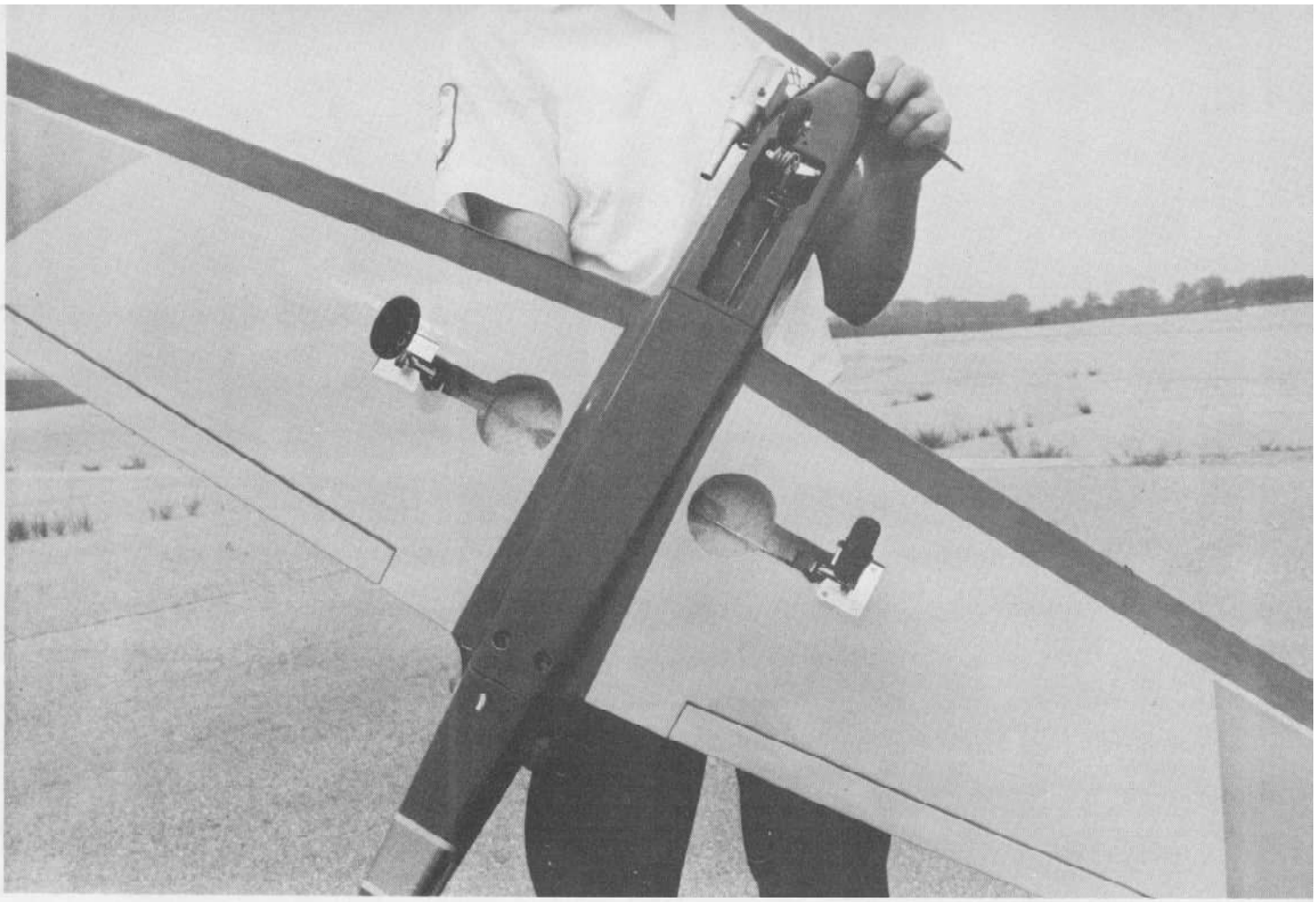

Underview of wing and fuselage showing the Pro-Line retract gear installation. Nothing complex or unusual here, straight forward and very basic.

COMPENSATOR . . . CONTINUED

ever, the extremely fast airfoils, while being impressive from a speed standpoint, appear somewhat jerky in some maneuvers and make it difficult to slow the airplane down for accurate spot landings. The Compensator wing leading edge has a constant radius, which was a design trait of Mr. Kirkland. This feature tends to eliminate tip stall during the landing maneuver and keeps the airplane from falling off on a wing tip during the spin entry.

The Compensator wing is well within FAI regulations and readily permits nice nose high landings. Both of my current Compensators weigh in at 7¾-8 lbs. dry, which seems to be an optimum weight providing a good .60 is used up front. I use an equal taper in both the leading and trailing edges of the Compensator wing, which to date has proved quite successful.

After having flown the "Intruder" for two years and being familiar with the diamond stab and the resultant elevator response, I used this stab configuration on the Compensator. The flight characteristics of the diamond stab are well known, and as Mr. Kirkland once said, "The diamond stab seems to hold the airplane off the ground as long as possible and then a little longer during the landing maneuver."

A great deal of thought and effort was put into the fuselage design of the Compensator. The distribution of lateral area has proven quite important in the execution of all maneuvers, especially the rolls. The advice of Jim Whitley regarding distribution of fuselage area proved helpful. In view of the unusual shapes encountered in measuring lateral area, a polar planimeter was utilized, thus obtaining accurate measurements. This extra attention given to lateral area has proven to be well worth the effort since the rolling maneuvers can be executed with very little rudder necessary.

Construction of any Pattern airplane should be simple yet strong. Simple, to facilitate ease and fast construction, yet strong enough to withstand the varying forces of aerobatics. Reinforcing the construction up to a point makes good sense; however, reinforcing beyond that point only adds unnecessary weight. The basic building techniques used in the Compensator are similar to those found in most of today's Pattern airplanes.

CONSTRUCTION

Wing: Begin by cutting two cores using templates and dimensions as shown on the plans. While the foam cutter is still hot and you are in the mood, you might go ahead and cut the horizontal stabilizer cores and set them aside for future use. Glue trailing edge balsa to wing cores using epoxy glue. Cutouts are now made for retracts, etc. Wing skins are made from 1/16" soft balsa. Soft balsa is very definitely dictated in the area of the leading edge to prevent breaking the skin when rolled around the core. Sand the cores and vacuum to remove loose dust prior to applying glue.

Wing skins are bonded to the cores using Southern R/C Products' "Southern Sorghum." This contact glue is virtually fool proof, easy to handle and provides a good bond between the balsa and foam. Cores are now glued together with epoxy, taking care to insure perfect alignment. Wing construction is completed by installing wing tips, aileron linkages and aileron fill material. Ailerons are tack-glued to wing and sanded to shape. F-2A and dowels are not installed until fuselage is built.

Fuselage: Use templates on the plans to cut out formers, doublers and sides. The sides are assembled complete with doublers, longerons, stiffeners and triangular stock. Be sure to build a right and left side. Formers are built as shown; install blind mounting nuts in F-1 to accommodate motor mount and retract unit of your choice. Glue fuselage sides and formers together, an operation best accomplished using a jig of your choice since an accurately built fuselage is a necessity. Before removing the basic fuselage from the jig, add spruce and balsa cross members and bottom sheeting rearward of the wing. When all glue joints have set, remove from jig and add maple block for wing mounting bolts.

At this point, sand leading edge of wing to receive F-2A. Temporarily fasten F-2A to F-2 using short pieces of dowel; apply glue to F-2A and align wing in fuselage wing saddle. When this glue has hardened, re-

(Continued on next page)