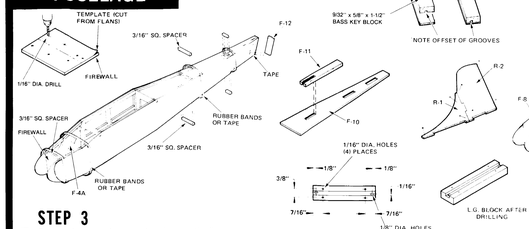
FUSELAGE

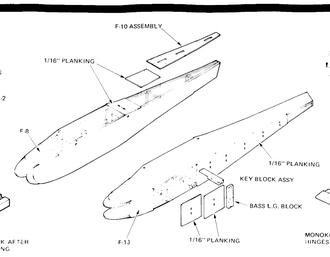


STEP 3

- ☐ Draw engine mounting screw locations on the firewall template on plan. Cut the template from the plans and glue it on firewall. Drill 1/16" dia. holes in firewall as required.
- ☐ Measure from plans and cut all **3/16" SQ.** horizontal spacers. Glue **F-4A, F-4B, 3/16" SQ. SPACERS** and **FIREWALL** to one side of fuselage. Apply glue where required and pull the sides together. Hold with tape or rubber bands.
- ☐ Use this same procedure for the rear part of fuselage.

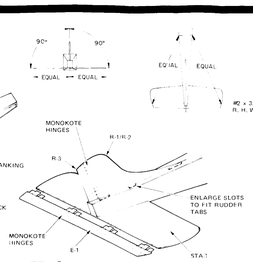
STEP 4

- ☐ Pin **R-1** to flat work surface. Glue **R-2** to it and pin.
- ☐ Glue **F-11** to bottom of **F-10** as shown.
- ☐ Epoxy **9/32" x 5/8" x 1 1/2" KEY BLOCKS** to **1/16" x 5/8" x 3"(PLY) BACKING PLATES.**
- ☐ Drill holes thru **MAIN L.G. BLOCK** as shown in illustrations.



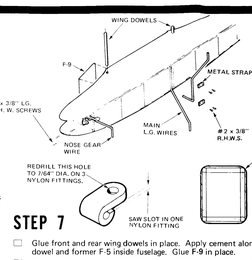
STEP 5

- ☐ Epoxy **L.G. KEY BLOCKS** and **MAIN L.G. BLOCK** in place in fuselage. Hold sides together with tape or rubber bands.
- ☐ While this is drying, glue **F-8, F-10 ASSEMBLY** and **F-13** in place.
- ☐ Finish planking fuselage with **1/16" SHEETING.** Arrows show direction of grain.



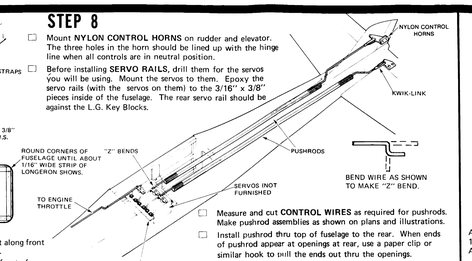
STEP 6

- ☐ Make Monokote hinges for rudder and elevator. See instructions at right end of this instruction strip.
- ☐ Hinge **R-3** to **R-1/R-2 ASSEMBLY.** Hinge **E-1** to **STAB.**
- ☐ Enlarge F-10/F-11 slots for snug fit of rudder tabs. Glue rudder assembly and stab assembly in place. Be sure of alignment of all tail surfaces as shown.



STEP 7

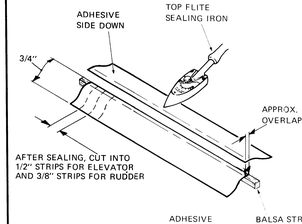
- ☐ Glue front and rear wing dowels in place. Apply cement along front dowel and former F-5 inside fuselage. Glue **F-9** in place.
- ☐ Round off corners of fuselage as shown. Send shape of front of fuselage as shown on top view of plans.
- ☐ Redrill three **NYLON FITTINGS** as shown in illustration and slot only one. Snap slotted fitting over vertical leg of nose gear wire.
- ☐ Install **NOSE GEAR WIRE** with three **NYLON FITTINGS** and three **#2 x 3/8" ROUND HEAD WOOD SCREWS.**
- ☐ Insert **MAIN L.G. WIRES** in holes in L.G. block. Retain in place with two **METAL STRAPS** and four **#2 x 3/8" ROUND HEAD WOOD SCREWS.**



STEP 8

- ☐ Mount **NYLON CONTROL HORNS** on rudder and elevator. The three holes in the horn should be lined up with the hinge line when all controls are in neutral position.
- ☐ Before installing **SERVO RAILS,** drill them for the servos you will be using. Mount the servos to them. Epoxy the servo rails (with the servos on them) to the 3/16" x 3/8" pieces inside of the fuselage. The rear servo rail should be against the L.G. Key Blocks.
- ☐ Measure and cut **CONTROL WIRES** as required for pushrods. Make pushrod assemblies as shown on plans and illustrations.
- ☐ Install pushrod thru top of fuselage to the rear. When ends of pushrod appear at openings at rear, use a paper clip or similar hook to pull the ends out thru the openings.
- ☐ Remove the servo arms from the servos, install them on the pushrod "Z" bends and Re-install them on the servos. Screw Quik-links on rear control wires and install them on the horns after they have been adjusted for the control surfaces to be in neutral position.
- ☐ Install the battery and receiver as recommended by your radio manufacturer. Adjust their position to obtain correct **C.G.** position. See plans.

MAKING MONOKOTE HINGES



INSTRUCTION AND WARNING SHEET

HOW TO USE PROPELLERS SAFELY & PROPERLY

The failure to read and follow instructions, abuse or misuse, may result in serious personal injury!

1. For correct propeller size and pitch, follow advice of engine manufacturer or prop chart available free from dealer of this kit.
2. Install prop with Curved Side facing you. Securely tighten propeller nut, using correct wrench for this purpose.
3. When starting engine, keep fingertips of propeller (20 feet or more) and out of path of rotating prop.
4. Keep hands away from prop as much as possible; use "chicken stick" device or electric starter; follow instructions supplied with device.
5. Keep face and body away from path of prop as you start and run engine.
6. Make all engine adjustments from behind rotating prop.
7. To stop engine, cut off fuel supply or follow engine manufacturer's directions. DON'T use hands, fingers or any part of body. DON'T throw propeller into a running engine.
8. Discard any props with nicks, scratches, splits or cracks or any sign of wear or damage. Never repair, alter, shave or bend a prop! Normal engine vibration can loosen a prop; inspect and retighten if necessary!

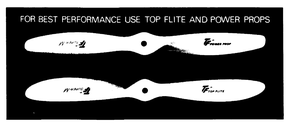
ADDITIONAL PRECAUTIONS

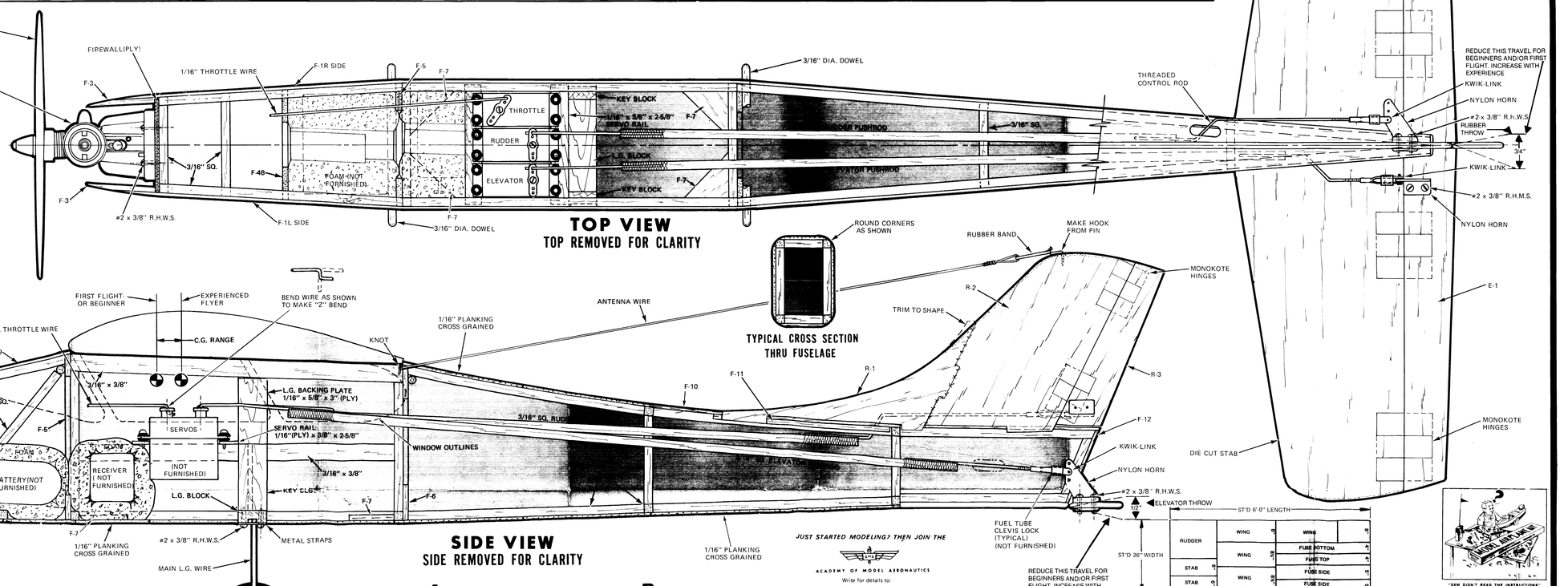
A. Use safety glasses when starting or running engine.
B. Don't run engine in area of loose gravel or sand; prop may throw such material in face or eyes.
C. **KEEP AWAY FROM PROP.** Loose clothing — shirt sleeves — ties — scarfs or loose objects (pencils, screw drivers) that may fall out of shirt or jacket pockets into prop.
D. Make certain glow plug clip or connector is secure so that it will not pop off or otherwise get into running prop.
E. If a spinner is used, be certain its edges do not touch the prop blades.

ADDITIONAL SPECIAL WARNINGS AND INSTRUCTIONS FOR NYLON PROPELLERS

Nylon props are affected by amount of moisture in the wood. Some are brittle when first used if too dry. Since amount of moisture may vary greatly from time of manufacture, do as follows:

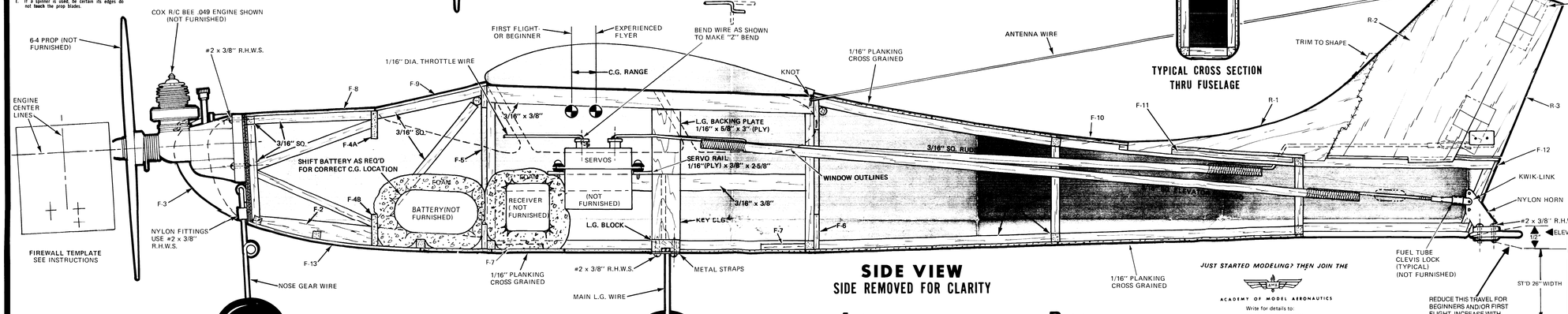
1. Boil each propeller in water for **30 minutes** before first use. Water should cover the entire prop. Do not cover pot. Let prop stay in water until cool.
2. You can add dye (Rit, etc.) in the water to identify boiled props as against unboiled.
3. After use of prop, remove from engine, wrap in moist cloth, paper towel or rag and store in a water tight plastic bag.





TOP VIEW
TOP REMOVED FOR CLARITY

TYPICAL CROSS SECTION THRU FUSELAGE



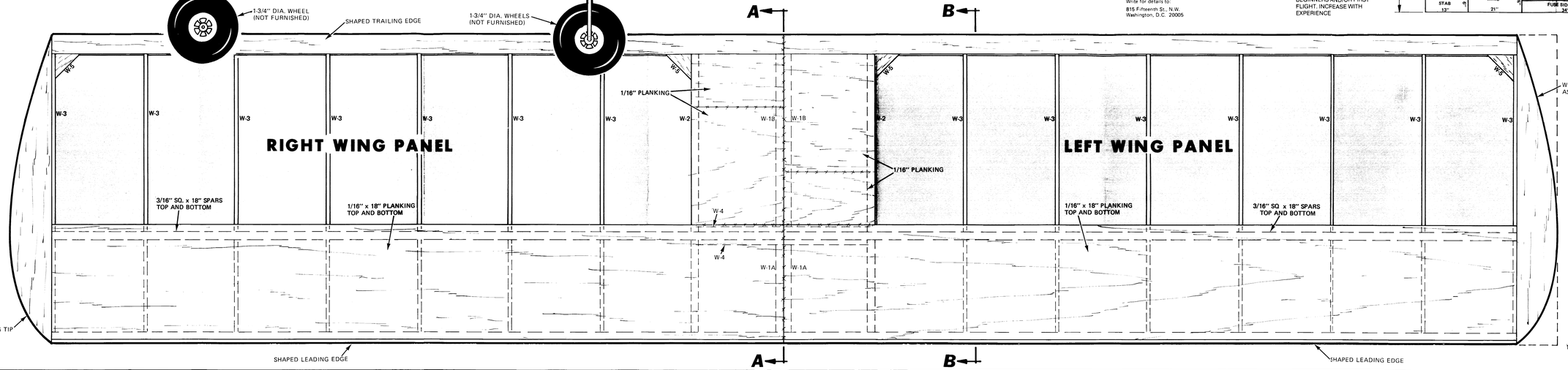
SIDE VIEW
SIDE REMOVED FOR CLARITY

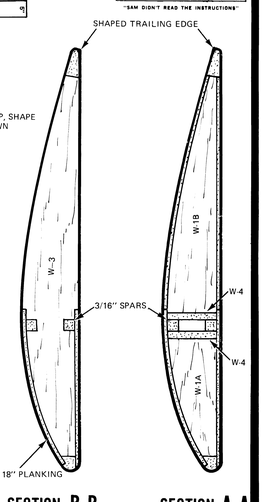
FIREWALL TEMPLATE SEE INSTRUCTIONS

JUST STARTED MODELING? THEN JOIN THE

ACADEMY OF MODEL AERONAUTICS

Write for details to:
815 Fifteenth St., N.W.
Washington, D.C. 20005





WARNING!!

A radio-controlled model is not a "TOY". Care and caution must be taken in properly building the model as well as in the installation and use of the radio controlled device. It is important to follow all directions as to construction of this kit as well as installation and use of the engine, propellers and radio gear. The advice and assistance of a well experienced builder and pilot is highly recommended. Don't take chances. Improper building, operation or flying of model could result in serious bodily injury to others, your self, or property damage.

IMPORTANT NOTE TO BUILDER

Every model built from a kit is different, reflecting the level of skill as well as the favored building techniques of the modeler. It therefore each model is essentially the individual creation of that builder.

Changes and variations take place in building so that while Top Flite supplies most essential building materials, the end product is the creation of the builder.

Therefore, Top Flite assumes no responsibility for the performance of the model, nor does Top Flite assume any responsibility of any nature whatsoever for the loss of, or property damage resulting from the operation of this model when it is completed.

USE COMMON SENSE

When you have completed this model, you will have invested considerable time, money and skill. Protect this investment by:

1. Re-checking all critical building points (center of gravity, hinging of control surfaces, strength of stress areas, etc.).
2. Correctly installing the radio gear.
3. Test and re-test the radio, all moving surfaces, landing gear (if retracts), condition of batteries, etc., **BEFORE EACH FLIGHT!**
4. OBSERVE ACADEMY OF MODEL AERONAUTICS SAFETY CODE, particularly those rules governing RADIO CONTROLLED FLIGHT. DO NOT FLY WITHOUT BEING FULLY INSURED.

INTRODUCTION

Welcome to the wonderful world of radio-controlled modeling! Your purchase, careful building and correct equipping of this model will give you an easy to fly R/C model with a character and identity setting it apart from the average R/C model. What's more, you will find this kit quite easy and quick to assemble if you will follow the instructions carefully and devote the required time, effort and patience. The results will be a model you will be proud of... one with EYE appeal as well as FLY appeal!

With the purchase of this kit, you have started a project we hope will satisfy your natural creative desires and put you on the path of mastering the art of radio controlled flight.

HOW TO USE THE INSTRUCTIONS

1. These instructions have been arranged so as to enable quick assembly of your model. First you should read through the entire instructions to familiarize yourself with its contents and layout. Examine the plans with each step and identify the wood or parts involved.

2. Begin by following each step, one at a time and as it is completed, place a check mark in the blocks for that step. It is not advisable to skip around unless you are an experienced modeler.

3. As you begin each step, read the instructions, locate the parts involved, double check these parts with the plans and proceed.

REMOVING DIE CUT PARTS

Some die cut parts may need a little help in removing them from the sheet. This can be done by lightly sanding the back of the sheet. Some plywood parts may have "tabs" which can be cut with the help of an X-acto knife or cutting pliers. Remove only those parts necessary for the completion of the step you are working on.

WORKING WITH PARTS

Before gluing any parts together, make certain they fit properly. Trim or sand them as necessary. There are some machined parts in your kit which are not marked with letters or numbers such as stabilizers, leading edge, trailing edge, etc. These parts can be identified by checking them against the plans. If you wish, use a ball point pen to mark their identity.

GLUES

There are many fine glues available for model construction. The aliphatic resin glues (Wilhold, Titebond or Se-Cure) can be used for both balsa-to-balsa joints as well as hardwood to hardwood joints. Epoxies work well for high stress joints. Whatever type of glue you use, remember that excess glue is no substitute for a well fitting joint. Use a minimum of glue at all times, wiping off excess glue that squeezes out of a joint before it hardens. Once glue sets it is not only difficult to remove or sand, but may also spoil your covering work on the plane.

SANDING AND PINNING

When sanding, use a balsa wood block approximately 1" x 3" x 6" with sandpaper around the block and fastened on the top side. Sand only in the direction of the grain of the wood. When holding pieces together with pins, allow enough wood between the pin and the edge of the piece to minimize the chance of splitting the wood. Keep in mind that pins hold best when they are pushed into the parts at an angle.

ITEMS NEEDED TO BUILD MODEL

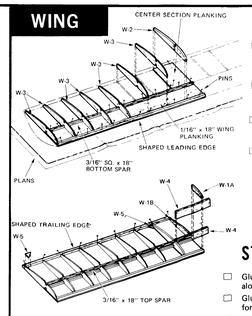
Glues - (If not Titebond, Wilhold, Se-Cure—Hobbypoxy, or similar resin glue
—1 pkg. (4 oz.) "5 Minute" epoxy.
Pins: Sewing or "T" type, approximately 100
Wetpaper or Super-MonoKote backing material
Sandpaper: —180, 220 and 400 grit
Tools: —X-acto type knife and saw set
—Single edge razor blade
—Pliers, needle nose with 1/16" and 1/8" bits
—Small regular blade screwdriver
—Heavy black thread
—Pliers for making "Z" bends
—Small "C" clamps, metal or plastic
Covering: —For covering your model we strongly recommend Super-MonoKote. Super-MonoKote will give you the easiest, fastest, lightest covering job possible, is durable and yet very attractive. We have included an instruction sheet in this kit on how to apply Super-MonoKote and what tools you will need.

ITEMS NEEDED TO FLY MODEL

As your model is being completed you will need the following items to prepare it for R/C flight.

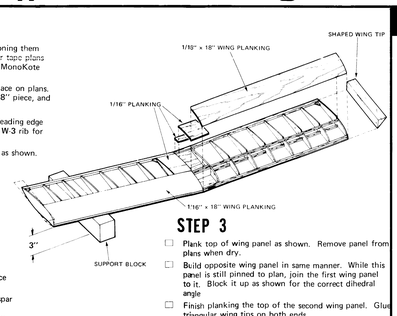
Radio control unit:	2 or 3 channel
Engine:	.049 to .09 size
Wheels:	(1) 1-3/4" dia. (1 for nose,2 for main)
Propeller:	6-4 Top Flite Prop, or as recommended by engine manufacturer. Also prop wrench.
Prop Wrench:	"chicken stick" or electric starter and its battery.
Fuel:	As recommended by engine manufacturer. Also fuel pump or fuel bulb.
Starting battery:	1-1/2 Volt with glow plug clip.

WING



STEP 1

- ☐ Folds in the plans can be flattened by ironing them with a hot MonoKote sealing iron. Pin or tape plans to a flat work surface. Cover them with MonoKote backing sheet or waxed paper.
- ☐ Pin **1/16" x 18" WING PLANKING** in place on plans. Cut planking for center section, glue to 18" piece, and pin.
- ☐ Glue **3/16" SQ.** bottom spar and shaped leading edge in place on 18" balsa sheet. Use a loose **W-3** rib for spacing.
- ☐ Glue seven **W-3** and one **W-2** ribs in place as shown.



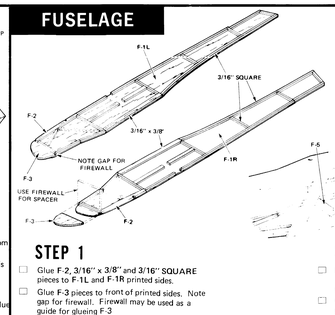
STEP 2

- ☐ Glue and pin **SHAPED TRAILING EDGE** in place along with two **W-5** gussets.
- ☐ Glue **3/16" SQ. TOP SPAR** in place. Trim top spar for dihedral angle.
- ☐ Glue two **W-4** braces, one **W-1A**, and one **W-1B** ribs in place.

STEP 3

- ☐ Plank top of wing panel as shown. Remove panel from plans when dry.
- ☐ Build opposite wing panel in same manner. While this panel is still pinned to plan, join the first wing panel to it. Block it up as shown for the correct dihedral angle.
- ☐ Finish planking the top of the second wing panel. Glue triangular wing tips on both ends.
- ☐ Remove wing from plans. Cut and sand wing tips to shape. Round off bottom of leading edge. Sand wing.

FUSELAGE



STEP 1

- ☐ Glue **F-2, 3/16" x 3/8"** and **3/16" SQUARE** pieces to **F-1L** and **F-1R** printed sides.
- ☐ Glue **F-3** pieces to front of printed sides. Note gap for firewall. Firewall may be used as a guide for glueing F-3

STEP 2

- ☐ Pin down **F-1R ASSEMBLY** to a flat surface. Glue **F-5** and **F-6** in place on **F-1R** along with two **F-7** gussets.
- ☐ Glue **F-1L** to **F-5** and **F-6** along with two more **F-7** gussets.
- ☐ Check alignment in each step with a triangle, to assure a true structure.

NOTE:

INSTRUCTIONS CONTINUED AT TOP OF PLANS

WINDSHIELD OUTLINE PATTERN

TOP FLITE

SCHOOLMASTER II

ORIG. DESIGN BY	KEN WILLARD
REVISED BY	DAN KANE
KIT ENG'D BY	SID AXELROD
PLANS/INSTRUCT.	CARL LINDEE
WING SPAN	38"
WING AREA	285 SQ. IN.
ENGINE SIZE	.049 - .09 R/C
RADIO	2 or 3 CHANNEL
FLYING WEIGHT	23 to 27 OZ'S

Provided to www.Outerzone.co.uk

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