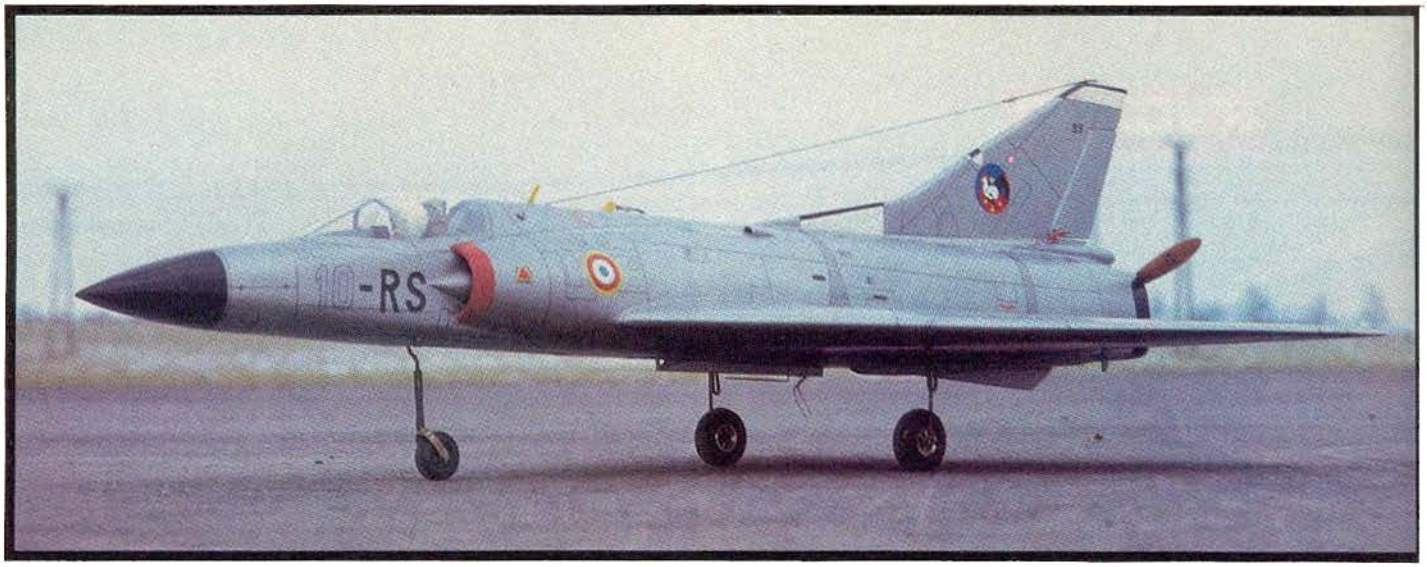
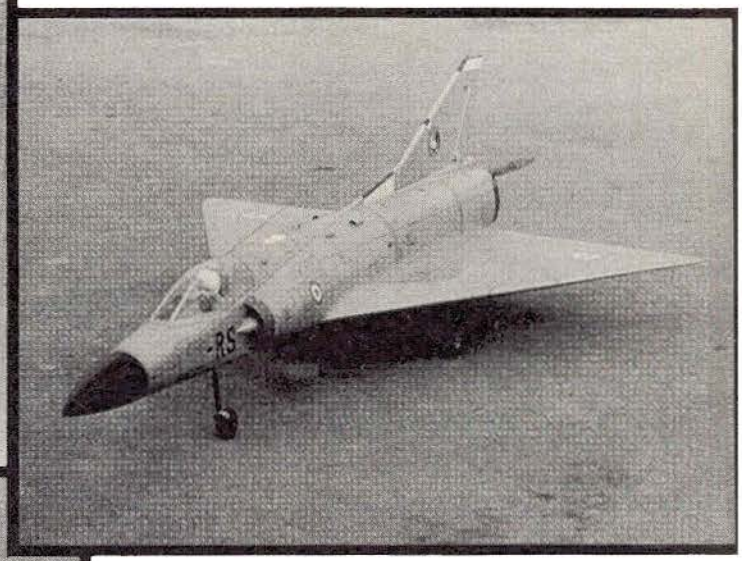
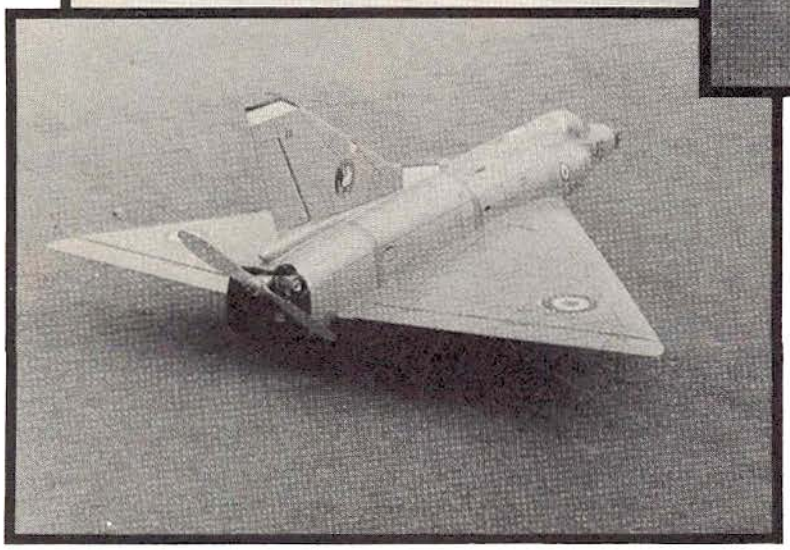


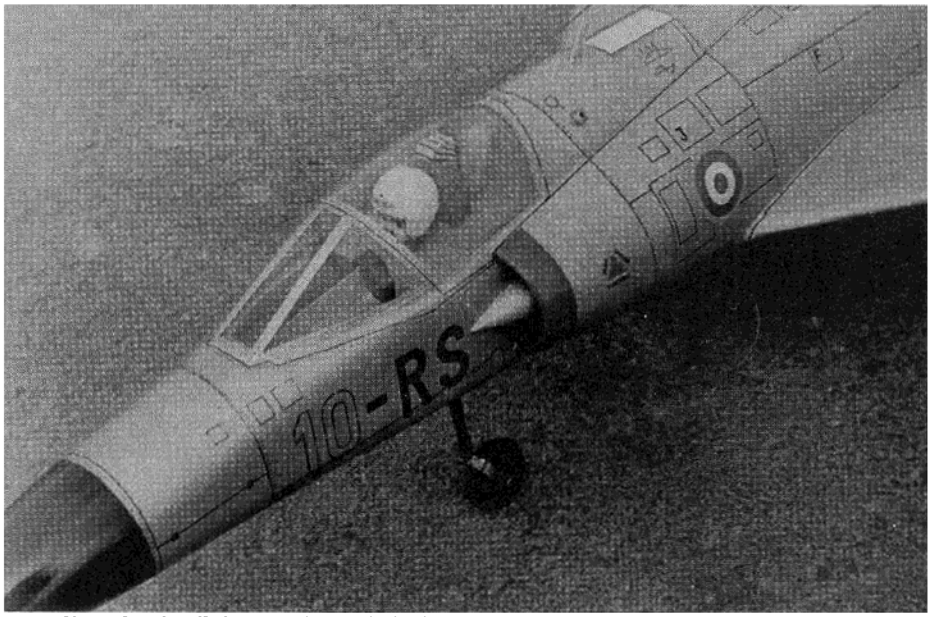
MIRAGE IIIC





For an exciting model to look at and also to fly, try Pavel's S.O.S. Mirage. It isn't for the beginner; however, a good sport flier can have a ball.

By Pavel Bosak



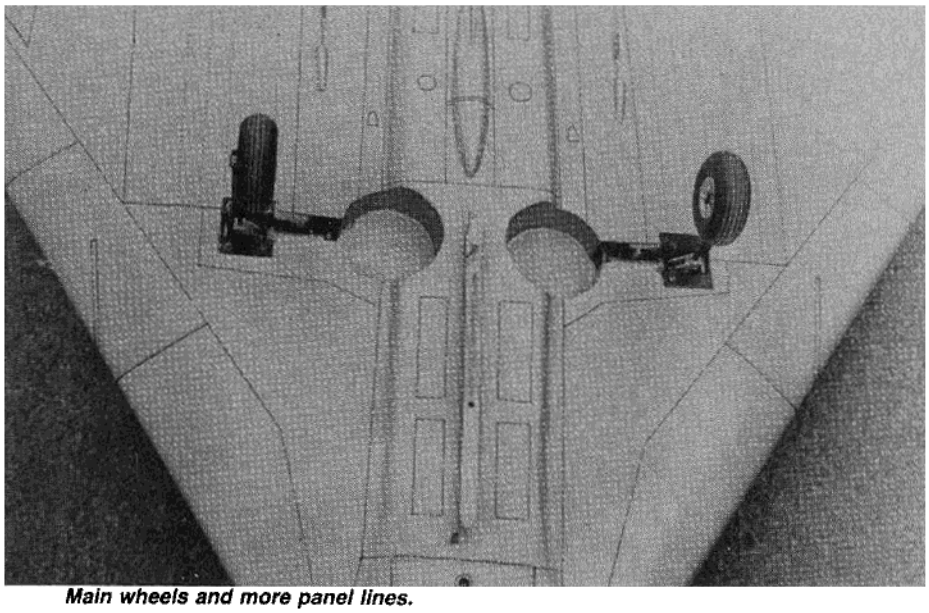
Note the detail that can be added with a draftsman's pen.

drilled to accept the nose gear unit prior to assembly. The fuselage formers are now glued in place between the fuselage sides. If a fuselage jig is not used, exercise additional care that no twists or warps are built into the basic fuselage structure. Former F1A is added along with the 3/16" top planking between formers F1 and F2. The bottom 3/16" sheeting of the air channel is glued in place.

The basic wing panels are now attached to the basic fuselage structure by first cutting the notches into the fuselage sides to accept the wing spars, and then gluing the wing panels in place. The 3/8" sheet W1 ribs are fully cemented to the fuselage sides, and the wing spars are glued to the F4 former. The spar joint is reinforced by the installation of the 3/32" plywood W13 plates on the top and bottom of the spars. Be especially careful during this construction step to insure that the wing panels are mated to the fuselage with no twists or warps, and that everything is properly aligned. The 3/16" x 3/4" sub leading edge pieces (W9) are added to each wing panel. The entire 3/32" top wing sheeting is now glued in place.

At this point, it must be decided whether separate ailerons and elevators, or elevons, are to be used. When this is determined, the necessary control pushrods are installed, including those for the rudder and throttle. The landing gear blocks, wheel wells, and retract accessories are now fitted and installed. The retractable landing gear shown on the plans is a Rhom system. The bottom 3/32" wing sheeting is now glued in place. After sanding the sub leading edge/wing sheeting faces to a straight smooth

Looks good even on its back with feet sticking out.



Main wheels and more panel lines.

surface, the 3/8" x 1" main leading edges are glued in place. The wing tip rib (W7) faces are sanded smooth and the wing tips are cemented in place. Both wing panels are now sanded smoothly to the indicated contour.

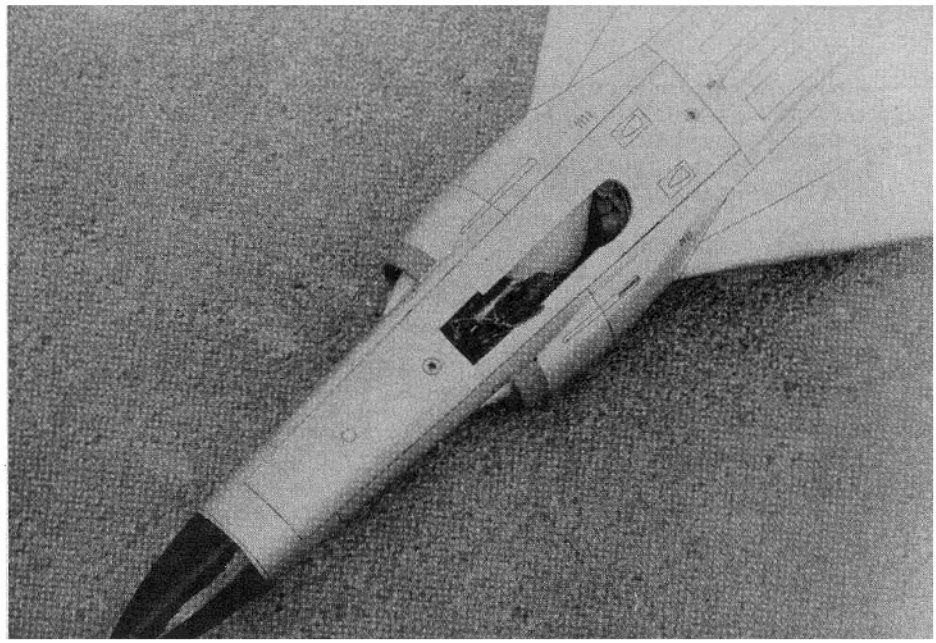
A 16 ounce fuel tank is installed into the fuselage, directly behind former F3, along with all the necessary fuel line tubing. The 3/16" bottom fuselage sheeting is now added. The cooling air channel is now sealed with fuelproof epoxy or enamel and the hardwood block, which holds the tuned pipe clamp, is epoxied in place (if a tuned pipe is to be used). Provision must be made to reach the clamp tightening screw in order to be able to remove or adjust the tuned pipe. After sealing the inner side of the 3/16" top sheet cooling air channel piece with fuelproof epoxy or enamel, it is glued in place. The vertical fin is constructed with a 3/16" x 1/2" inner frame and

3/32" sheeting on both sides. The rudder is 3/8" sheet.

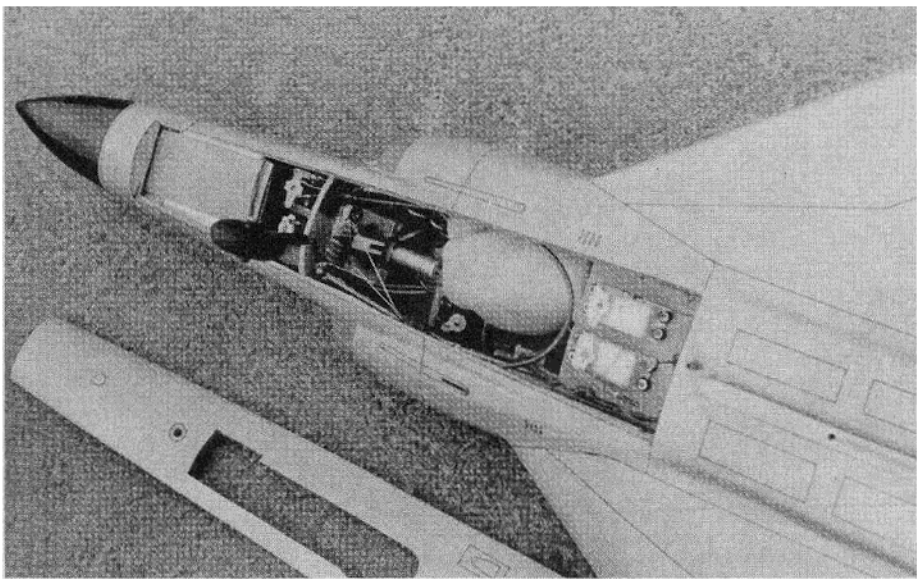
After building the vertical fin/rudder assembly and sanding it to the proper contour, it is glued in place on the fuselage. Be sure the vertical fin is straight and perpendicular. Add former F2A and all of the ACH formers. The fuselage top and air intake channels are now planked with 3/16" balsa. The fuselage nose block is made from a hard balsa block. After cutting and sanding it to shape, it is glued to former F1. Note that this block is also hollowed to accept the airborne battery pack.

The entire fuselage assembly is now sanded to the indicated contours. The canopy is molded from clear butyrate plastic sheet, or a preformed commercially available canopy can be cut and modified to fit. Prior to installing the canopy, whatever cockpit details (instrument panel, pilot figure, ejection seat, etc.), the builder wishes to utilize, should be fabricated and installed. The canopy is then glued in place. At this point, the ailerons (and elevators, if elevons are not to be used) are carefully cut out of the wing panels, according to the plan sheet. After trimming the excess sheeting from the aileron well and aileron inner faces, the 3/8" x 3/4" (W11 and W12) facing strips are glued in position. The end faces of the ailerons and aileron recesses are sealed with 3/32" sheet that is cut to the proper airfoil contour and glued between the top and bottom sheeting. The inner face of the ailerons is planed and sanded to the wedge shape, as shown on the plans, and hinged.

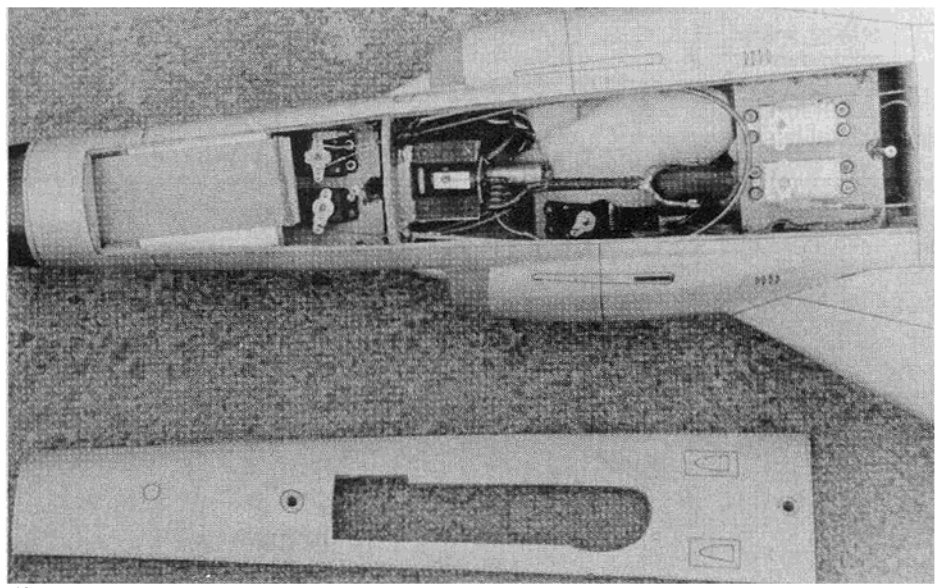
The removable fuselage access hatch is now fabricated. After cutting the hatch segment out of the fuselage bottom, the indicated 1/32" plywood facer plates are glued to the fuselage opening and the access hatch face. The hatch is held in place with two bicycle spokes and nipples. The spokes are attached within the fuselage and extend through two 3/32" plywood insert plates that are recessed into the access hatch surface. The nipples thread onto the spokes and are tightened in order to hold the hatch firmly in place. The entire aircraft is now fine sanded to a smooth finish. Formers ACH1, ACH2, and ACH3 are removed from the cooling air inlet channels, and the insides of these channels should be sanded to a smooth finish. A dowel or stick, with sandpaper attached to it, can be used for this purpose. The end result should be two smooth unobstructed passageways for the flow of cooling air to the tuned pipe and engine. Final details such as the radio antenna, tail skid, braking parachute holder, etc.,



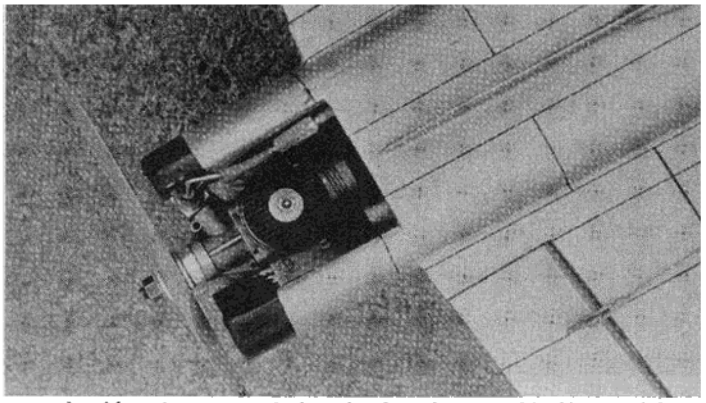
Nose gear extended — Rhoms were used.



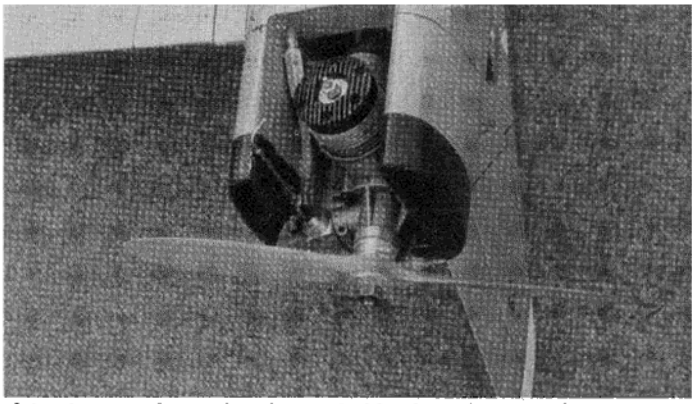
Bottom hatch off showing equipment. Nose gear extended.



Nose gear retracted.



Looking at rear mounted engine from bottom side. Note carb has to be rotated 90° for reverse rotation.



A tractor prop is used and mounted backwards on engine.

should now be added.

Finishing

The choice of finishing methods is left to the builder since each of us has a favorite. My Mirage was finished by first covering the aircraft with silkspan and six coats of nitrate dope. The color scheme was done with acetone based paint. The panel lines and hatches were applied with a technical pen and black ink. After the insignias and labeling were painted on, the entire aircraft was given a final coat of fuelproof, clear paint. The engine was then installed along with the tuned pipe and a Robart fuel aircraft should be balanced according to the Center of Gravity (C.G.) that is shown on the plans. Under no circumstances, should the C.G. be farther back than shown on the plans.

Flying

After making a thorough radio system and retractable landing gear check, the engine should be adjusted so that it is smooth running and reliable.

I would like to stress that, should the engine quit running shortly after take-off, a crash will most likely result! So take whatever time is necessary in order to adjust your engine properly. The Mirage builder should be ever aware of several factors. With its high wing loading, the Mirage will require a rather long take-off run (about 75 to 90 yards) from a paved runway. The pilot who attempts to "force" the Mirage into the air will be flirting with disaster! The best take-off technique is to let the Mirage attain sufficient speed on the runway. With a slight amount of stick back pressure, the Mirage will become airborne. Its in-flight speed will be over 100 mph. The Mirage should be flown fast in order for it to fly well, and the pilot should never take his eyes off of the aircraft. With its delta configuration, and especially when the landing gear is in the retracted position, it is very easy to become disoriented. The first few flights of the Mirage should be spent becoming familiar with the aircraft and its flight characteristics. This should be done at a safe altitude until the pilot feels comfortable with the aircraft. Landings should be made by maintaining ample flying speed all of the way to touchdown. As long as adequate flying speed is maintained, the Mirage can be easily landed even with the engine shut down.

What I have mentioned is not intended to discourage any modeler from building and flying a Mirage. I do hope that everyone who does decide to undertake a Mirage project will find it to be not only an enjoyable endeavor, but a successful one as well. While the Mirage is best suited for the experienced R/C pilot, it does have one distinct advantage over any other R/C aircraft that I have ever flown, it can be flown in very windy conditions --- even winds where the birds are huddling on the ground! □

From RCModeler June 1987