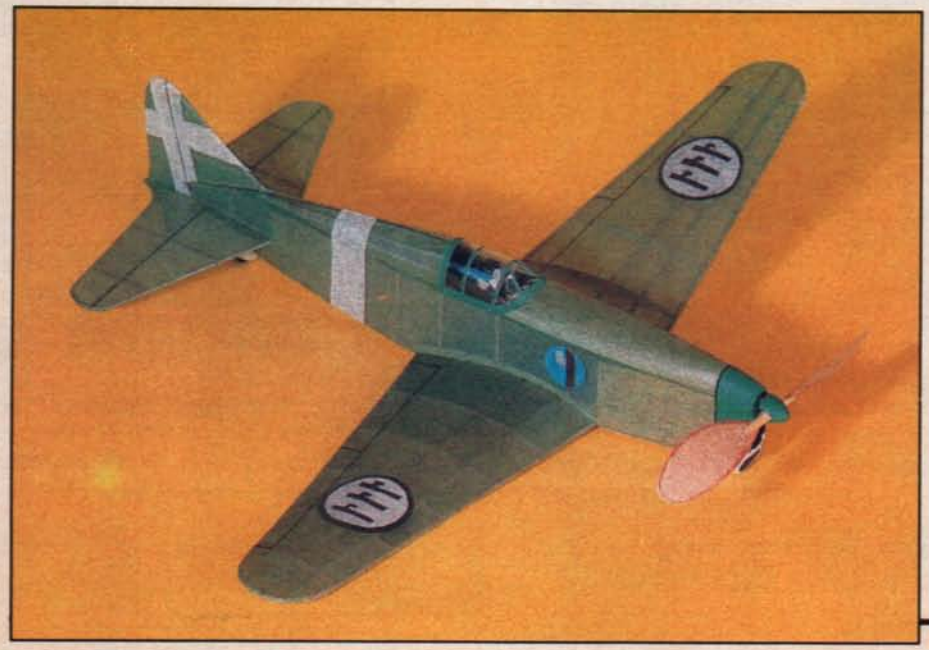
Arguably the best example of the "light fighter" concept to come out of WWII, the S.A.I.-207 has the elegant lines that all Italian aircraft seem to possess.

Everybody wanted one. Just about everybody tried to build one. And it appears that only the Italians nearly got one. I'm talking about the "Light Fighter" concept: a small, light pursuit machine, constructed of "non-strategic materials" (read: wood), that would somehow manage to perform on a par with larger, heavier, more sophisticated machines.

The S.A.I. (*Societa Aeronautica Italiana*) 207 was an outgrowth of the pre-war S.A.I.-7, a civilian, tandem-seat, two-place monoplane that achieved a 100km closed-course speed record of 244 mph on a piddling 280 horsepower. After some fumbling and false starts, this aircraft evolved into the S.A.I.-207. Of all-wood construction, the 207 flew for the first time in 1942. Powered by a 750-hp., air-cooled, inverted V-12 Isotta-Fraschini Delta engine, the 207 achieved a maximum speed of 398 mph at 14,765 feet, and was robust enough to hold together during a series of 466 mph dive tests.

Armament was composed of two 20mm Mauser MG-151 cannon and two 12.7mm Breda-SAFAT machine guns. As many as 13 pre-production prototypes were completed, but production was stopped to accommodate production of the even more advanced S.A.I.-403.

I've always found Italian WWII fighters to be extremely attractive, and when I saw an illustration of the 207 (which displayed its too-cute-for-words pant-ed tail wheel), I was hooked.



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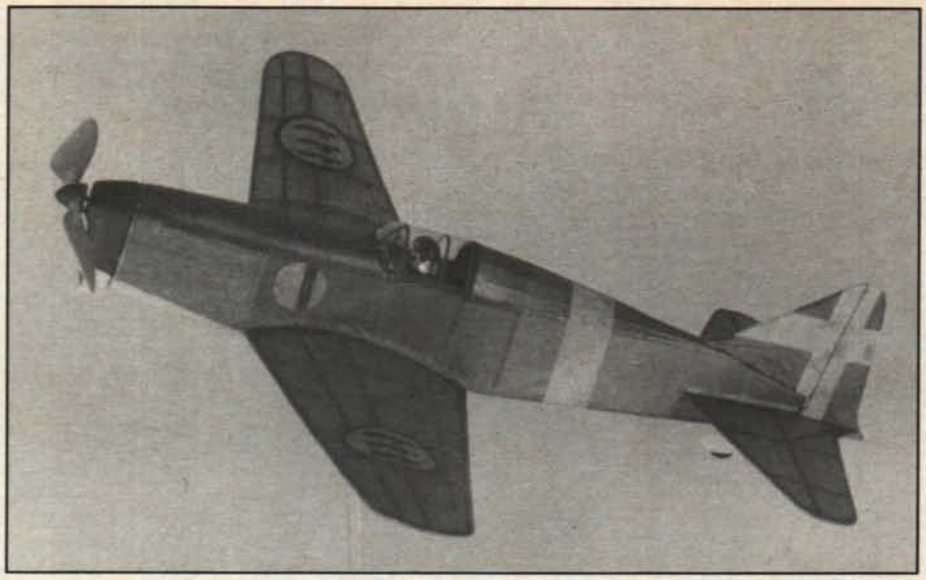
Flight Surfaces:

There's nothing new here for the experienced builder. As always, every bit of weight you can save in the tailfeathers will pay large dividends later. Dig into your balsa box for some of that 4-pound stock you've been hoarding. Unlike many Peanut designers, I use 1/16-inch stock for the leading and trailing edges of my wings. My rationale is that after shaping, the stock will approximate 1/20-inch square anyway, and that particularly in the case of the wing leading edges, a bit of strength is warranted. Incidentally, after years of experimenting with various methods, I've found nothing better for shaping the leading and trailing edges of wings than those disposable sandpaper nail-files. Sometimes, the cheap solution is the good solution!

Fuselage:

There are some features of note here. First of all, please note that the fuselage is not rectangular in section! Rather, it is trapezoidal in shape. I used false-bulkheads to maintain this shape as I constructed the fuselage; you may elect to use whatever even more complex and elegant method you wish. Second, note that the upper longerons meet at the last fuselage cross-member, and become the mount for the



From any angle, the S.A.I.-207 is one good looking aircraft. Makes an excellent flying Peanut, too. Plan includes color scheme data and lists two sources for scale documentation.

rudder. In other words, the trapezoid becomes a triangle at that point. Third, there are some design/assembly considerations you may wish to keep in mind as you proceed with the fuselage:

- The 207 has a high thrustline (I've actually deviated from scale, and dropped it a bit). The issue here is that a high thrustline provides wonderful opportunities for your rubber motor to rub and bind on fuselage cross-members, or even break them (particularly in the nose). Not good. I've tried to partially address this issue by mounting the rear motor-peg low in the fuselage.
- You'll notice that the 207 features an oil cooler (?) mounted on the chin of the cowl. As drawn, it will almost certainly interfere with your prop. Check clearances carefully before painting!
- Finally, the rubber-motor-rubbing-on-bulkheads bugaboo irritated me so badly that I decided to try another approach. Though the plans show conventional sheet-over-formers construction for the upper cowl, I decided I was willing to pay a weight penalty if, in return, I benefited from better motor runs and less breakage of internal structure. So, in the prototype, the upper cowl is actually a soft balsa block that I tack-glued in place on the fuselage, shaped, removed from the fuselage, and hollowed with a Dremel.

Now, here's the interesting part of the story: The finished aircraft, including two coats of thinned nitrate dope, weighed 6.8 grams—about what my stuff usually tends to weigh. In other words, apparently I paid no weight penalty. In addition, the building process was definitely speeded up by using this method. And finally, the use of a hollow block imparts no twists or torques to the fuselage, as can happen when sheet balsa is "persuaded" to assume compound curves.

COVERING AND FINISH

Based on some probably pretty typical illustrations in The Rand McNally Encyclopedia of Military Aircraft, I covered the upper surfaces of the 207 in Peck's Superlight green tissue, and the lower surfaces in Peck's Superlight white.

The markings (I made mine from tissue) presented a problem, and perhaps I can save you some misery here. The cross on the rudder and fuselage band are white, and the Peck tissue simply permitted too much green to bleed through. The situation was even worse on the wings, where the Peck tissue faded to a dull gray when doped over the black undercircles.

On my prototype, I addressed this by removing the Peck tissue and using heavier white tissue—but frankly, this solution was still less than ideal.

Personally, given the choice of dinking with frisket paper and airbrushes or being in bed with a high fever, I'll take the fever every time. But I'm afraid that this is one project where being willing to accept the annoying rattle of a compressor along with the mess, smell and overall pain of airbrushing, could result in a superior model.

DETAILING AND FINAL ASSEMBLY

The control surfaces, landing gear doors, etc., were outlined (after the ship was doped) with a Sharpy permanent marker. The canopy was formed on my venerable *Model Builder* vacuum former, and the canopy structure outlined with painted masking tape: The pilot was fabricated using the time-honored "take some wood and cut away everything that ain't a pilot" method. The fuselage markings (squadron insignia?) were drawn on light bond paper with water-based markers, cut out, and glued to the fuselage with a skiff of Titebond.

I hope you enjoy building and flying your model of this attractive, rare airplane. *Caio,* baby! ***MB***