FIREBALL

Designed in the 1940's by the legendary Jim Walker, the Fireball was one of the most popular Ukies of all time. The Half-A RC Fireball takes advantage of two very popular directions RC flying seems to have taken - - - The Old Timer movement and Half-A Pattern. The RC Fireball exploits the best in both of these interests. Those of us who grew up with the Fireball, and others like it, will agree that these models must not be forgotten. Indeed, the Fireball is a thoroughly 'modern' plane with pleasing lines and moments ideally suited for RC flying.

The time is 1944.
The place is a weed covered vacant lot next to a hobby shop in suburban Los Angeles. I, and several of my pals had ridden our bicycles there to witness a well publicized flying demonstration by a man named Jim Walker. In the waiting crowd I recognized all of our local flying personalities. Standing over on the sidewalk, flanked by his admiring followers, was our own "ace-of-aces". He had recently looped a control line model, a performance which elevated him to immediate superiority. (I was certainly not in his league, as I had yet to complete a flight without crashing.)

In a while a large station wagon arrived. The man named Jim Walker began his show. Out of the car came a red Fireball. He easily started the O & R 23 and walked to the center of the vacant lot. Holding the plane at arms length, with a U-Reely in his other hand, he tossed the Fireball away. It flew almost straight out trailing wires unwinding from the handle-reel. Then the plane began to fly around the circle, with the lines gradually getting longer. After about 50 feet of line had been reeled out the Fireball looped several times and was suddenly flying upside down! No one in our club had ever flown upside down, not even our great ace pilot! After an amazing series of stunts, Jim Walker began to reel in the lines, turning ever faster as the circle became smaller. Then mushing the Fireball into a near stall, he reached out and picked the plane out of the sky.

There were other marvels that Jim Walker performed that day, but my mind was still busy re-creating that wonderful Fireball flight. Although I cannot boast of having known Jim Walker personally, I was able to see him fly on later occasions, both control-line and R/C. A whole new generation of modelers has appeared since that time who only know of Jim Walker through the model publications. The Fireball is just one example of the talent and creativity of this man whose achievements were legion and whose dynamic energy seemed to be limitless.

The time is 1975. It is the year that 1/2A R/C pattern models caught on. Modelers have been flying small R/C models for a long time, but these early designs seemed to be stuck in the trainer mold and were, therefore, sport free-flight designs with some radio assist. The new, smaller radios proved to be the catalyst that was needed to trigger the development of this new dimension in R/C modeling. It seemed a fitting tribute to Jim Walker to combine this recent development with a design which caused such a sensation in the early forties. With the help of 3-views and a good memory, the Fireball project was underway.

Those who remember the Fireball, or who may have one in the attic, will discover that the construction of this version is quite unlike the kit version. The kit featured a carved balsa fuselage which one was cautioned to thin out somewhat. This cannot be used in the 1/2A version because light weight is the very key to success of these small models. The construction features a lot of little sticks and very little sheet wood. The goal is to get down to a flying weight of about 22 ounces. This type of construction is more work than the conventional sheet balsa fuselage and foam wings, but the payoff is in the snappy performance that is a unique characteristic of these 1/2A pattern models.

A few other familiar R/C construction practices are abandoned in this model. The wing is permanently attached. It is a mid-wing design with not too much dihedral and no ailerons. This removes it from the trainer category, but it is easy enough to handle once you get used to the incredible speed and turning radius.

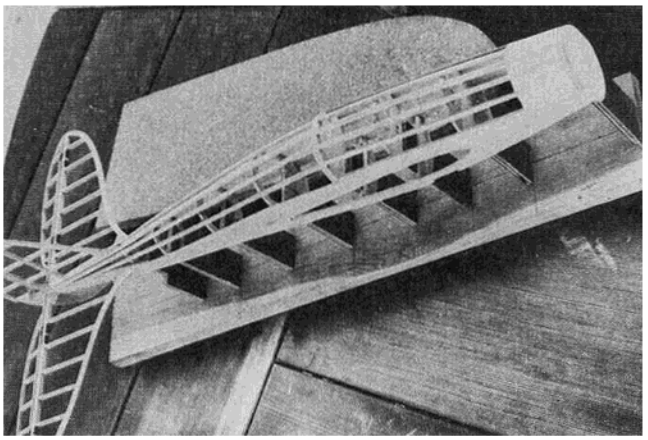
Construction

The laminated outlines are really worth the time and effort. This is a standard way to build small, light models, but should also be considered for other modeling projects. Begin by cutting the forms from plywood, or heavy cardboard, to match the inside curves. Strips from 1/16" sheet are cut 3/8" wide for the wings and 3/16" wide for the tail parts. Soak the strips in hot water for a few minutes. While they are still wet and soggy, coat with Titebond and bend them around the form while taping them in place.

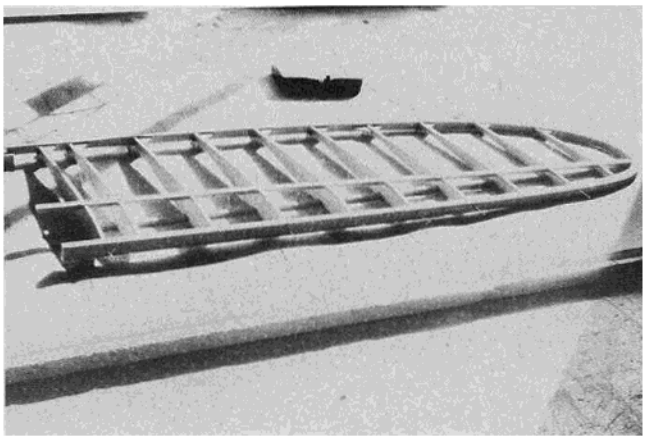
FIREBALL
Designed By: Floyd E. Carter

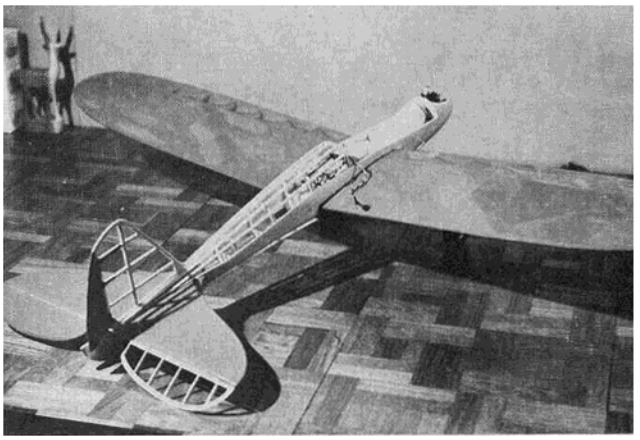
TYPE AIRCRAFT
1/2A Sport & Pattern
WINGSPAN
40 Inches
WING CHORD
6-13/16 Inches
TOTAL WING AREA
418 Square Inches
WING LOCATION
Mid-Wing
AIRFOIL
Symmetrical
WING PLANFORM
Constant Chord (ellip. tips)
DIHEDRAL, EACH TIP
2¼ Inches
O.A. FUSELAGE LENGTH
26¾ Inches
RADIO COMPARTMENT AREA
(L) 3¾" X (W)2" X (H) 1½"
STABILIZER SPAN
14½ Inches
STABILIZER CHORD (incl. elev.)
4¾ Inches (Average)
STABILIZER AREA
44 Square Inches
STAB AIRFOIL SECTION
Flat
STABILIZER LOCATION
Mid-Fuselage
VERTICAL FIN HEIGHT
4½ Inches
VERTICAL FIN WIDTH (incl. rudder)
5 Inches (Average)
REC. ENGINE SIZE
Tee Dee .049/.051
FUEL TANK SIZE
2 Ounce
LANDING GEAR
Conventional
REC. NO. OF CHANNELS
Two
CONTROL FUNCTIONS
Rudder & Elevator
BASIC MATERIALS USED IN CONSTRUCTION
Fuselage ..... Balsa, Spruce & Ply
Wing ..... Balsa and Ply
Empennage ..... Balsa and Spruce
Weight Ready-To-Fly ..... 22 Oz.
Wing Loading ..... 7.6 Oz/Sq. Ft.

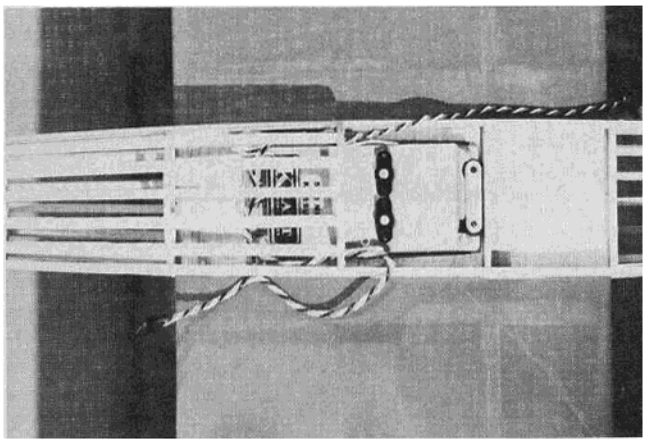
BY FLOYD E. CARTER

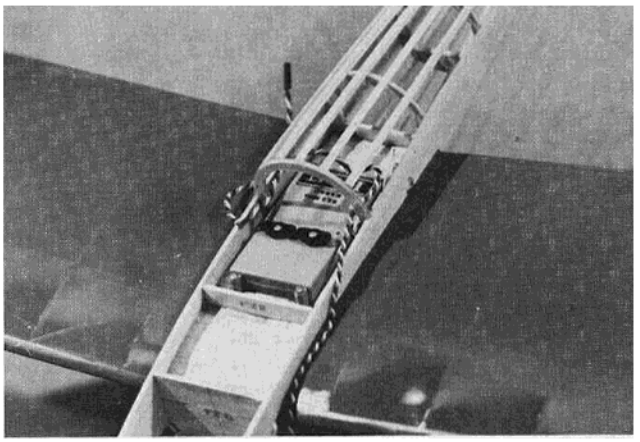


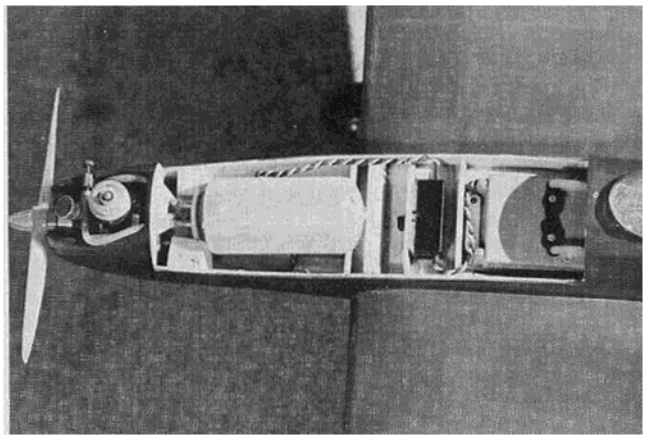
LEFT: A temporary building jig for the fuselage. Note layout lines to assure accuracy. 2ND ROW: (L) Basic wing structure with laminated outline in place. Only bottom spar is pinned to work table. (R) Solarfilm covering for wings and tail surfaces. Fuselage ready for silkspan and dope finish. 3RD ROW: (L) Rear flange mount of Kraft brick fits into grooved hardwood block. Two screws secure the installation. (R) Another view of brick installation. Individual component type may be more crowded. 4TH ROW: (L) The plumbing pressure line from crankshaft to vent line. 225 mah pack fits under 2 ounce tanks. (R) The landing gear installation. Smooth fillets are epoxy glue mixed with micro-balloons.

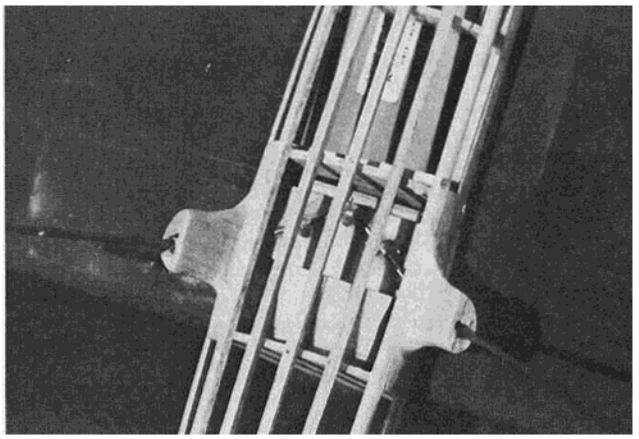


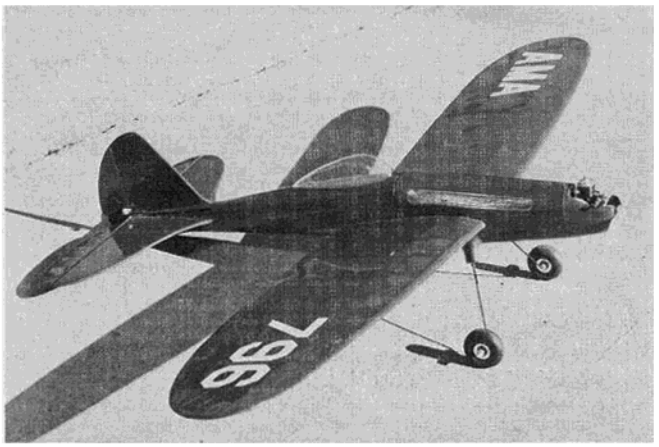


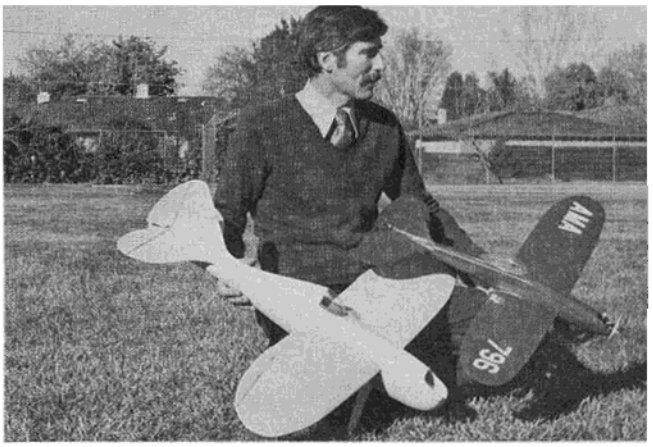


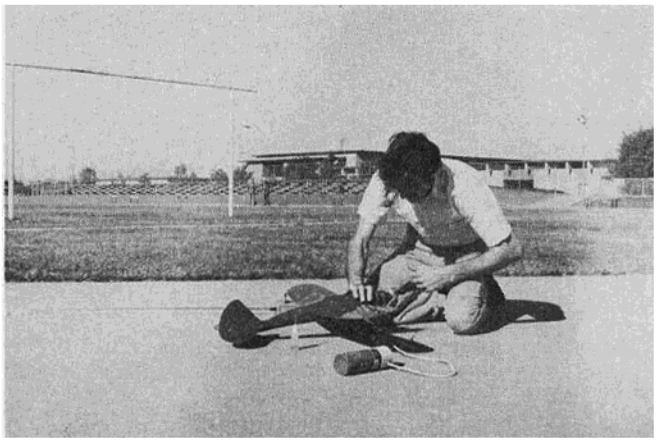


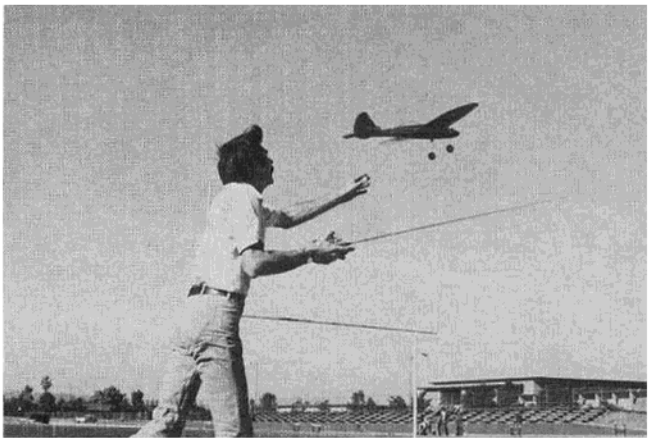












1ST ROW: (L) The familiar Fireball lines are retained in this model, even though it is not an exact copy of the original. (R) The author with the Half-A Fireball and a larger .40 powered version under construction. 2ND ROW: (L) If there were control lines stretched out, this could be a photo of a scene some thirty-five years ago. (R) Floyd Carter demonstrates hand launch technique. Half-A pattern ships are small enough to fly from football fields. And, if you're interested in an idea of its potential, go back to the spec sheet and check that wing loading!

After they are completely dry, they are ready for sanding.

The wing should be built first, as the finished wing is used for the fuselage and tail alignment. Pin the bottom spar to the plan and install the ribs. Block each rib trailing edge the correct amount with the spacers cut to the lengths shown. Next, add the top spar and the laminated wing outline. Bend the top and bottom spars together at the tip to meet the outline and install the vertical grain shear webbing between the spars. Join the wing halves with the plywood center brace.

If you are using a 2 channel brick radio, the rear mounting screws will not be accessible. Make the radio mount so that the rear flange is wedged in place. Two screws at the front flange of the radio will hold it in place.

The fuselage is started by making the 3/32" sides and all of the formers. Lightly rubber cement the formers to a fuselage jig (see photos), taking care that everything is aligned, both on the top and sides. Add the sides and the completed tail parts. Temporary strips should be used across some fuselage formers for strength until the wing is attached. Add as many stringers as possible while the fuselage is on the jig. To avoid warps, use the eyeball method to locate the stringers and glue them to the formers without excessive bending to attempt perfect spacing. The remaining bottom stringers and landing gear parts are installed after removing the assembly from the jig. Add the landing gear fairings (odd, aren't they?) and the blocks for carving the cowling.

The prototype model was covered with Pactra Solarfilm (#6002, Dark Red) on the wings and tail surfaces with hinges of the same material. The fuselage was covered with tissue and Aero Gloss. Fokker Red is a perfect match for the Solarfilm Dark Red. There are two good reasons for a doped fuselage. First, the paint seals the wood around the engine to protect it from fuel drippings. Second, I never could master the technique of film covering in tight places.

This is one model where a specific engine must be used. The Cox TD .049 develops unmatched power for its weight. Any other engine would have to be larger and heavier. The TD should be run on pressure. It helps to epoxy some aluminum tubing on the pressure fitting, as it is normally too short. The pressure line connects to one of the vents in the 2 oz. tank. The second vent pipe in the tank is used only for filling and must be plugged for running.

Flying

For anyone not accustomed to 1/2A R/C, it is well to consider that first flight, because things happened rather quickly. With the TD peaked, hand launch smoothly straight ahead. Concentrate on keeping the wings level while grabbing some altitude. With safe distance under the wheels, begin to try out the controls. Now you seem to be committed to fly until the engine runs out of fuel (and that alone seems to panic a lot of R/C folks). You will also get a lot of practice with dead stick landings, so keep your spot in mind and don't stray too far from it.

The big pattern meets will continue to see big machines for some time. For just pure fun flying, however, 1/2A R/C pattern is a perfect alternative with a minimum investment of time and expense. □