Spitfire Stunter

By FRANK B. BAKER

With a few modifications from true scale this designer turned out a realistic machine that performs the stunt pattern. For .29 to .36 engines.

▸ Many stunt fliers desire to have a fighter type aircraft that stunts yet maintains its scale appearance. The Supermarine Spitfire fills the bill. Its large wing and graceful lines have made it a favorite with model builders for years. It has natural stunt proportions though the elliptical wing may have kept most model builders from attempting a stunt version. The wing actually is not difficult to build.

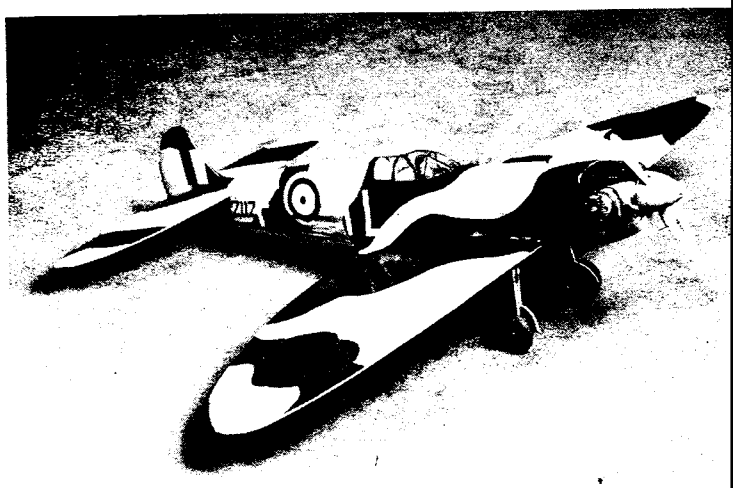
The construction of this plane must begin with the wing and the flaps. The wing spar is used as a jig and, as it is not a key structural member, it may be cut away later for the bellcrank. The ribs are placed on the spar and a piece of 1/4 in. balsa pinned to the trailing edge. The height of each rib is marked and the piece removed. Taper this spar according to the marks and note that spar extends to the wing centerline. The flap spars are constructed in the same manner but are 3/32 in. shorter in height throughout their entire length. Cut four flaps from 1/32 in. sheet and cement one right and one left to the flap spars. A 1/4 in. wide, 3/32 in. thick, outline of the trailing edge of the flap is added to strengthen the flap trailing edge. The flap ribs and block at the root end are added. This block and the reinforcement are tapered to match the ribs. The top sheet is then added and the leading edge rounded.

Hinges and flap horns are added. Be sure to put the hinge on the flap horn before installation. Attach the flaps to the rear wing spar *before* cementing this whole assembly to the ribs. The 1/16 in. sheet trailing edges are added and allowed to overlap the flaps approximately 1/16 in. Don't worry about the flaps moving at this time. The leading edges are cemented in place. The 1/16 in. sheet is placed on the *top* of the wing and a slot cut for the body width *only* of Former 4. Mount the landing gear on Former 4 and cement into the wing; then add the lower 1/16 in. sheet. The rest of the wing is constructed by normal methods. The pushrod cross arm is installed and the flaps can be freed by trimming the overlapping 1/16 in. sheet. The flap arms move in an arc, hence may need some adjustment. A 3/4 oz. lead is added to the outboard tip, as far forward as possible.

Cut the body sides from hard 3/32 in. sheet and assemble Former 2, the motor mounts, tank, body sides, and the assembly containing Former 4 simultaneously as a unit. Cement the body sides to the wing after the remaining body formers have been installed between the body sides. The body sides do considerable twisting in and out, which is necessary to maintain the oval cross-section. The top of the body from Formers 2 to 6T is covered with a 3 in. wide sheet of 1/16 in. Soak this in hot water and it will make the transition from a square section at Former 2 to the round section at Former 4 with ease. The stringers can be added at this time. The side stringers taper from the front and back to a maximum thickness about Former 8.

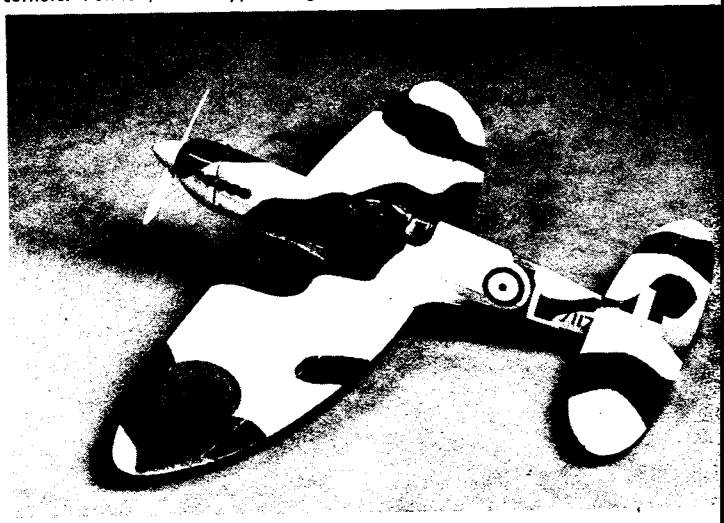
The elevator is built by lightly cementing two sheets of 3/16 in. together. The elevator is shaped and the cut-out removed. The sheets are then split (*Continued on page 42*)

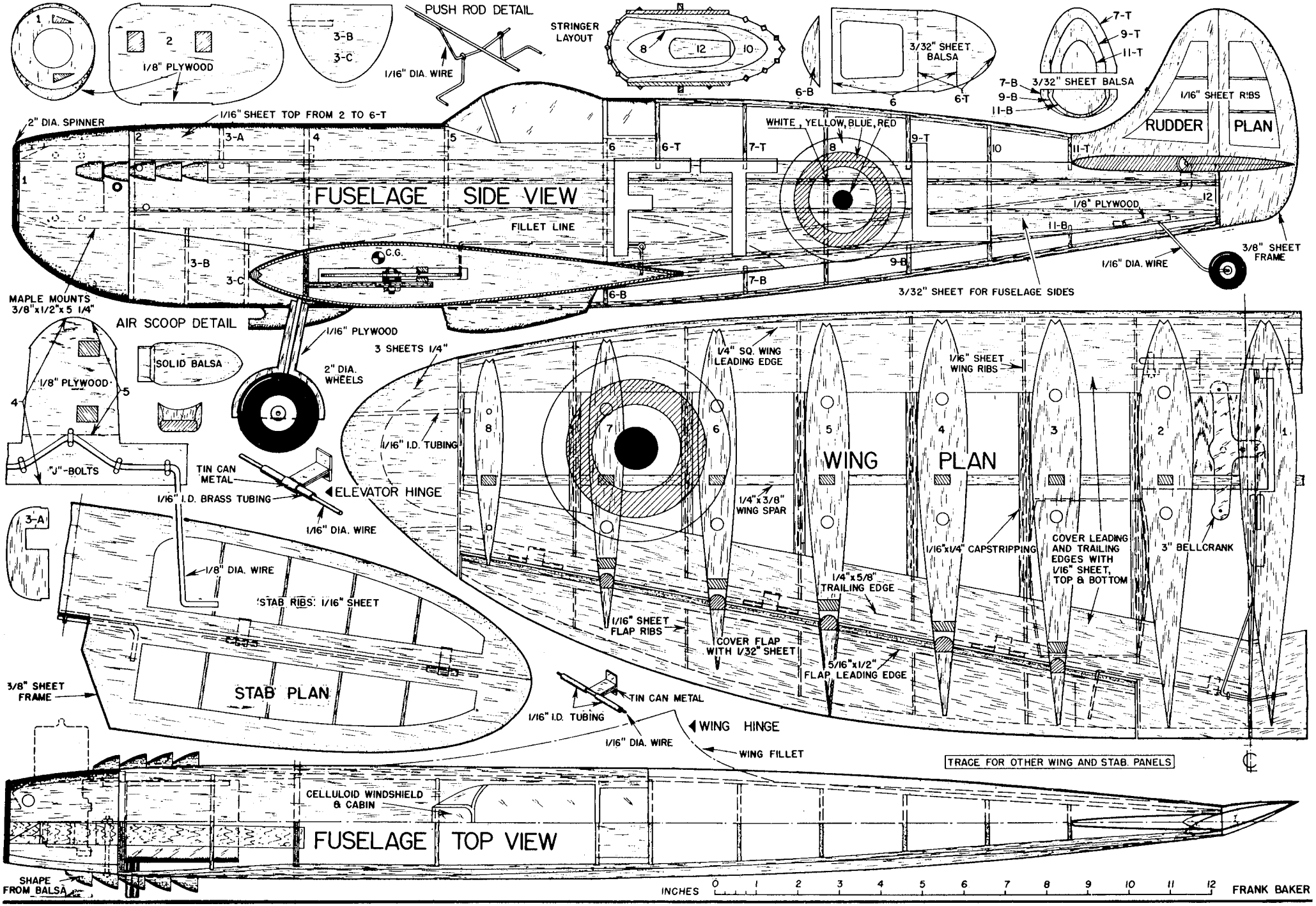
If you find yourself admiring Baker (pardon, Frank) instead of the Spitfire, blame it on that effective sand-and-spinach camouflage. A big ship.



Only obvious change was big increase in horizontal tail area. You can't stunt without flippers, bub! The cylinder you'll see wherever it goes.

Big flaps, working in conjunction with the flippers, help get around the corners. Pointed, scale type wing is trickier, though, than blunt tips.





FULL SIZE PLANS AVAILABLE. SEE PAGE 50.

mounted timer. It was very compact—only 4.9 in. across the heads—and had inclined plugs in the sides of the heads. The Craftsman-Twin was interesting design but we were never able to extract much power from it. This may have been caused by the fact that the shaft was, in effect, two normal single-cylinder shafts in which the extended crankpins were connected by a bolted-on web. This, in itself, was satisfactory and obviated the need for split big ends, but the whole assembly gave rise to difficulty in insuring perfect alinement of the shaft in its bearings since this also depended on the correct alinement of the split type crankcase castings and end plates.

There have, of course, been numerous "unusual" types of single-cylinder, two-cycle motors. One unconventional type of engine which, nevertheless, achieved popularity was the fine Atwood Champion with its twin rotary valves and, earlier, twin carburetors. No other make, so far as we remember, adopted this layout, although the drum type valve rotor was also used by Dan Bunch's Contestor D.60R and, later, of course, superseded the disc valve in the stunt type Fox .59, all three of which motors we have owned with satisfaction.

When talking of "unusual" designs, a line has to be drawn somewhere as to what constitutes an "unusual" motor. Generally, it is found that an engine with unorthodox features is not one mass-produced in very large quantities. The big exception at the present time is, undoubtedly, the Cox .049 (Space-Bug and Thermal-Hopper) which, with its reed-valve induction and many other unique design features, shows that unorthodox design, when allied to first class construction, need be no deterrent to the wide acceptance of a motor by model builders.

END

Spitfire Stunter

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and both halves grooved to receive the hinges and elevator horn. These are installed and the halves cemented together. The tin can metal soldered to brass tubing is shoved through a slit in the stabilizer and bent at 90°. Trim flush. If done properly no hinges can be detected when the controls are in neutral; this adds materially to the scale appearance. The preceding points are the only ones that depart from standard stunt construction. Every effort must be made to keep the tail end of the plane light as it can easily become tail heavy.

Silk covering was used but actually is necessary only for the wing fillets. The color scheme is sand, cream with brown added, and spinach, Stinson green with a small amount of black added, topside; the bottom is Cessna grey. The roundels are built up from concentric discs of Trim Film. The lettering is white Trim Film.

The model was sprayed with Speed-O-Lac clear nitrate dope until the pores in the silk filled. This took three to four coats. For the sand and spinach on the top, the whole plane was given two coats of Aero Gloss, Taylorcraft cream. Enough black was added to kill the brightness of the yellow. The spinach was Aero Gloss Stinson green, again with black added. The under portion was Aero Gloss Cessna grey. All trim was cut from Trim Film and clear Aero Gloss sprayed over them after application.

A .29 or .35 engine is used for power and the plane is flown on 60 ft. lines. This plane has many of the characteristics of the full size plane and must be *flown*, not hauled about. Tip losses of the elliptical wing require that all stunts be entered into and departed from smoothly. Once you have felt out this peculiarity, you will be able to stunt with ease.

The scale appearance of this ship is very deceiving. People expect it to fly level! END