SEA FURY MK11

GOLD EDITION™

MADE IN USA

Wingspan: 66 in [1,675mm]
Wing Area: 842 sq in [54.3 sq dm]
Weight: 10 - 12 lbs [4,540g - 5,440g]
Wing Loading: 27 - 30 oz/sq ft
[82 - 92 g/sq dm]
Length: 58 in [1,475mm]
Scale: 1:7

WARRANTY..... Top Flite Models guarantees this kit to be free of defects in both material and workmanship at the date of purchase. This warranty does not cover any component parts damaged by use or modification. In no case shall Top Flite's liability exceed the original cost of the purchased kit. Further, Top Flite reserves the right to change or modify this warranty without notice. In that Top Flite has no control over the final assembly or material used for final assembly, no liability shall be assumed nor accepted for any damage resulting from the use by the user of the final user-assembled product. By the act of using the user-assembled product the user accepts all resulting liability. **If the buyer is not prepared to accept the liability associated with the use of this product, the buyer is advised to immediately return this kit in new and unused condition to the place of purchase.**

Top Flite Models P.O. Box 788 Urbana, Il 61803 **Technical Assistance Call (217)398-8970 productsupport@top-flite.com**

READ THROUGH THIS INSTRUCTION BOOK FIRST. IT CONTAINS IMPORTANT INSTRUCTIONS AND WARNINGS CONCERNING THE ASSEMBLY AND USE OF THIS MODEL.

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INTRODUCTION

Congratulations and thank you for purchasing the **Top Flite *Gold Edition* Hawker Sea Fury**. The Sea Fury is the type of plane that makes an ideal scale model no matter what the size (we can't take all the credit for a great-flying model!). Because of its large wing area and long tail moment, you'll find that the Sea Fury is stable and predictable in the air. Additionally, this Top Flite *Gold* kit incorporates airfoils specially designed for Top Flite's warbirds (S8036 at the root and S8037 at the tip). These airfoils provide slower stall speeds and gentle stall characteristics making Gold Edition kits among the friendliest flying warbirds around!

When it comes to construction, the high number of die-cut parts minimizes carving and fitting, while complete instructions guide you through every detail. Without adding any additional scale details you'll end up with a model that very much represents a Hawker Sea Fury. With a little research and some scale documentation you can go "all-out" and make your Sea Fury a show-winning model.

PROTECT YOUR MODEL, YOURSELF & OTHERS FOLLOW THESE IMPORTANT SAFETY PRECAUTIONS

1. Your Sea Fury should not be considered as a toy, but rather a sophisticated, working model that functions very much like a full-size airplane. Because of its performance capabilities, the Sea Fury, if not assembled and operated correctly, could possibly cause injury to yourself or spectators and damage to property.

2. You must assemble the model **according to the instructions**. Do not alter or modify the model, as doing so may result in an unsafe or unflyable model. In a few cases the instructions may differ slightly from the photos. In those instances the written instructions should be considered as correct.

3. You must take time to **build straight, true** and **strong**.

4. You must use an R/C radio system that is in first-class condition, and a correctly sized engine and components (fuel tank, wheels, etc.) throughout the building process.

5. You must correctly install all R/C and other components so that the model operates properly on the ground and in the air.

6. You must check the operation of the model before **every** flight to insure that all equipment is operating and that the model has remained structurally sound. Be sure to check clevises or other connectors often and replace them if they show any signs of wear or fatigue.

7. If you are not already an experienced R/C pilot, you should fly the model only with the help of a competent, experienced R/C pilot.

8. While this kit has been flight tested to exceed normal use, if the plane will be used for extremely high stress flying, such as racing, the modeler is responsible for taking steps to reinforce the high stress points.

NOTE: We, as the kit manufacturer, provide you with a top quality kit and great instructions, but ultimately the quality and flyability of your finished model depends on how you build it; therefore, we cannot in any way guarantee the performance of your completed model, and no representations are expressed or implied as to the performance or safety of your completed model.

Remember: Take your time and follow the instructions to end up with a well-built model that is straight and true.

Before starting to build, compare the parts in this kit with the Parts List and the die drawings, and note any missing parts. Also inspect all parts to make sure they are of acceptable quality. If any parts are missing, broken or defective, or if you have any questions about building or flying this airplane, please call us at (217) 398-8970, or e-mail us at productsupport@greatplanes.com. If you are contacting us for replacement parts, please be sure to provide the full kit name (Top Flite Gold Edition .60 Sea Fury) and the part numbers as listed in the Parts List.

You can also check our web site at www.greatplanes.com for the latest updates.

If you have not flown a scale model before, we recommend that you get the assistance of an experienced pilot in your R/C club for your first flights. If you're not a member of a club, your local hobby shop has information about clubs in your area whose membership includes experienced pilots.

In addition to joining an R/C club, we strongly recommend you join the AMA (Academy of Model Aeronautics). AMA membership is required to fly at AMA sanctioned clubs. There are over 2,500 AMA chartered clubs across the country. Among other benefits, the AMA provides insurance to its members who fly at sanctioned sites and events. Additionally, training programs and instructors are available at AMA club sites to help you get started the right way. Contact the AMA at the address or toll-free phone number below:

Academy of Model Aeronautics
5151 East Memorial Drive
Muncie, IN 47302-9252
Tele. (800) 435-9262
Fax (765) 741-0057
Or via the Internet at: http://www.modelaircraft.org

DECISIONS YOU MUST MAKE

This is a list of items required to finish the Sea Fury that must be purchased separately and require a bit of decision making ahead of time. Order numbers (in parentheses) are provided for your convenience.

ENGINE RECOMMENDATIONS

The official engine size recommendation range for the Sea Fury is .61 to .91 cu. in. [10.0 to 15.0cc] two-stroke or .91 to 1.2 cu. in. [10.0 to 19.8cc] four-stroke. Our first Sea Fury prototype was flown with an O.S.® FS-.91 Surpass™ II (OSMG0896) which was more than enough power. Our second prototype (and the model featured in this instruction manual and on the kit box cover–weighing-in at eleven pounds) was flown with an O.S. .61 FX (OSMG0561). Please take this advice: The Sea Fury does **not** need to be overpowered. Even "all-up" with flaps, retracts, cockpit kit and pilot, the .61-powered model flew best at about half to three-quarters throttle and had plenty of reserve power for scale maneuvers such as loops, chandelles and steep climb-outs. If you already happen to have a larger engine, it could be used in this model (as long as it is within the size recommendation). But, if you are still deciding which engine to purchase, a strong .61 two-stroke or a .91 four-stroke is highly recommended. Flying the Sea Fury with a 1.20 may be within the size recommendation, but an engine of this size does approach "over-kill," so prudent throttle management must be exercised. Remember, this is a scale model that is intended to fly in a scale-like manner.

If using a .61 to .75 two-stroke engine, the Top Flite in-cowl Warbird muffler (TOPQ7915) is recommended because it may be fully concealed inside the cowl. The correct header is also required to connect the

(continued on page 4)

muffler to the engine. For the O.S. .61 FX or SF order TOPQ7920. For the Super Tigre® .61 to .75 G-series (muffler bolts go through the engine and screw into the muffler) order TOPQ7926. For the Super Tigre .61 to .75 K-series (muffler bolts go through the muffler and screw into the engine) order TOPQ7925. Additionally, a long silicone tube will be required to connect the Top Flite in-cowl muffler to the header. Aerotrend 3/4" [19.1mm] inside diameter silicone tubing was used on this model (AERG2220).
Note: The Top Flite in-cowl muffler is **not** recommended for engines over .75 cu in.

Refer to the engine manufacturer's recommendations for selecting the correct propellers.

FLAPS

The Sea Fury may be built either with or without flaps. Flaps are not necessary for an enjoyable flying experience, but they do add greatly to scale realism. Landing with flaps is a blast (and can be safer) because the model is able to fly at reduced speeds. Full instructions are included for building the Sea Fury with flaps, but a little extra craftsmanship and skill (not to mention a little extra time) will be required.

These additional items are required to build the Sea Fury with flaps:

(2) Standard servos

(1) Y-connector (HCAM2701– Futaba®)

(1) 6" [150mm] Servo extension (connected to receiver for field setup (HCAM2000 for Futaba)

(10) Small Pivot Point Hinges
(GPMQ4001, pkg. of 15)

3/32" [2.4mm] brass tube
(for drilling holes for hinges)

LANDING GEAR OPTIONS

The Sea Fury may be built with either fixed or retractable landing gear. The pre bent fixed landing gear wires are included with this kit, so the only additional item required to build the Sea Fury with fixed gear is 4" [100mm] wheels. If installing retracts, there are two recommended options: The kit may be built to accommodate Robart #605 HD retracts with 3/6" [4.8mm] wire struts (ROBQ0005) or Century Jet Models #32425 Top Flite Sea Fury system with scale struts (CJMQ4150). Instructions and are provided for installation of either gear (see page 18 for additional, **important** information on selecting retracts).

If installing the Century Jet Models #3235 Top Flite System with 1/2" [13mm] diameter struts (CJMQ4100) or any other system, the landing gear rail spacing and/or position may require modification to accommodate the gear.

Both Century Jet systems include all required components including retracts, struts, air lines, fittings, air control valve and air tank (some modelers prefer to replace CJM's air filler valve with Robart's air filler valve). Whichever retract system is installed, an additional servo will be required to operate the air control valve.

These items are required if installing Century Jet Models retractable landing gear:

#32425 Top Flite Sea Fury system with scale struts (CJMQ4100)
-or-
#32325 Top Flite Sea Fury system with 1/2" struts (CJMQ32325)
-and-
Air pump (may use Robart air pump)
4" [102mm] Main wheels (ROBQ1518)
Servo to operate air control valve
Wheel cover mounts
(8) #6 x 1/2" mounting screws
(GPMQ3160, pkg. of 8)
JB Weld epoxy
3/4 oz. glass cloth to reinforce the wing sheeting inside the wheel wells (HCAR5000)
Optional: Robart air filler valve (ROBQ2368)

These items are required if installing Robart retractable landing gear:

Robart #605HD 90-degree retracts (3/16" [4.8mm] wire struts) (ROBQ0005)
Robart #188 Air control kit (ROBQ2388)
3/16" x 2" slip-on axles (GPMQ4278)
(2) Robart #190 Quick connectors (ROBQ2395, pkg. of 2)
4" [102mm] Main wheels (ROBQ1518)
Robart #164G Hand Pump with Gauge (ROBQ2363)
Servo to operate air control valve
3/4 oz. glass cloth to reinforce the wing sheeting inside the wheel wells (HCAR5000)

SPINNER

The Sea Fury requires a 4" [102mm] spinner. A P-51-shape spinner looks better on this model than a regular pointed sport spinner. Two C.B. Associates, Inc. #5105 P-51 spinners (CBAQ5520) were used on this model. One for static display (*see* page 55) and one for flying. These spinners include the correct adapter for the O.S. .61, but another adapter may be required if using a different engine.

COCKPIT AND PILOT

Your Sea Fury won't be complete unless a Top Flite Sea Fury Cockpit Kit (TOPQ8412) and Top Flite 1/7 scale WW II Full Body Pilot (TOPQ9000) are installed. The cockpit kit includes the floor, side panels, instrument panel, seat, headrest and accessories. It may be installed after the fuselage is completed, but is easier to fit during construction. The Top Flite pilot is the correct size for this model and fits perfectly in the cockpit.

TRIM SCHEME

The trim scheme on the model on the kit box was selected from a photo found on the Internet. It's a trim scheme of a racing plane, though it has a military appearance. To duplicate the trim scheme with MonoKote®, two 6' rolls of dove gray (TOPQ0211) and one 6' roll of insignia blue (TOPQ0207) are required. Additionally, a few feet of black and white MonoKote are required for the invasion stripes, and Top Flite LustreKote® white primer (TOPR7801), dove gray (TOPR7211), insignia blue (TOPR7207) and crystal clear (TOPR7200) are required for painting (*see* FINISHING beginning on page 56 for full details on painting and covering).

SCALE COMPETITION

The outline of the Top Flite *Gold Edition* Sea Fury was derived from three-view drawings, photos and highly detailed plastic model kits. Some areas of the outline have been slightly changed to improve flight characteristics. Notably, the area of the "tail feathers" has been slightly increased to improve directional stability and control.

The scale of this model is 1:7 (or 1:7.07 to be more precise) which was derived by averaging the scale wingspan and the scale length.

If you plan to enter the Sea Fury in scale competition (it's lots of fun, and the runways are usually paved!), this kit may be entered in Fun Scale, Sportsman Scale and Expert Scale classes in AMA competition. All classes have the same flight requirements in which you must perform ten maneuvers, five of which are mandatory. The other five are up to you–"easy" stuff like a slow, low inspection pass with flaps extended, or maybe a touch-and-go. If you have never competed in a scale contest, you could start out in Fun Scale. In Fun Scale, the only documentation required is any proof that a full-size aircraft of this type, in the paint/markings scheme on your model, did exist. A single photo, a kit box cover from a plastic model, or even a painting is sufficient proof! If you're interested, contact the AMA for a rule book that will tell you everything you need to know. You can find a contest schedule in the back of the AMA magazine (Model Aviation).

One last note for those who are interested in scale competition; Strive to build this model to reflect your documentation. Whatever lines and features appear on the full size plane should also appear on the model.

Three-view drawings and photo packs of full size Sea Furies are available from:

Scale Model Research
3114 Yukon Ave, Costa Mesa, CA 92626
(714) 979-8058
Fax: (714) 979-7279

ADDITIONAL ITEMS REQUIRED

Hardware and Accessories

In addition to the items listed in the **"Decisions You Must Make"** section, following is the list of hardware and accessories required to finish the Sea Fury. Order numbers are provided in parentheses.

- ❏ Four to six-channel radio with five to eight servos
- ❏ (1) Y-connector for ailerons (HCAM2500 – Futaba)
- ❏ (3) 6" [150mm] Servo extension cords (ailerons - 2, receiver for aileron - 1 (HCAM2701– Futaba)
- ❏ Switch/charging jack mount kit (GPMM1000)
- ❏ 12 oz. Fuel tank (GPMQ4105)
- ❏ Fuel line (3', GPMQ4131)
- ❏ Fuel filler valve for glow fuel (GPMQ4160)
- ❏ 1" [25mm] Tail wheel (GPMQ4241)
- ❏ R/C Foam padding (1/4" [6mm], HCAQ1000, or 1/2" [13mm], HCAQ1050)

Adhesives and Building Supplies

In addition to common modeling tools (screw drivers, hobby knives, drill, etc.), this is the "short list" of the most important items required to build the Sea Fury. *We recommend* ***Great Planes Pro***™ *CA and Epoxy glue.* **Note:** Additional CA may be required, but the quantity listed below will get you started.

- ❏ 2 oz. Thin Pro CA (GPMR6003)
- ❏ 2 oz. Medium Pro CA+ (GPMR6009)
- ❏ 30-minute epoxy (GPMR6047)
- ❏ Pro™ Wood Glue (GPMR6161)
- ❏ CA Applicator Tips (HCAR3780)
- ❏ CA accelerator (GPMR6035)
- ❏ Lightweight, sandable balsa filler (NHPR2211)
- ❏ Supply of #11 blades (HCAR0211)
- ❏ Single-edge razor blades (HCAR0212)
- ❏ Medium T-pins (HCAR5150)

❏ Razor Plane (MASR1510)
❏ English size drill bits: 17/64" (or 1/4"), 1/4", 7/32", 3/16", 5/32", 1/8", 7/64", 3/32", 1/16"

-or-

❏ Metric size drill bits: 6.7mm (or 6.4mm), 6.4mm, 5.6mm, 4.8mm, 4mm, 3.2mm, 2.8mm, 2.4mm, 1.6mm
❏ 1/4-20 Tap and #7 [5.1mm] drill for wing bolts (GPMR8105)
❏ 8-32 Tap and #29 [3.45mm] drill for engine mounting (GPMR8103)
❏ Denatured or Isopropyl Alcohol (to clean up excess epoxy)
❏ Sanding tools and assorted sandpaper (*see* Easy-Touch™ Bar Sander that follows)

Optional Supplies and Tools

Here is a list of optional tools mentioned in the manual that will help you build the Sea Fury.

❏ Long handle 9/64" ball end hex wrench (GPMR8004)
❏ Silver Solder (GPMR8070 w/flux)
❏ Masking Tape (TOPR8018)
❏ Great Planes Plan Protector (GPMR6167) or wax paper
❏ Dremel® #178 cutting bit (for countersinking screws in the servo hatch covers)
❏ Robart® Super Stand II (ROBP1402)
❏ Great Planes CG Machine™ (GPMR2400)
❏ Top Flite Precision Magnetic Prop Balancer™ (TOPQ5700)
❏ Straightedge with scale (HCAR0475)
❏ Cutting mat (HCAR0456)
❏ CA Debonder (GPMR6039)
❏ 6-Minute epoxy (GPMR6045)
❏ Milled fiberglass (GPMR6165)
❏ Microballoons (TOPR1090)
❏ R/C-56 Canopy Glue (JOZR5007)
❏ Epoxy brushes (GPMR8060)
❏ Mixing cups (GPMR8056)
❏ Mixing sticks (GPMR8055)
❏ Threadlocker (GPMR6060)
❏ Non-elastic monofilament or Kevlar fishing line for stab and wing alignment (K+SR4575)
❏ Builders Triangle Set (HCAR0480) (for fin alignment)
❏ Felt-Tip Marker (TOPQ2510)
❏ Small metal file
❏ Rotary tool such as Dremel
❏ Rotary tool reinforced cut-off wheel (GPMR8020)
❏ Curved Tip Canopy Scissors for Trimming Plastic Parts (HCAR0667)
❏ Dead Center™ Engine Mount Hole Locator (GPMR8130)
❏ Great Planes AccuThrow™ Deflection Gauge (for measuring control throws, GPMR2405)

EASY-TOUCH™ BAR SANDER

A flat, durable, easy to handle sanding tool is a necessity for building a well finished model. Great Planes makes a complete range of **Easy-Touch Bar Sanders** (patented) and replaceable **Easy-Touch Adhesive-backed Sandpaper**. While building the Sea Fury, we used two 5-1/2" Bar Sanders and two 11" Bar Sanders equipped with 80-grit and 150-grit Adhesive-backed Sandpaper.

Here's the complete list of Easy-Touch Bar Sanders and Adhesive Backed Sandpaper:

5-1/2" Bar Sander (GPMR6169)
11" Bar Sander (GPMR6170)
22" Bar Sander (GPMR6172)
33" Bar Sander (GPMR6174)
44" Bar Sander (GPMR6176)
11" Contour Multi-Sander (GPMR6190)

12' roll of Adhesive-backed:
80-grit sandpaper (GPMR6180)
150-grit sandpaper (GPMR6183)
180-grit sandpaper (GPMR6184)
220-grit sandpaper (GPMR6185)

Assortment pack of 5-1/2" strips (GPMR6189)

We also use Top Flite 320-grit (TOPR8030, 4 sheets) and 400-grit (TOPR8032, 4 sheets) wet-or-dry sandpaper for finish sanding.

Recommended covering tools and accessories

❏ Top Flite Heat Gun (TOPR2000)
❏ Top Flite Trim Seal Tool (TOPR2200)

-and-

❏ Top Flite Sealing Iron (TOPR2100)
❏ Top Flite Hot Sock™ (TOPR2175)

-or-

❏ 21st Century® Sealing Iron (COVR2700)
❏ 21st Century Cover Sock (COVR2702)

HOT TIP

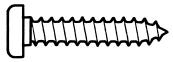
Plastic bags filled with lead shot are recommended to be used as building weights because they assume the shape of curved surfaces and apply uniform pressure without making dents in balsa. Shot can be purchased at sporting goods stores where hunting supplies are sold. #6 shot is recommended. One 25 lb. bag costs about fifteen to twenty dollars. Small, sealable food storage bags can be used to hold the shot. Tape the bags shut for security. Each bag holds about two to three pounds. Fifteen to twenty bags is adequate for this project.

IMPORTANT BUILDING NOTES

There are two types of screws used in this kit:

Sheet metal screws are designated by a number and a length.

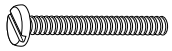
For example #6 x 3/4" long [19.1mm]



This is a number six screw that is 3/4" [19.1mm] long.

Machine screws are designated by a number, threads per inch, and a length.

For example 4-40 x 3/4" long [19.1mm]



This is a number four screw that is 3/4" [19.1mm] long with forty threads per inch.

- When you see the term ***test fit*** in the instructions, it means that you should first position the part on the assembly **without using any glue**, then slightly modify or *custom fit* the part as necessary for the best fit.

- Whenever the term ***glue*** is written you should rely upon your experience to decide what type of glue to use. When a specific type of adhesive works best for that step, the instructions will tell you what glue is recommended.

- Whenever just ***epoxy*** is specified you may use ***either*** 30-minute epoxy ***or*** 6-minute epoxy. When 30-minute epoxy is **specified,** it is **highly recommended** that you use only 30-minute (or 45-minute) epoxy because you will need the working time and/or the additional strength.

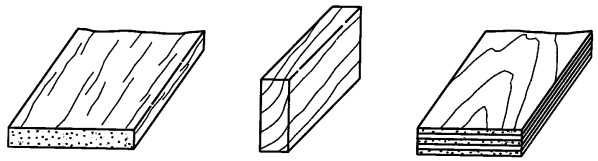
- **Photos** and **sketches** are placed **before** the step they refer to. Frequently you can study photos in following steps to get another view of the same parts.

METRIC CONVERSION

1" = 25.4mm (conversion factor)

1/64" = .4mm	1" = 25.4mm
1/32" = .8mm	2" = 50.8mm
1/16" = 1.6mm	3" = 76.2mm
3/32" = 2.4mm	6" = 152.4mm
1/8" = 3.2mm	12" = 304.8mm
5/32" = 4mm	15" = 381mm
3/16" = 4.8mm	18" = 457.2mm
1/4" = 6.4mm	21" = 533.4mm
3/8" = 9.5mm	24" = 609.6mm
1/2" = 12.7mm	30" = 762mm
5/8" = 15.9mm	36" = 914.4mm
3/4" = 19mm	

TYPES OF WOOD



BALSA **BASSWOOD** **PLYWOOD**

PREPARE TO BUILD

1. A set of miniaturized building plans is included in the middle of this manual. They may be removed and used as a quick, handy reference, so you don't have to get out the full-size plans when you are not building over them.

2. If you've already purchased the retractable landing gear, or as soon as you do, take the air lines out of the package. Unravel the lines and hang them somewhere in your shop. When it's time to install the retracts, the kinks will be out of the lines and they'll be easier to work with.

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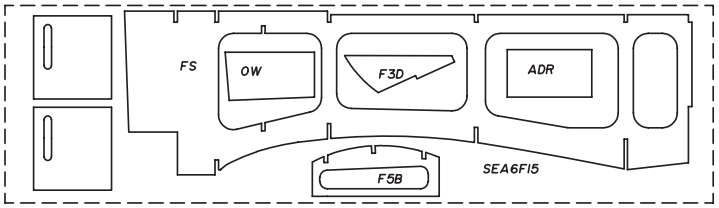
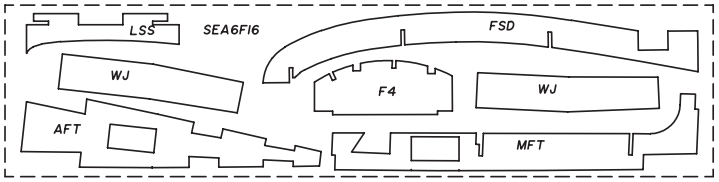
PLY DIE-CUT PATTERNS

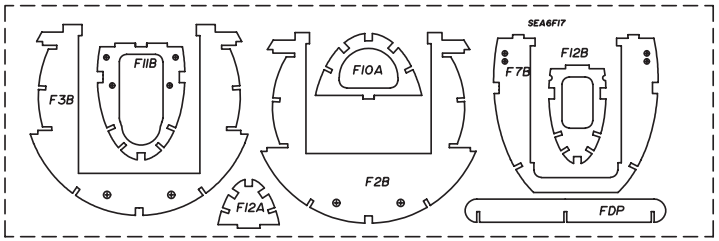
DIE NO. SEA6FI5
I/8" X 6-5/8" X 23-3/4" LIGHT PLY QNTY 2



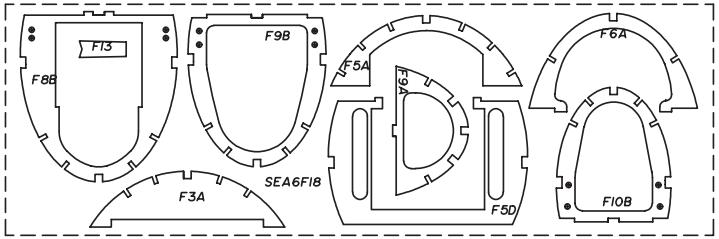
DIE NO. SEA6FI6
I/8" X 5-3/4" X 23-3/4" LIGHT PLY QNTY 2



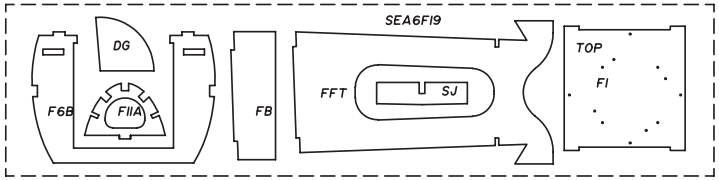
DIE NO. SEA6FI7
I/8" X 7-3/4" X 23-3/4" LIGHT PLY QNTY I



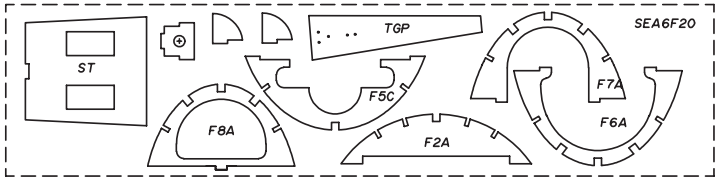
DIE NO. SEA6FI8
I/8" X 7-3/4" X 23-3/4" LIGHT PLY QNTY I



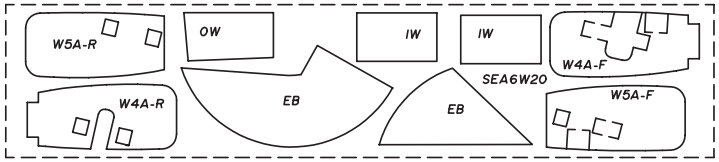
DIE NO. SEA6FI9
I/8" X 5-3/4" X 23-3/4" LIGHT PLY QNTY I



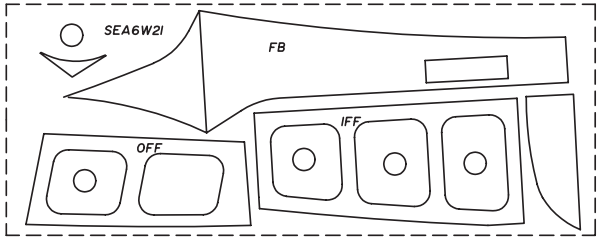
DIE NO. SEA6F20
I/8" X 5-3/4" X 23-3/4" LIGHT QNTY I



DIE NO. SEA6W20
I/8" X 5-I/8" X 23-3/4" LIGHT PLY QNTY 2

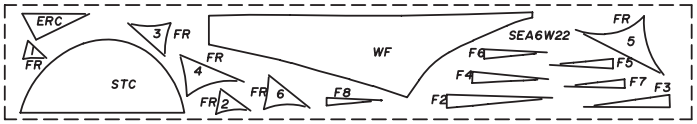


DIE NO. SEA6W2I
I/32" X 7-3/4" X I9-3/4" BIRCH PLY QNTY 2

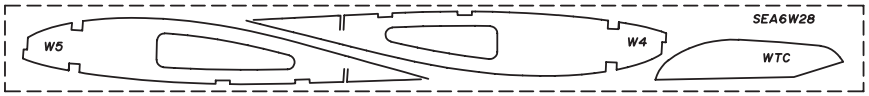


BALSA DIE-CUT PATTERNS

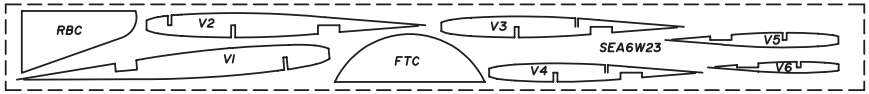
DIE NO. SEA6W22 1/16" X 4" X 24" BALSA QNTY 2



DIE NO. SEA6W28 3/32" X 3" X 30" BALSA QNTY 2



DIE NO. SEA6W23 1/16" X 3" X 30" BALSA QNTY 1



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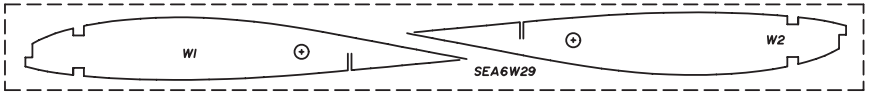

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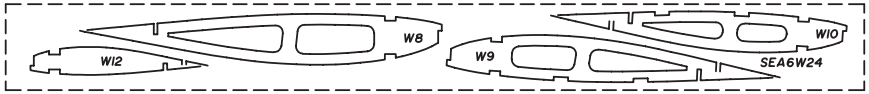

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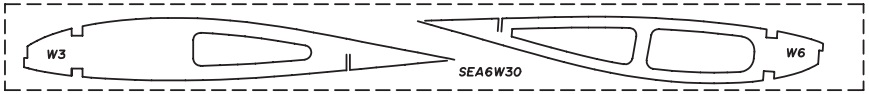
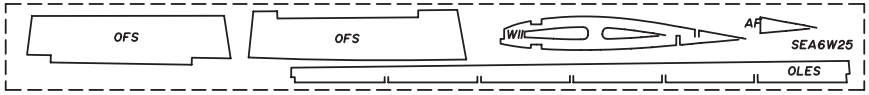
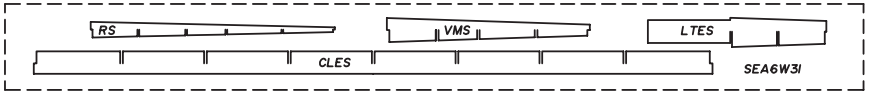


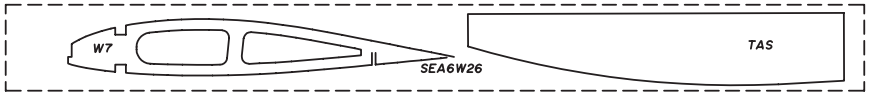
DIE NO. SEA6W25 3/32" X 3" X 30" BALSA QNTY 2



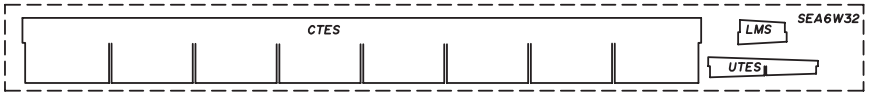
DIE NO. SEA6W31 1/8" X 3" X 30" BALSA QNTY 1



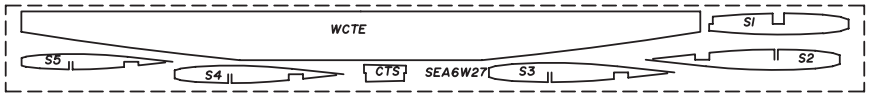
DIE NO. SEA6W26 3/32" X 3" X 30" BALSA QNTY 2



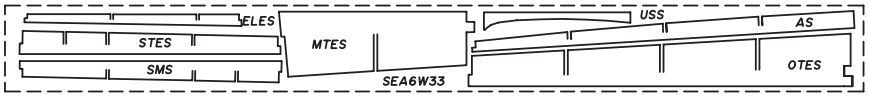
DIE NO. SEA6W32 1/8" X 3" X 30" BALSA QNTY 1



DIE NO. SEA6W27 3/32" X 3" X 30" BALSA QNTY 1



DIE NO. SEA6W33 1/8" X 3" X 30" BALSA QNTY 2



3. Remove all the parts from the box. Use a ballpoint pen (not a felt tip pen) to lightly write the **name** or **size** on each piece so it can be identified it later. Use the ***die-cut patterns*** on pages 8 & 9 to identify and mark the die-cut parts **before** removing them from their die sheets. Many of the parts already have numbers stamped on them, but in some cases the numbers are located alongside the parts or only on the die drawings in the manual. If a part is difficult to remove from its die sheet, don't force it out. Instead, cut around the part with a hobby knife and a #11 blade. After removing the parts from their die sheets, lightly sand the edges to remove slivers or die-cutting irregularities. As you proceed, it's not necessary to save every scrap of wood, but some of the larger pieces of wood should be saved.

Note: If building the wing with **fixed** landing gear, do not punch out the holes in ribs **W4** and **W5** for the retractable landing gear rails.

4. Separate the parts into groups such as **stab, fin, wing,** and **fuse.** Store smaller parts in zipper-top food storage bags.

BUILD THE TAIL SURFACES

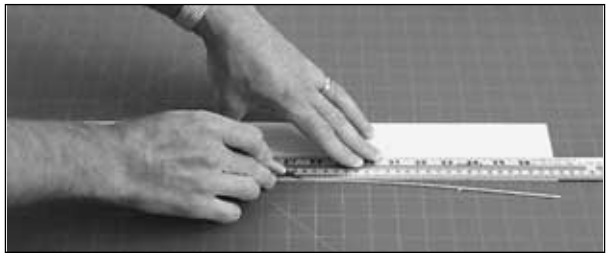
Make the stab and fin skins

❑ 1. Use the ***Hot Tip*** that follows or your own method to make three 1/16" x 6" x 30" [1.6 x 152 x 762mm] balsa sheets from six 1/16" x 3" x 30" [1.6 x 76 x 762mm] balsa sheets.

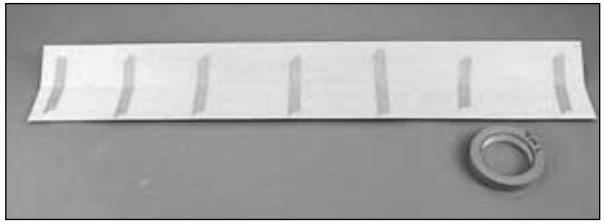
Top Flite selects balsa that is intended for sheeting, though occasionally a few of these sheets may have a small nick or split near the ends. If your kit contains a few of these sheets, arrange them and glue them together so the defects will not interfere with the final shape of the skin.

HOT TIP

HOW TO GLUE BALSA SHEETING TOGETHER

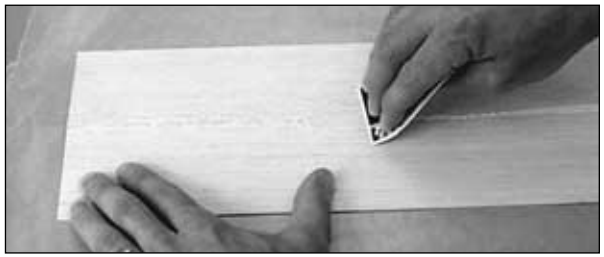


A. Use a straightedge to true one edge of two balsa sheets.



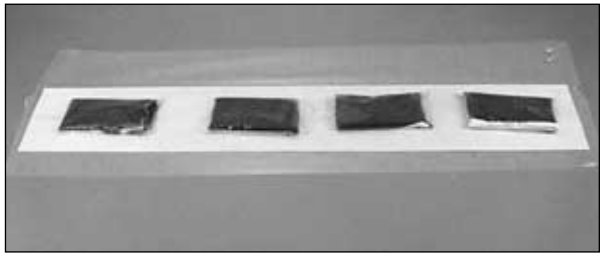
B. Use masking tape to tightly tape the trued edges of the sheets together.

C. Turn the sheets over and apply slow drying glue such as Great Planes *Pro* aliphatic resin (GPMR6160) to the joining edges. Some modelers prefer to use CA for gluing sheeting together, but CA is not recommended because it does not allow enough working time to get the sheets aligned. Hardened CA is also much harder than balsa which can make sanding difficult.



D. Lay the sheets on your workbench covered with Great Planes Plan Protector or wax paper. Use a credit card or something similar as a squeegee to simultaneously press the sheets flat as you wipe the glue from the seam.

E. Press the joining edges of the sheets down to make sure they are even. This is **important** and will **greatly** minimize the amount of sanding required (and thus prevent over-thinning the balsa).



F. Place weights on top of the sheet to hold it flat while the glue dries.

G. After the glue dries, remove the tape and sand the sheets flat and even.

Note: Some modelers tend to sand the sheeting too much after it is applied to the structure, making low spots over supported areas (such as over ribs and stringers) where fingers can easily punch through. By following the procedure above (specifically, by aligning the joining edges of the sheets as shown in step E), little sanding should be required. Most of the sanding that ***is*** required should be done **before** the sheeting is glued in place. The only sanding that should be required after the sheeting is glued to the structure is final sanding with 320-or 400-grit sandpaper.

Here are a few other things to keep in mind while sanding balsa sheeting:

1. Sand the sheets on a flat work surface free from hardened drops of glue or other imperfections that will damage the sheeting.
2. Sand the sheeting only as much as required. The inside needs to be sanded just enough to remove excess glue and doesn't have to be smooth.
3. Though sanding ***across*** the grain removes material faster, it leaves visible scratches. Sanding ***with*** the grain is preferable, especially when finish-sanding.
4. If the glue joint is uneven and requires much sanding, it may be best to leave it slightly uneven rather than over-sanding. A slightly uneven glue joint is preferable to paper-thin balsa!

❑ 2. Set the sheets aside until it's time to sheet the tail surfaces.

Sea Fury Fact

The Sea Fury was designed and built by Hawker Aircraft Ltd., Sutton Lane, Langley, Bucks, England.

Build the fin and rudder

❑ 1. Unroll the fuse plan sheet. Roll it inside out so it will lie flat.

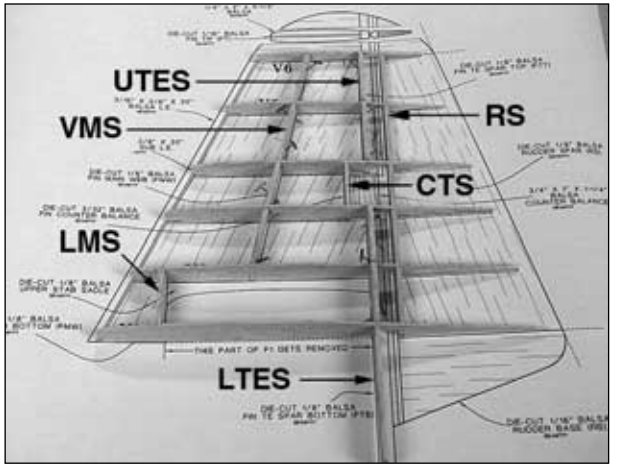
❑ 2. Position the fuse plan so the **fin** and **rudder** are over your flat building board, or cut the fin and rudder from the plan. Cover the plan with Great Planes Plan Protector or wax paper so glue will not adhere to the plan.

IMPORTANT BUILDING NOTE:

The fin is initially built and sheeted while lying on its right side supported by the TE spars and ribs.

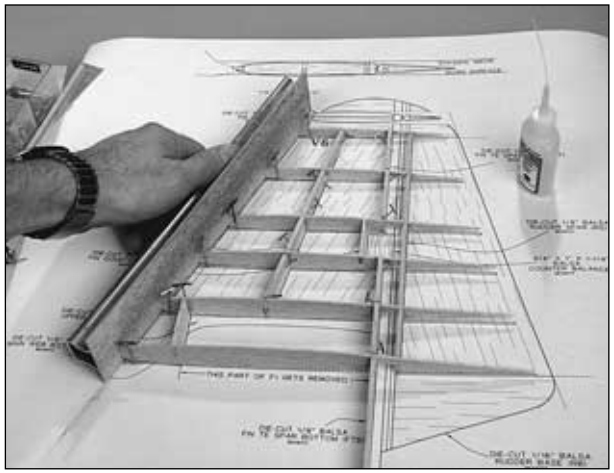
When it's time to sheet the other side, the fin is turned over and supported by the sheeting and TE spar on the left side. The TE spars will be trimmed even with the sheeting **after** the fin has been completed.

The stab and wing panels are built the same way, thus simplifying construction and ensuring straight and true flying surfaces (providing your workbench is flat). This system also eliminates the requirement for jig tabs on the ribs which can break off while removing the ribs from the die sheets, or during construction.

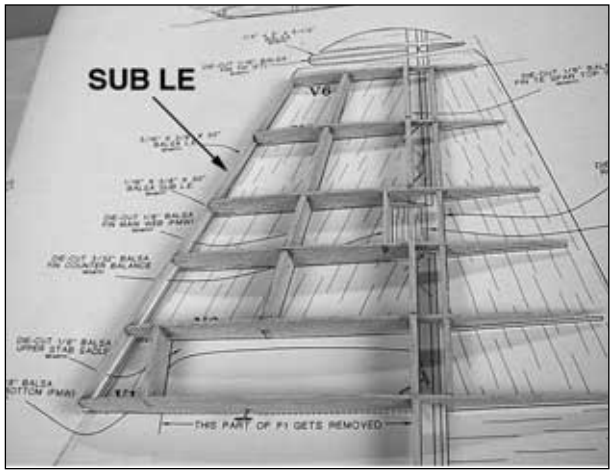


❑ 3. Without using glue, join the die-cut 1/16" [1.6mm] balsa **fin ribs V 1** through **V6** to the die-cut 1/8" [3.2mm] balsa **vertical main spar (VMS), the lower main spar (LMS)**, the **upper TE spar (UTES),** the **lower TE spars (LTES)** and the **rudder spar (RS)**. Add the die-cut 3/32" [2.4mm] balsa **fin center TE spar (CTS)**. Use T-pins to hold the assembly to the plan.

❑ 4. Making certain that the vertical main spar, the upper and lower TE spars and the ribs are contacting the plan at their lowest point, use medium CA to glue all the parts of the assembly together. Be certain to pull the rudder spar all the way up into the notches of the ribs when gluing it into position. **Note:** Use only a small amount of CA on each glue joint. Avoid using excess CA which will cause glue blobs that may interfere with the sheeting that will be added later.

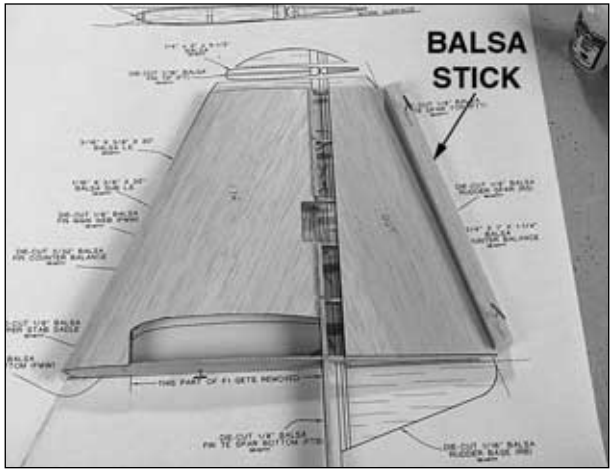


❑ 5. Use a bar sander with 80-grit sandpaper to sand the front the fin ribs at an angle for the sub LE.



❑ 6. Cut the 1/16" x 1/2" x 30" [1.6 x 12.7 x 762mm] balsa **sub LE** to the correct length, then glue it to the front of the fin ribs. Save the remainder for the stab sub LE's. Sand the upward facing edge of the sub LE even with the tops of the ribs.

Refer to this photo for the following two steps.

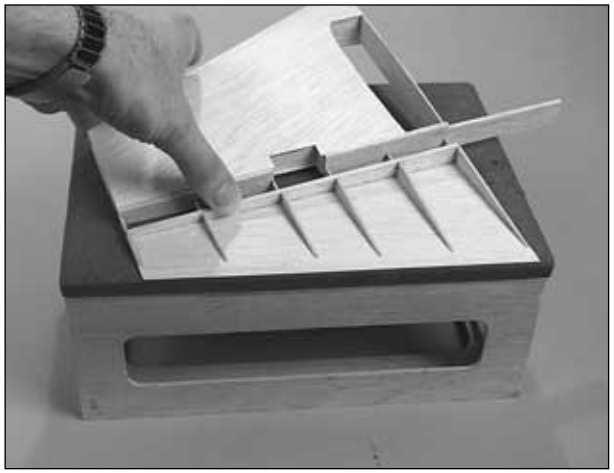


❑ 7. Remove any T-pins that will interfere with the fin and rudder skins or that will be concealed beneath the skins after they are glued in place. Using the fin assembly as a guide, make a **fin skin** for the left side of the fin from one of the balsa sheets you prepared earlier. Be certain to make the skin slightly oversized as it will be trimmed to exact shape later. Glue the skin into position with thick CA or aliphatic resin.

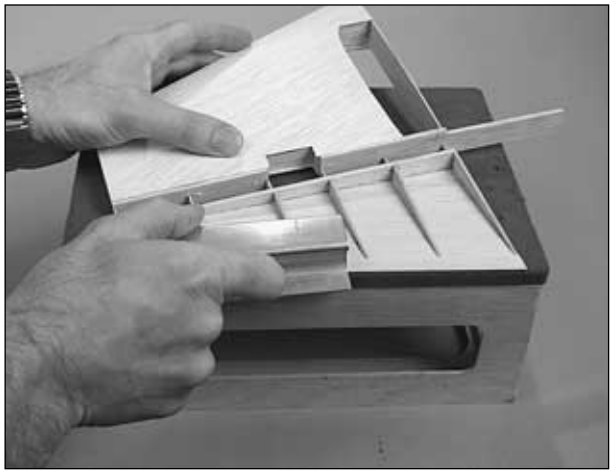
❑ 8. Make a **rudder skin** the same way. Glue the rudder skin into position. **Hint:** Pin a large balsa stick to the building board aligned with the location of the rudder TE on the plan. This will insure accurate positioning of the skin.

❑ 9. Remove the assembly from the building board. Sand the right side of the fin so the sub LE and spars are even with the ribs.

❑ 10. Use the second balsa sheet you prepared to make another fin and rudder skin. Place the sheeted side of the fin/rudder assembly on the building board. Glue the remaining **fin skin only** to the right side of the fin.



❑ 11. Place the fin on your workbench or a platform so the TE of the rudder is even with the edge.



❑ 12. Use a bar sander with 80-grit sandpaper to sand the TE of the rudder to a fine point as shown in the cross-section of the plan.

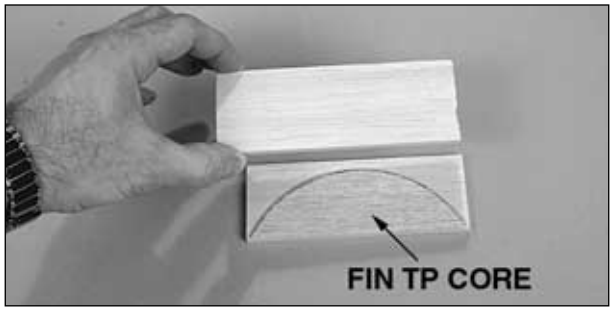
❏ 13. Glue the remaining rudder skin to the rudder. When doing so, position the rudder so it is resting flat on the workbench.

❏ 14. Glue both die-cut 1/8" [3.2mm] balsa **upper stab saddles (USS)** to the **inside** of the rudder skins and rib V2 as shown on the plan. Trim the fin skins even with the saddles and the lower main spar.

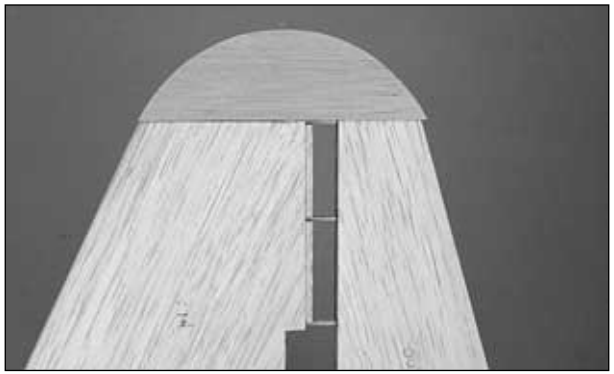
❏ 15. Use a bar sander with 80-grit sandpaper to true the edges of the sheeting even with the sub LE and rib V6. Sand the edges of the upper and lower TE spar even with the fin sheeting.

❏ 16. Cut the **fin LE** from the 3/16" x 1/2" x 30" [4.8 x 12.7 x 762mm] balsa stick, then glue it to the fin. Save the remainder of the balsa stick for the stab LE.

❏ 17. Sand both ends of the fin LE even with the top and bottom of the fin. Use a razor plane followed with progressively finer grits of sandpaper to round the fin LE as shown in the cross-section on the plan.

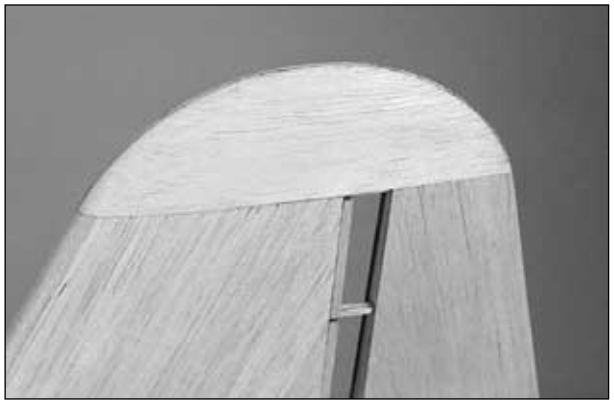


❏ 18. Cut two 5-1/2" [140mm] pieces from the 1/4 x 2" x 11-7/8" [6.4 x 51 x 302mm] balsa sheet. Glue the die-cut 1/16" [1.6mm] balsa **fin tip core (FTC)** between both 1/4" [6.4mm] balsa sheets with the bottom edges aligned. Sand both 1/4" [6.4mm] outer pieces even with the fin tip core.



❏ 19. Test fit the tip to the fin/rudder. Be certain the tip is vertical and in alignment with both the fin and rudder. If necessary make adjustments, then glue the tip into position.

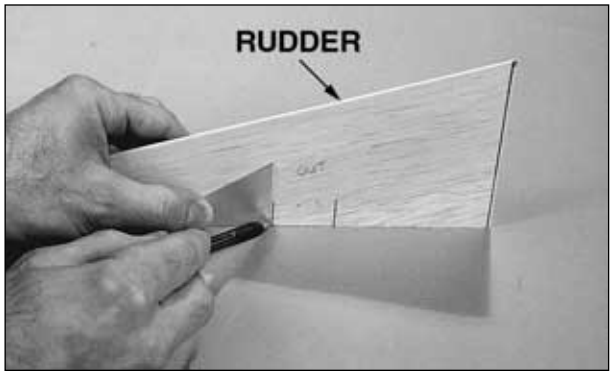
❏ 20. Use a razor plane followed by a bar sander to shape the tip even with the fin and rudder sheeting, but do not round yet. **Hint:** While sanding, rest the bar sander on the sheeting, but apply pressure only to the tip. If you fear sanding the sheeting too much, protect it with a few strips of masking tape.



❏ 21. Finish shaping the tip by rounding and smoothing. For scale appearance, note that the tip is sanded rather thin, yet round.

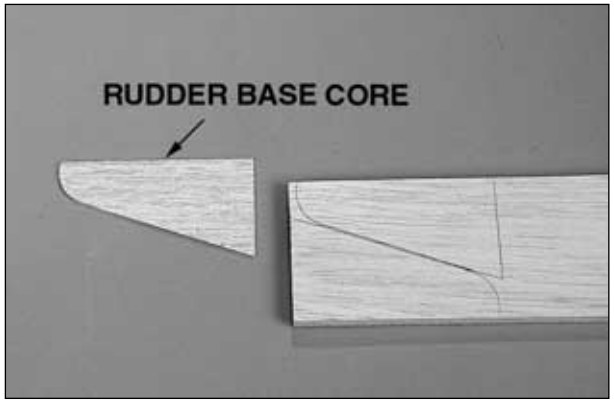
Finish the fin and rudder

❏ 1. Separate the rudder from the fin by using a razor saw to cut through the ribs and the tip. Use a bar sander with 80-grit sandpaper to sand the remainder of the ribs even with the fin TE and rudder spar.



❏ 2. Use a small square and a ballpoint pen to mark the rudder where the counter balance is to be glued on later (between ribs 3 & 4).

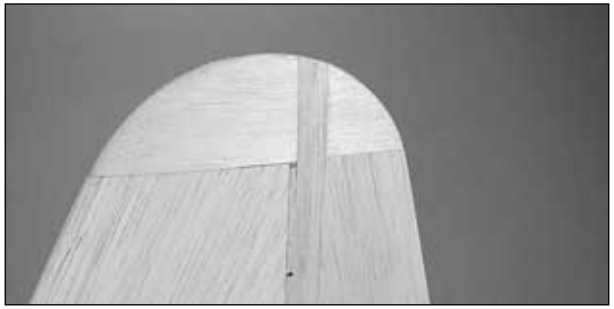
❏ 3. Sand the bottom of the rudder sheeting even with the bottom rudder rib.



❏ 4. Trace the die-cut 1/16" [1.6mm] balsa **rudder base core (RBC)** onto one end of the 3/8" x 3" x 30" [9.5 x 76 x 762mm] balsa sheet two times as shown.

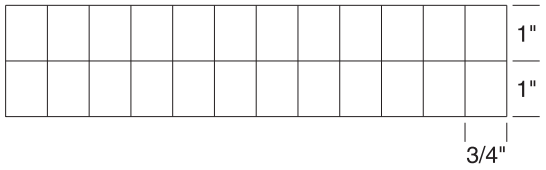
❏ 5. Cut both pieces from the 3/8" [9.5mm] balsa sheet and glue one on each side of the base core. Glue the assembly to the bottom of the rudder. Shape the rudder base to match the rudder, but do not round until instructed to do so (after the fuse has been constructed).

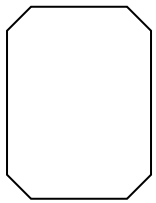
❏ 6. Cut the **fin TE** and the **rudder LE** from a 1/4" x 3/4" x 30" [6.4 x 19.1 x 762mm] balsa stick and glue them to the fin and rudder. Sand the fin TE even with the fin and sand the rudder LE even with the rudder. Temporarily tack-glue the rudder to the fin with about five small drops of medium CA.



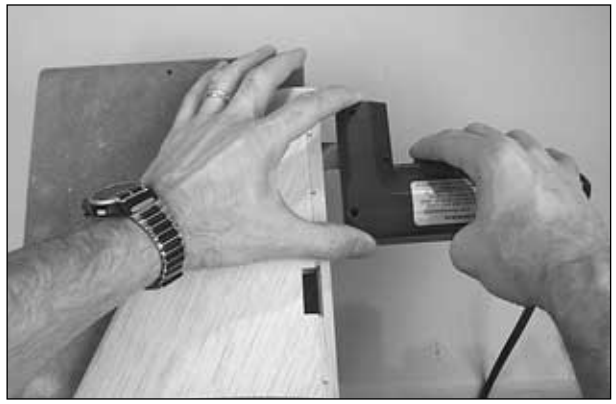
❏ 7. Final-sand the fin TE and rudder LE and the fin and rudder tip even with each other. Break the rudder free from the fin.

❏ 8. Mark a centerline on the trailing edge of the fin. This can most accurately be done by sticking two T-pins in the center of the TE–one near each end. Position a straightedge against the T-pins and draw a line with a ballpoint pen. Mark a centerline on the LE of the rudder the same way.





❏ 9. Cut four 3/4" x 1" [19 x 25mm] hinges from the 2" x 9" [51 x 230mm] **CA hinge strip** supplied with this kit. Snip the corners off so they go in easier.

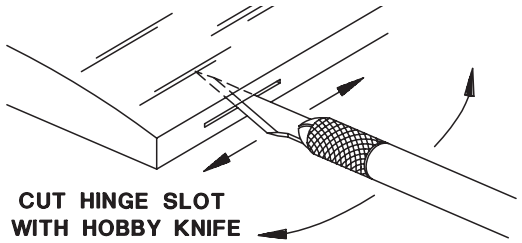


❏ 10. Using the centerlines as a guide, cut the hinge slots where shown on the plan with a Great Planes Slot Machine, then proceed to step 11. If you do not have a Slot Machine, follow the procedure that follows to cut hinge slots with a hobby knife and a #11 blade *(or run to the hobby shop and buy a Slot Machine!).*

NOTES ABOUT CA HINGES
This kit is supplied with CA hinge material consisting of a 3-layer lamination of mylar and polyester specially made for hinging model airplanes. When properly installed, this type of CA hinge provides the best combination of strength, durability and easy installation. We use these hinges on all our Gold Edition warbirds, but it is **essential** to install them **correctly**. Follow the hinging instructions in this manual for the best result. The techniques shown have been developed to ensure thorough and secure gluing.

How to cut hinge slots with a hobby knife

When using a hobby knife to cut hinge slots, one of the most common mistakes made by modelers is making the slots too tight. This restricts the flow of CA to the back of the hinges. Another mistake made when installing hinges is not using enough glue to fully secure the hinge over its entire surface area. This results in hinges that are only *tack glued*. Follow these steps to cut hinge slots with a hobby knife:



CUT HINGE SLOT WITH HOBBY KNIFE AND No. 11 BLADE

A. Using the centerline as a guide, cut one of the hinge slots in the fin or rudder where shown on the plan with a #11 blade. Begin by cutting a shallow slit. Make three or four cuts along the same line, going slightly deeper each time. As you proceed, be certain to go **straight** into the wood and move the knife from side to side until the blade has reached the correct depth for the hinge.

B. Test fit a hinge into the slot. If the hinge does not slide into the slot easily, remove the hinge and reinsert the knife working the blade back and forth a few times to provide more clearance (it's the back edge of the blade that does the widening).

C. Cut the rest of the hinge slots the same way.

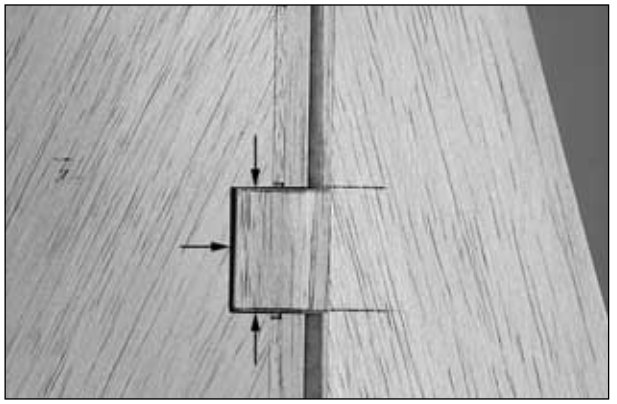
❏ 11. Temporarily join the rudder to the fin with the hinges. If necessary, sand the fin and rudder so they *match up* well.

❏ 12. Use a razor plane followed by a bar sander to shape the LE of the rudder to a "V" for control throw. Make certain 1-5/8" [41mm] of right and left rudder throw can be achieved. Increase the angle of the "V" if necessary.

Hey, now all that has to be done on the rudder is make the counter balance...

Sea Fury Fact

Full-Size Sea Fury Specifications:
Wingspan: 38'4" [11.7m]
Wing area: 280 sq ft [260 sq m]
Overall length (from tip of spinner to end of rudder): 34'7" [10.5m]
Stab span: 14' [4.3m]
Max. gross weight: 14,600 lbs [6,623kg]
Normal weight: 12,316 lbs [5,587kg]



❏ 13. True the edges of the fin sheeting around the cut-out for the counter balance where indicated by the arrows in the photo. Notch the LE of the rudder to accommodate the 3/4" x 1" x 1-1/4" [19.1 x 25.4 x 32mm] balsa **counter balance** where it will align with the cut-out in the fin. Test fit the counter balance into the notch and see how it matches up to the cut-out in the fin. Make adjustments where necessary.

❏ 14. Securely glue the counter balance to the rudder. Sand the counter balance to match the rudder, then round the leading edge just enough to clear the fin.

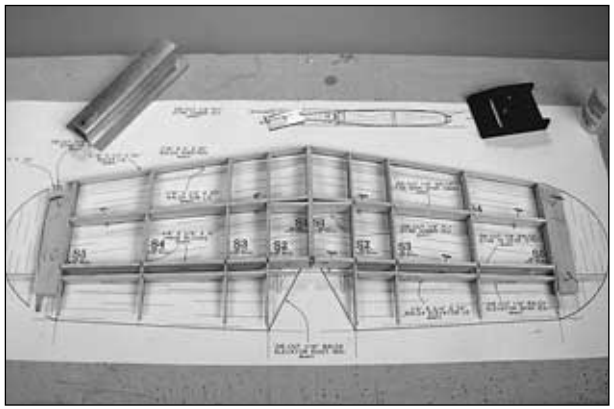
❏ 15. Fill the small notches in the upper and lower TE spars on the left side of the fin with lightweight balsa filler. Allow to dry, then final-sand.

Build the stab and elevators

Note: The stabilizer is built upside-down. There is nothing to remember or figure out ahead of time. Simply build the stab as instructed.

❑ 1. Roll the wing plan inside out so it will lie flat. Cut the stab plan from the wing plan and place it over your flat building board. Cover the plan with Plan Protector so glue will not adhere.

Refer to this photo for the following four steps.

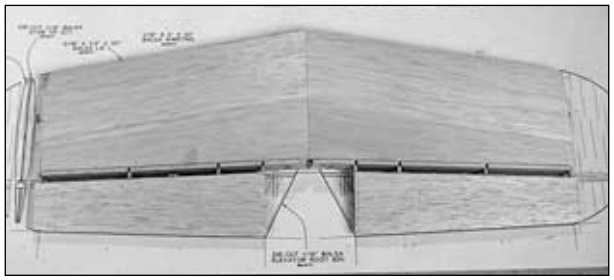


❑ 2. Without using glue, join both sets of die-cut 3/32" [2.4mm] **stab ribs S2** through **S5** to both die-cut 1/8" [3.2mm] balsa **stab main spars (SMS)**. Place the assembly over the stab plan. If necessary, widen the notches in the ribs and spars so they fit at the angle on the plan.

❑ 3. Still without glue, join both die-cut 1/8" [3.2mm] balsa **stab TE spars (STES)** and both die-cut 1/8" [3.2mm] balsa **elevator spars (ELES)** to the ribs, then pin the assembly to the building board aligned over the plan. Glue the ribs to the main and TE spars. **Hint:** Pin a large balsa stick to the building board at both ends of the stab to help hold the two halves together and maintain alignment.

❑ 4. Glue both die-cut 3/32" [2.4mm] balsa **stab ribs S1** together. Test fit, then use epoxy to glue the die-cut 1/8" [3.2mm] plywood **stab joiner (SJ)** and the S1's to the assembly.

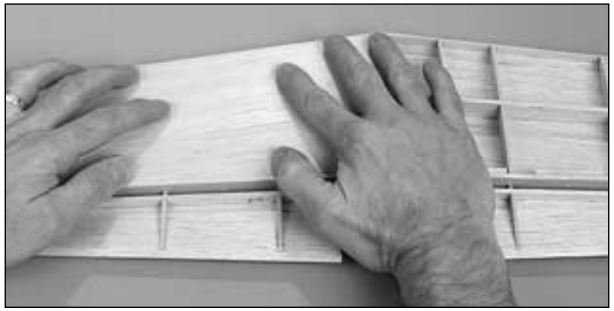
❑ 5. The same as was done on the fin, sand the fronts of the ribs at an angle to match the sub LE. Use the remainder of the 1/16" x 1/2" [1.6 x 12.7mm] balsa stick used for the fin sub LE to make the stab sub LE, then glue it into position. Sand the top of the sub LE and spars even with the ribs.



❑ 6. Remove or relocate any T-pins that will interfere with the sheeting or that will be concealed under the sheeting after it's glued into place. Cut the top stab and elevator skins from the second balsa sheet prepared earlier. Glue the skins to the top of the stab and elevators.

❑ 7. Remove the assembly from the plan. Use a ballpoint pen to mark the side of the stab you just sheeted as **"bottom"**.

❑ 8. Cut the **hinge blocks** from the 1/4" x 3/8" x 11-7/8" [6.4 x 9.5 x 302mm] balsa stick, then glue them to the stab TE spars where shown on the plan. Trim the top of any hinge blocks where necessary so they do not interfere with the top stab sheeting.

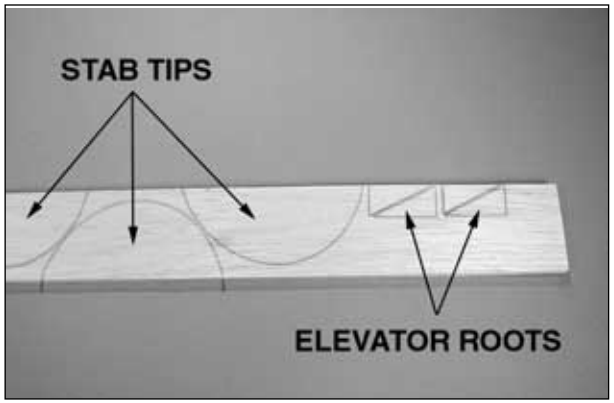


❑ 9. Cut the top stab and elevator skins from the remainder of the balsa sheeting. With the stab lying flat on the workbench, glue one of the stab skins into position. When doing so, press down to hold the sheeting to the structure and to hold the structure to the flat work surface. Glue the other stab skin to the stab the same way.

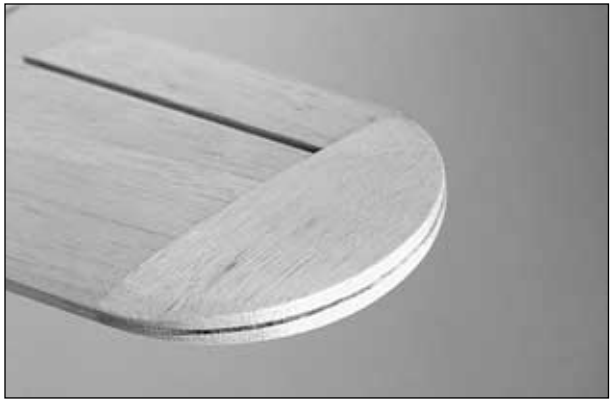
❑ 10. The same as was done on the rudder skin, sand the TE of the bottom elevator skins to match the tapering angle of the ribs. Glue the top elevator skins into position.

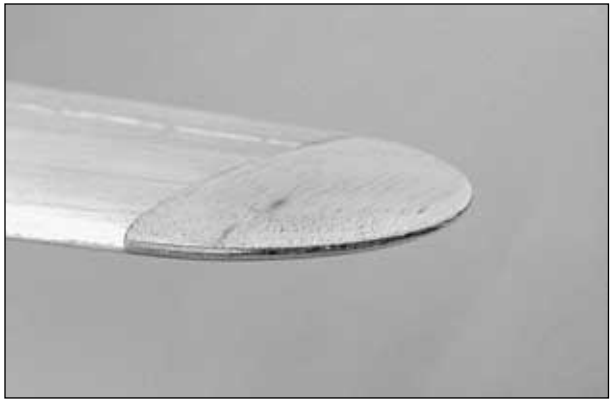
❑ 11. True all the sheeting even with both ends of the stab/elevators and the sub LE.

❑ 12. Cut the remainder of the 3/16" x 1/2" [4.8 x 12.7mm] balsa stick used for the fin LE into two pieces for the **stab LE**, then glue it into position. Shape the LE even with the stab, but do not round yet.



❑ 13. Place both die-cut 1/16" [1.6mm] balsa **stab tip cores (STC)** over the plan. Note which end is the front (they're not symmetrical like the fin tip, but they're close). The same as you did for the fin tip, use one of the stab tip cores to lay out the patterns on the remainder of the 3/8" x 3" x 30" [9.5 x 76 x 762mm] balsa sheet used for the rudder base. While you're at it, lay out the die-cut 1/16" [1.6mm] balsa **elevator root core (ERC)** patterns as well.

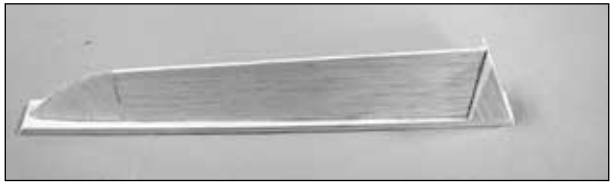




❏ 14. Cut the tips and roots from the balsa sheet. Glue them to the die-cut cores. Glue the stab tips to both ends of the stab and elevators and shape them the same way you did the fin (in two stages: first sanding the tips to match the stab and elevator, then by rounding the tips).

Finish the stab and elevators

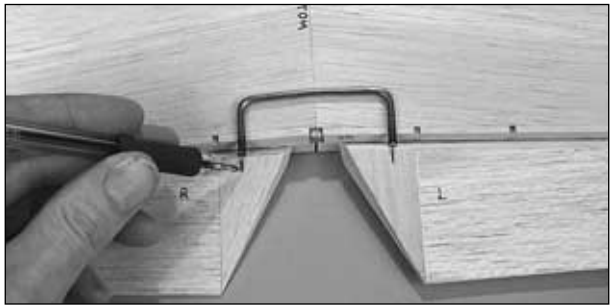
❏ 1. Use a ballpoint pen to mark the elevators in an inconspicuous location as "L" and "R." Cut the elevators from the stab. Sand the tips and rib stubs even with the elevators and stab.



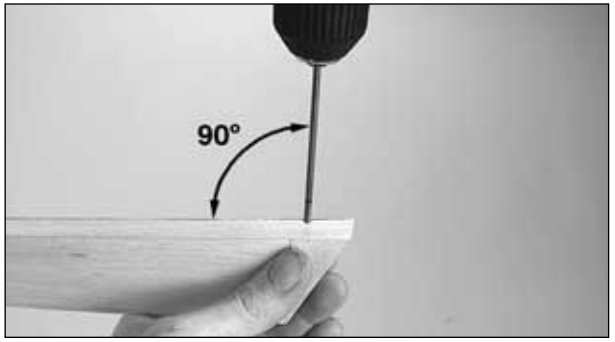
❏ 2. Glue the elevator root blocks to the elevator. Sand the fronts of the blocks even with the LE spars. Cut the **elevator leading edges** from the 1/4" x 3/4" x 30" [6.4 x 19.1 x 762mm] balsa stick, then glue them to the elevators.

❏ 3. Shape the elevator LE's and the root blocks even with the elevators.

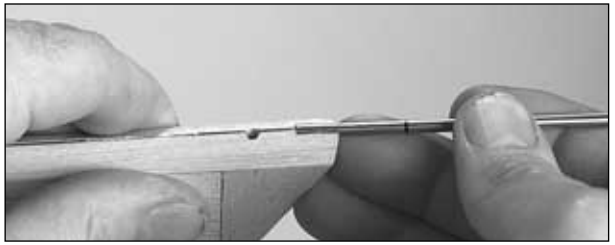
❏ 4. Cut the hinge slots. Shape elevator leading edges to a "V" to achieve 5/8" [16mm] of control throw.



❏ 5. With the elevators temporarily joined to the stab with the hinges, center the **elevator joiner wire** on the elevators as shown on the plan. Use a ballpoint pen to mark the location of the joiner wires on the elevators.



❏ 6. Drill a 1/8" [3.2mm] hole in both elevators for the joiner wire.



❏ 7. Cut a groove in both elevators to accommodate the joiner wire. **Hint:** Use a Great Planes *Groove Tube* (GPMR8140) or a 1/8" [3.2mm] brass tube sharpened on one end to cut the grooves.

❏ 8. Test fit the elevators to the stab with the joiner wire. If necessary, bend the wire so the elevators align with each other. **Note:** If you found it necessary to bend the wire, note that it must be reinserted into the elevators the same way when it's time to glue it in. If this is the case, file a small notch in the **right** side of the joiner near the end.

❏ 9. Round the elevator root blocks.

BUILD THE WING

Make the wing skins

❏ 1. The same as the balsa sheets for the tail surfaces were made, make five 6" x 24" [152 x 610mm] sheets, and four 9" x 24" [229 x 610mm] sheets from 22 3/32" x 3" x 24" [2.4 x 76 x 610mm] balsa sheets.

❏ 2. After all the glue has dried, make two 12" x 24" [305 x 610mm] sheets from four 6" x 24" [152 x 610mm] sheets (there will still be one 6" x 24" [152 x 610mm] sheet remaining).

Prepare the landing gear ribs

Retract options:

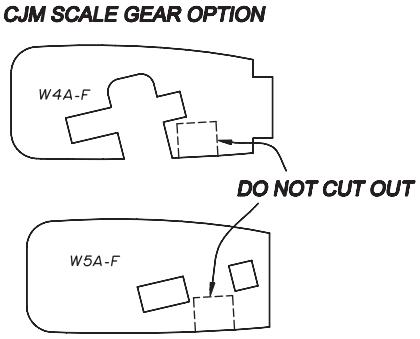
If building the Sea Fury with Robart #605 HD retracts with 3/16" [4.8mm] wire struts, there are two options. The "long-strut" option represents the correct scale length of the landing gear struts. However, because of poor ground handling over rough grass fields caused by the unusually long length of the struts, the long-strut option is recommended only if flying from smooth, paved surfaces. If flying from grass fields, the "short-strut" option is recommended due to improved ground handling. If installing any one of the Century Jet Models retract options recommended, due to their design and rigidity, the struts may be left at the scale length no matter what surface you are flying from. **Note:** Most of the instructions depict the installation of the Robart gear, but apply to both the installation of Robart gear and the CJM scale gear. Where necessary, separate instructions and photos are provided for the installation of the CJM scale gear.

❏ 1. Place the center section of the wing plan.

Note: Steps preceded by an "F" are intended for **fixed** landing gear only (and will also be shaded). Steps preceded by an "R" are intended for retracts only.

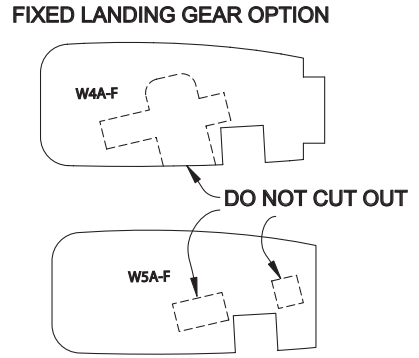
Follow the instructions to prepare the landing gear ribs for the **right** side of the center section first.

Perform this step only if installing #32425 CJM Top Flite Sea Fury system with scale struts.

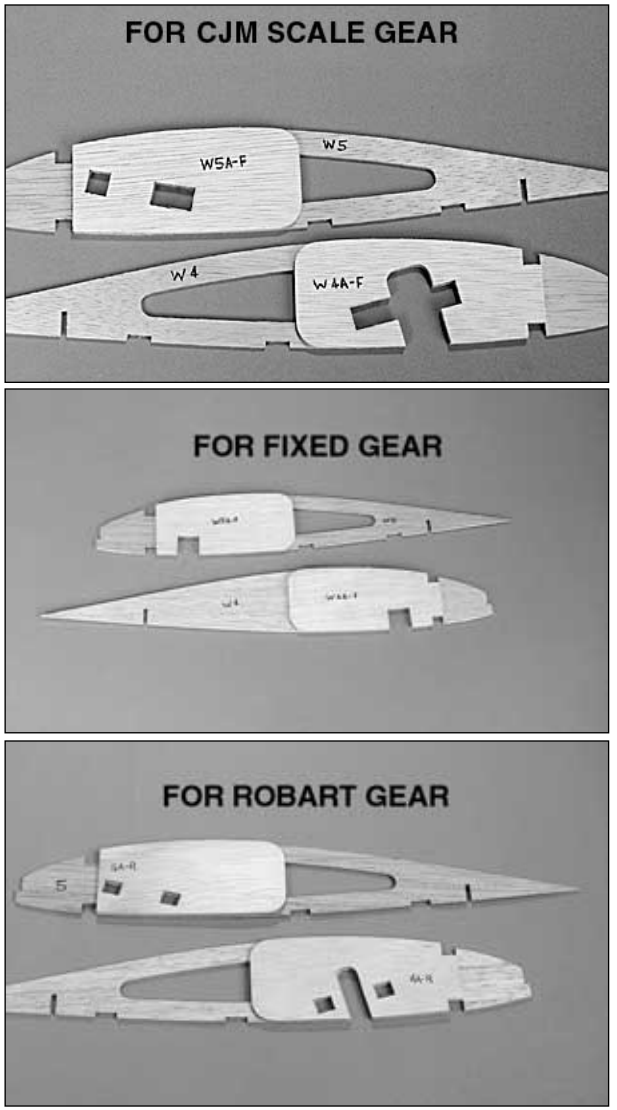


❏ ❏ R2. Use a hobby knife to cut out one set of die-cut 1/8" [3.2mm] plywood **rib doublers W4A-F** and **W5A-F** along the embossed lines as shown in the sketch. **Do not** cut out the areas indicated by the dashed lines, as these are for the fixed landing gear rail.

Perform this step only if installing fixed landing gear.



❏ ❏ F3. Use a hobby knife to cut out one set of die-cut 1/8" [3.2mm] plywood **rib doublers W4A-F** and **W5A-F** along the embossed lines as shown in the sketch. **Do not** cut out the areas indicated by the dashed lines, as these are for the retractable landing gear rails.

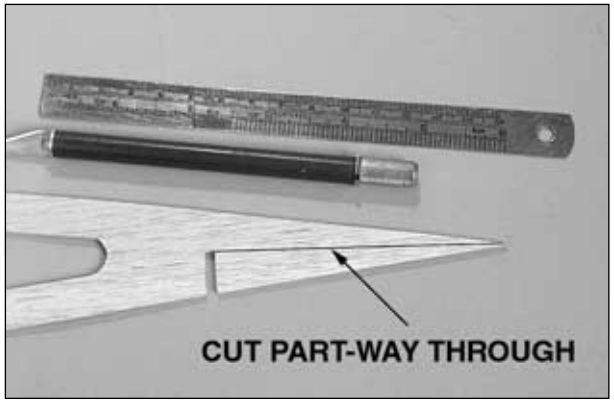


❏ ❏ 4. Use 30-minute epoxy to glue the rib doublers to a die-cut 3/32" [2.4mm] balsa wing rib **W4** and **W5** as shown on the plan and in the photo. **Note:** If installing Robart #605 retracts, glue die-cut 1/8" [3.2mm] plywood **rib doublers W4A-R** and **W5A-R** to the ribs. If this is your first time through, be certain to make the ribs for the **right** side of the center section by gluing the doublers to the correct side of the ribs (the ribs shown in the photo are for the **right** side).

❏ ❏ 5. Cut out the balsa from the ribs within the open area of the ply doublers to accommodate the landing gear rails.

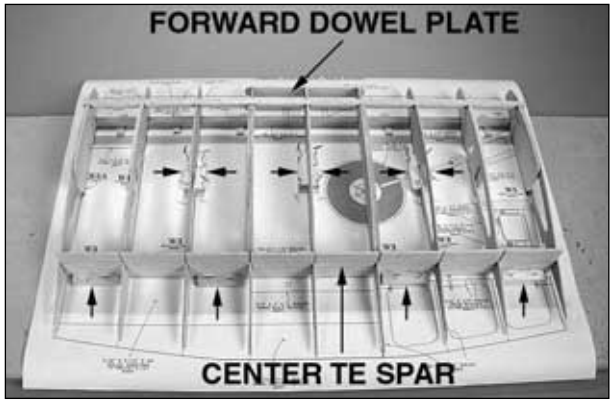
❏ 6. Repeat the procedure, but this time, make a set of landing gear ribs for the **left** side of the center section being **certain** to glue the doublers to the correct sides of the ribs as indicated on the wing plan.

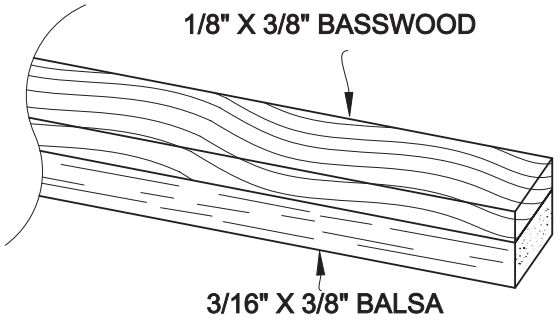
Frame the center section



❏ 1. If building flaps, use a straightedge and a hobby knife to cut **partway** through one side of die-cut 3/32" [2.4mm] balsa wing ribs **W3**, **W4**, **W5**, **W6**, **W7** & **W8** from the top of the notch to the tip as shown. Later, the bottom of the ribs will be removed to accommodate the flaps.

Refer to this photo for the following six steps.



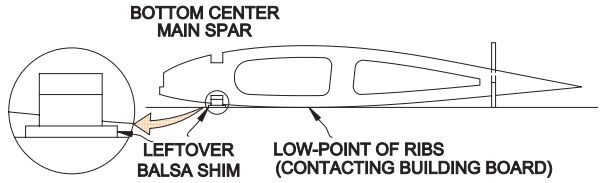


❏ 2. Cut two 1/8" x 3/8" x 36" [3.2 x 9.5 x 914mm] basswood sticks and two 3/16" x 3/8" x 24" [4.8 x 9.5 x 610mm] balsa sticks to a length of 23-13/16" [604.8mm]. Make a **top** and **bottom center main spar** by gluing a basswood stick to the balsa stick. Save the leftover basswood for the outer panels.

❏ 3. **Without using any glue until instructed to do so**, join ribs W1 through W5 to the die-cut 1/8" [3.2mm] balsa **center TE spar (CTES)**. Fit one of the center main spars prepared earlier to the notches in the **bottom** of the ribs. The balsa side of the center main spar faces downward.

❏ 4. Join the die-cut 1/8" [3.2mm] plywood **forward dowel plate (FDP)** to ribs W1 & W2.

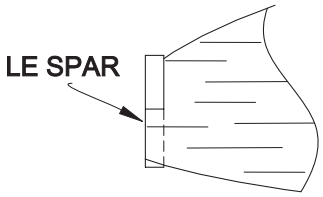
❏ 5. Position the assembly over the plan. Pin the center TE spar and the ribs over their locations on the plan. **Hint:** Instead of directly pinning the ribs and center TE spar to the plan, an easier and more secure method is to place 1/2" x 1/2" [13 x 13mm] (or similar size) balsa sticks (indicated by the small arrows in the photo) on both sides of the ribs and center TE spar and pin the sticks to the plan.

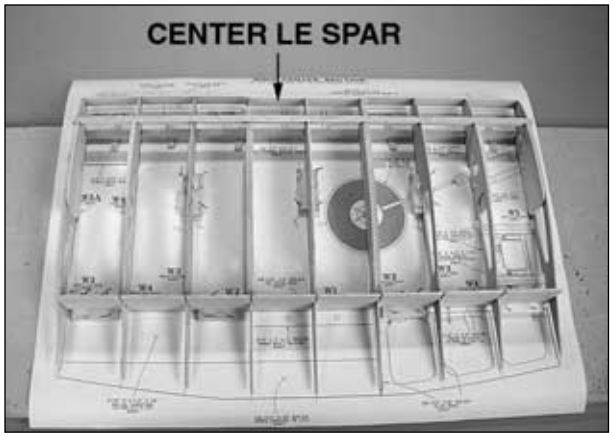


❏ 6. Make ***shims*** from leftover balsa to support bottom center main spar and push it up into the notches in the ribs. Be certain the low-point on the bottom of the ribs is contacting the plan. The **exact** thickness of the shims may vary from kit to kit, but the approximate thickness will be 1/8" [3.2mm].

❏ 7. Making certain the bottom of the ribs and the aft TE are **fully** contacting the plan, and that the ribs are pushed **all the way** down into the notches of the center TE spar, glue the ribs to the center TE spar. Pull the bottom center main spar tightly up into the notches in the ribs; then, making sure the bottom of the ribs are contacting the plan, glue the spar to the ribs.

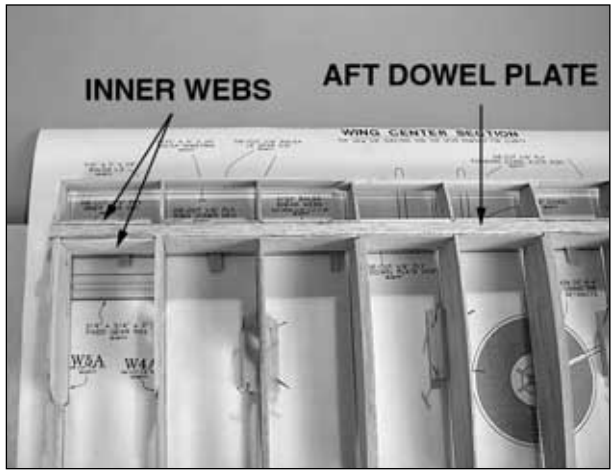
❏ 8. Glue the top center main spar into position with the balsa side up. Use a small square to make certain the W5 ribs on both ends of the center section are **vertical**.





❏ 9. Test fit, then glue the die-cut 1/8" [3.2mm] balsa **wing center LE spar (CLES)** to the assembly. Be certain the center LE spar is centered vertically on all the ribs.

Refer to this photo for the following three steps.



❏ 10. Glue both die-cut 1/8" [3.2mm] plywood **aft dowel plates (ADR)** to the top and bottom spars between ribs W1 and W2.

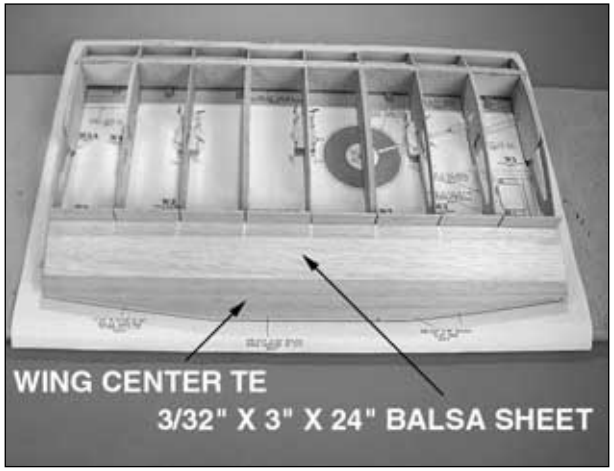
❏ 11. Of the 3/32" x 3" x 36" [2.4 x 76 x 914mm] balsa sheets included with this kit, one of them is **hard** and the rest are soft. Locate the hard balsa sheet. Cut the ten **shear webs** for the center section from the sheet, then glue them into position. Save the remainder of this sheet for the shear webs for the outer panels.

❏ 12. Use epoxy to glue four die-cut 1/8" [3.2mm] plywood **inner webs (IW)** to both the front and back of the main spars on both ends of the center section. Be certain to use enough epoxy for a secure bond, but don't use too much epoxy so as to interfere with the fit of the wing joiners that will be added later.

❏ 13. Sand the top center main spar, the center LE spar and the webs even with the top of the ribs.

❏ 14. Glue the die-cut 3/32" [2.4mm] balsa **center TE (WCTE)** to a 3/32" x 3" x 24" [2.4 x 76 x 610mm] balsa sheet. From now on this will be referred to as the **top TE sheet**.

❏ 15. Remove or relocate any T-pins that may become concealed after the top sheeting is glued into position. If using weights to hold the sheeting down, all the T-pins may be removed.



❏ 16. Sand the top TE sheet flat and even. Test fit and trim the sheet to fit the top of the wing against the center TE making sure it aligns with the TE indicated on the plan. Glue the top TE sheet into position.

❏ 17. Glue one of the 3/32" x 12" x 24" [2.4 x 305 x 610mm] balsa sheets prepared earlier to the top of the center section. The suggested method is to apply aliphatic resin to the top of all the ribs and spars and to the aft edge of the sheet where it contacts the center TE spar. Position the sheet and use weights to hold it down. Use medium CA to glue the front of the sheet to the top of the center LE spar. Allow the aliphatic resin to dry before proceeding.

❏ 18. Remove the center section from the building board. **Note:** Do not trim the bottom of the center TE spar from the bottom of the wing until instructed to do so. The center TE spar supports the section when joining the outer panels.

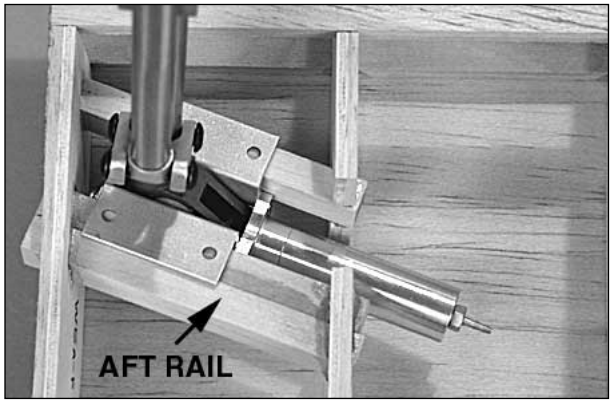
If building the wing with fixed landing gear, proceed to "Mount the fixed landing gear" on page 22.

Sea Fury Fact

The Sea Fury uses a Bristol Centaurus 18 cylinder, twin row, radial, air-cooled, supercharged engine. Max. power is 2,300 H.P. in full supercharger mode at maximum engine power altitude.
Engine oil tank capacity is 14 gallons with oil cooler. Exhaust pipe configuration in sliding grill provides thrust augmentation.

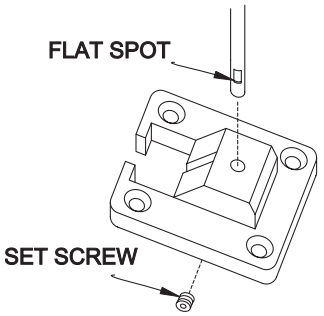
Mount the retracts

❏ ❏ R1. Cut two 3-5/8" [92mm] long **retract rails** from the 3/8" x 1/2" x 24" [9.5 x 12.7 x 610mm] **maple** stick (if installing the scale CJM retracts, cut **three** rails and glue two of them together to make a 3/4" x 1/2" x 3-5/8" [19.1 x 12.7 x 92mm] **aft rail**).

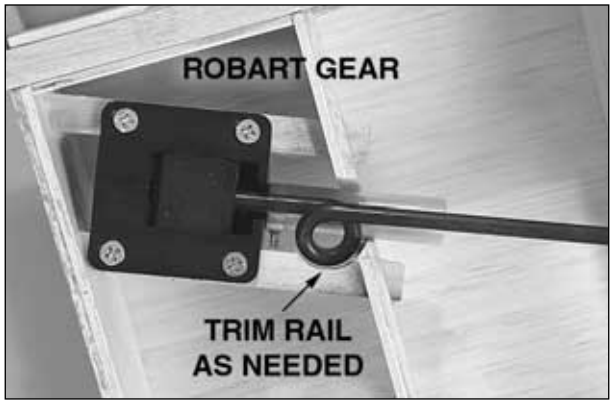


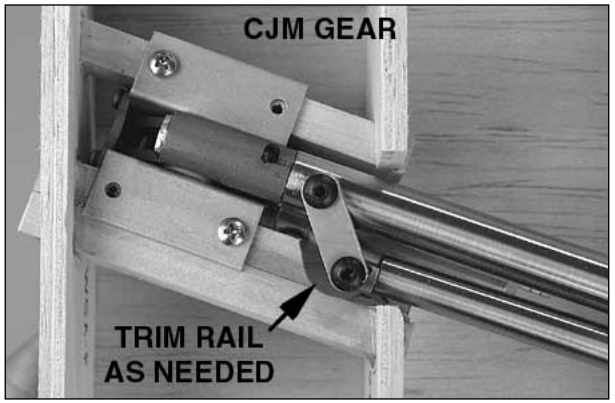
❏ ❏ R2. Test fit the rails into the openings in the ribs on the right side of the center section. If necessary, bevel the openings to accommodate the rails. Test fit one of the retracts between the rails to make certain it fits. Make adjustments if necessary.

❏ ❏ R3. Securely glue the retract rails into position with 30-minute epoxy. For additional strength, add Great Planes Pro Milled Fiberglass (GPMR6165). **Hint:** The outer ends of the rails are to be sanded at an angle flush with the end of the center section. It may be easier to do this **before** gluing the rails into position.



❏ ❏ R4. If installing Robart gear, file a flat spot on the end of the wire strut near the top for the set screw in the retract unit to lock onto. Mount the strut into the retract units and tighten the set screw.

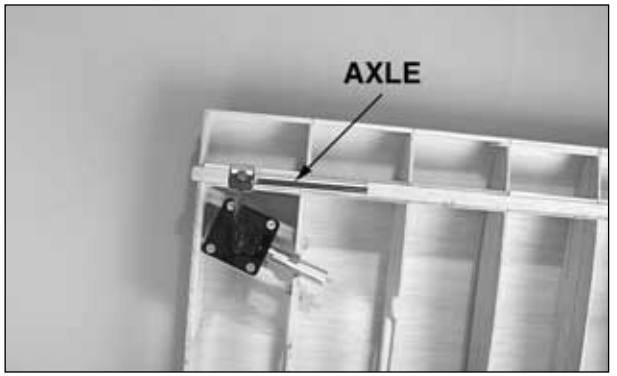




❏ ❏ R5. Position the retract unit between the rails. Mark the locations for the holes for the mounting screws. Drill appropriate size holes in the rails for the screws. If using #6 screws, drill 7/64" [2.8mm] holes. Use a rotary tool with a sanding drum to trim the aft rail to accommodate the coil in the strut.

Perform steps 6 & 7 only if installing the Robart gear.

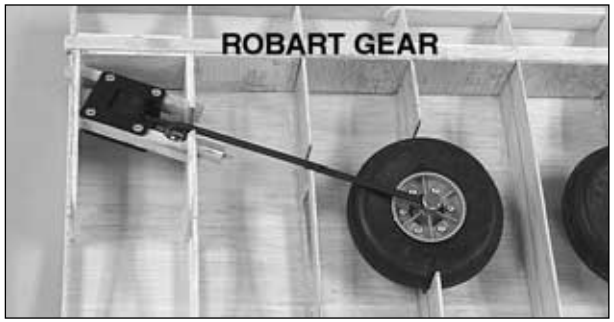
❏ ❏ R6. Cut the right landing gear strut to the correct length. (For the long-strut option, the scale distance from the wheel axle to the pivot point is 8" [203mm]. For the "short-strut" option, the distance from the wheel axle to the pivot point is 6" [152mm].)

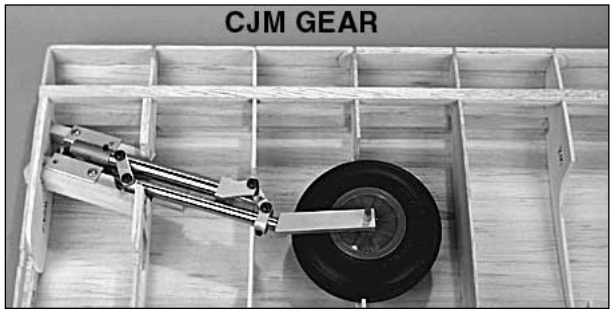


❏ ❏ R7. File a flat spot on the end of the strut for the set screw in the axle (not included, GPMQ4278). The flat spots must be positioned so the axles will be **parallel** with the main spars (as shown in the photo) when the set screw in the axle is tightened.

Perform this step only if installing CJM scale retracts.

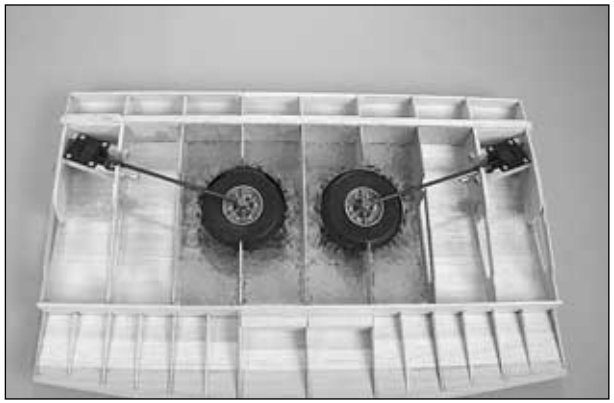
❏ ❏ R8. Position the landing gear strut in the landing gear cam (the cast aluminum part of the gear that pivots to extend and retract the gear) so the axle is parallel with the bottom main spar (though the photo in the preceding step is of the Robart gear, the same idea is illustrated). Tighten the set screw in the cam to lock the strut in this position. **Note:** Before the gear doors are mounted to the struts in step R10 on page 25, the struts must be **permanently** glued into the cams with JB Weld (epoxy specially formulated for bonding metal).



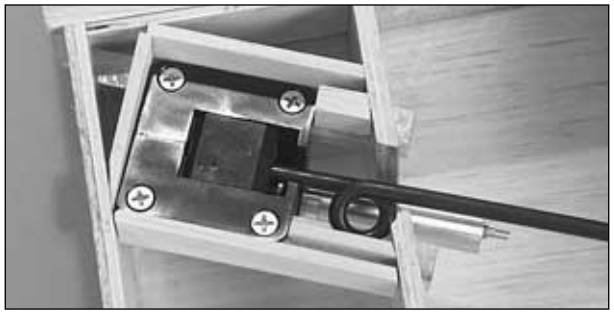


❏ ❏ R9. Mount a 4" [102mm] wheel (not included) to the axle with a 3/16" [4.8mm] wheel collar on both sides. (Only one collar is required for CJM gear.) Retract the wheels into the wing. Cut the ribs as necessary to accommodate the wheels. Be certain the retracts are able to fully lock in the retracted position.

❏ R10. Return to step two and mount the other retract the same way.



❏ R11. For the best appearance and durability, use 30-minute epoxy or finishing resin to apply 3/4 oz. glass cloth (HCAR5000) to the inside surface of the top sheeting between the ribs of the wheel wells. This will fuelproof and strengthen the exposed sheeting inside the wing.



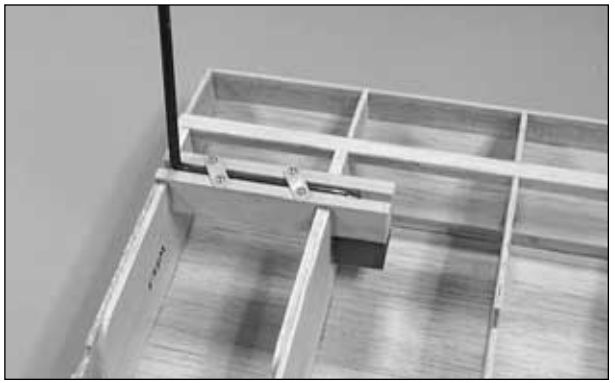
❏ R12. Sand the bottom main spar and center LE spar even with the bottom of the ribs. Glue pieces of leftover balsa to the landing gear rails to support the bottom sheeting after it is cut out for the retracts.

❏ R13. Paint the wheel area inside the wing with fuelproof paint. Best results will be achieved with an airbrush. If you are using a paint that only comes in a spray can (such as Top Flite LustreKote) and wish to use an airbrush, spray the paint through a tube into a cup. Allow LustreKote to stabilize in the cup for about an hour. Transfer the paint to the spray jar for airbrushing.

When finished mounting the retracts, proceed to "Sheet the bottom of the center section" on the next page.

Mount the fixed landing gear

Refer to this photo for the following three steps.



❏ F1. Use 30-minute epoxy to glue both 3/4" x 3/4" x 4" [19.1 x 19.1 x 102mm] grooved basswood **fixed landing gear rails** into the notches in ribs W4 & W5. After the epoxy hardens use another batch of 30-minute epoxy to glue both 3/4" x 3/4" x 7/8" [19.1 x 19.1 x 22.2mm] maple **torque blocks** to the rails and the ply doublers where shown on the plan. **Note:** Although the balsa shear webs and ply inner webs do not appear in the photo, they should already be installed in your model.

❏ F2. Drill 3/16" [4.8mm] holes through the rails and the torque blocks where shown on the plan for the fixed landing gear wires. Chamfer the opening of the holes to accommodate the gear, then test fit the gear.

❑ F3. Drill 1/16" [1.6mm] holes through the landing gear rails for the #2 x 1/2" [12.7mm] screws for the nylon landing gear straps. Temporarily secure the gear to the rails with the screws and straps.

Note: Mount the molded ABS wheel covers to the landing gear wires as shown on page xxxx for the retractable landing gear wires.

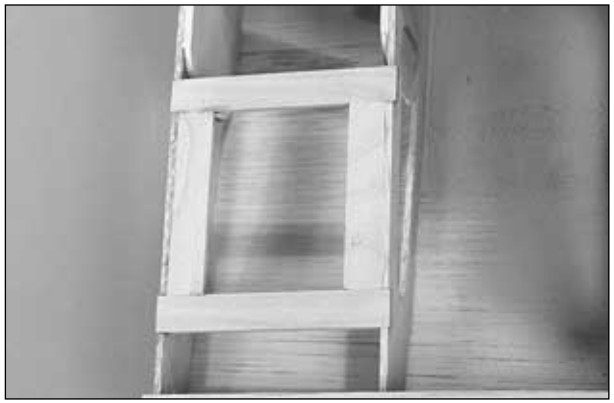
Sea Fury Fact

The Sea Fury was designed and built by Hawker Aircraft Ltd., Sutton Lane, Langley, Bucks, England.

Sheet the bottom of the center section

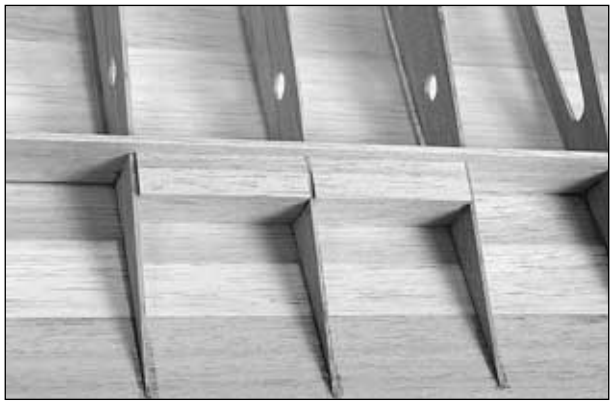
❑ 1. Cut a hole through the top sheeting where shown on the plan for the servo wires and retract gear air lines.

Refer to this photo for the following two steps.

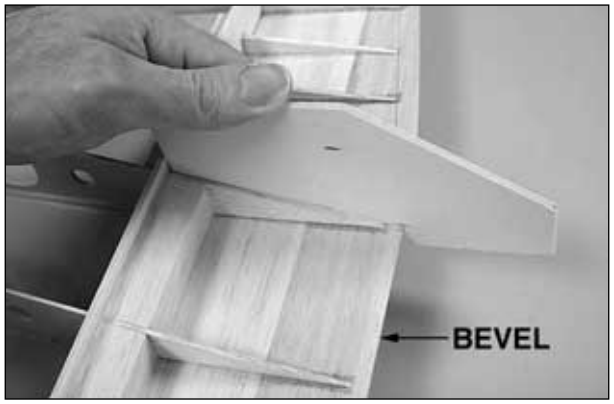


❑ 2. If building flaps, cut the **hatch supports** from the 1/8" x 1/2" x 30" [3.2 x 12.7 x 762mm] basswood stick, then glue them into position where shown. Sand the hatch supports even with the bottom of the ribs.

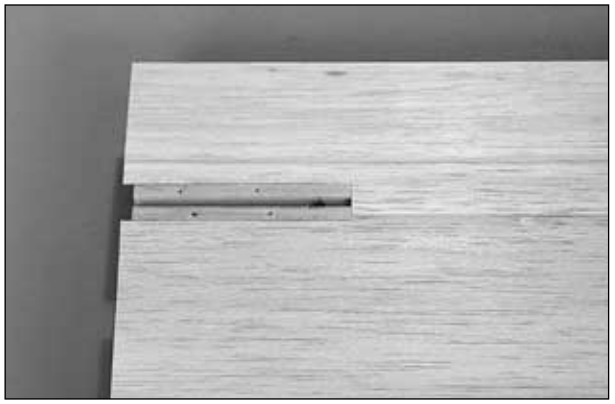
❑ 3. Cut the **flap hinge blocks** that go in the wing from the 3/8" x 3/8" x 30" [9.5 x 9.5 x 762mm] balsa stick. Glue the flap hinge blocks into position where shown on the plan. Be certain the hinge blocks align with the bottom of the ribs as shown in the cross-section.



❑ 4. Cut both **wing bolt blocks** to fit between ribs W1 and W2 from the 3/4" x 1" x 6" [19.1 x 25.4 x 152mm] balsa stick. Glue the wing bolt blocks to the center TE spar and the ribs.



❑ 5. Sand the wing bolt blocks even with the bottom of the ribs. Only between the W2 ribs, bevel the trailing edge of the top TE sheet to the same angle as the ribs. **Hint:** Use a piece of leftover plywood as a “fence” to keep from sanding past the #2 ribs.



❑ 6. Lay the wing upside-down on your flat workbench resting on the top sheeting and the center TE spar. Sheet the bottom of the wing with the 3/32" x 12" x 24" [2.4 x 305 x 610mm] balsa sheet prepared earlier. If building the wing with fixed gear, first cut slots in the sheeting to accommodate the landing gear rails as shown in the photo. The same as when sheeting the top of the wing, it is recommended that aliphatic resin be used, except for gluing the sheeting to the LE spar where medium CA is best. Do not glue the sheeting to the servo hatch supports. This will facilitate trimming the sheeting when fitting the hatches later.

❑ 7. Sheet the bottom of the wing over the wing bolt blocks between the W2 ribs and the center TE spar using a portion of the 3/32" x 6" x 24" [2.4 x 152 x 610mm] balsa sheet prepared earlier. Save the remainder of this sheet for the inner flaps (or inner flap sheeting if not building flaps). After sheeting the wing, **do not** trim the bottom of the center TE spar until instructed to do so (after the outer panels are joined to the center section).

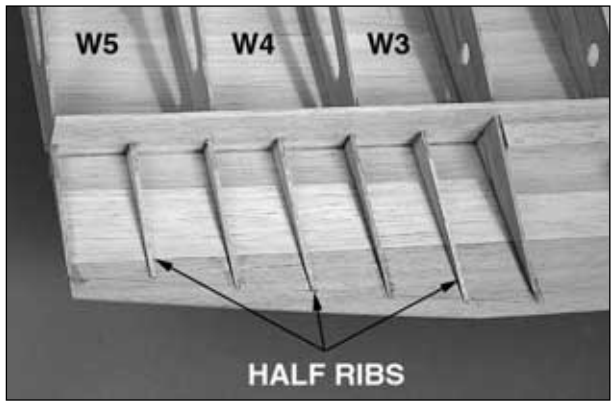
❑ 8. Use a long bar sander with 80-grit sandpaper to sand the top and bottom sheeting even with both ends of the center section and the center LE spar. Glue the 1/4" x 1" x 24" [6.4 x 25.4 x 610mm] balsa **leading edge** to the sheeting and LE spar. Trim the LE even with the sheeting and both ends of the center section, but do not final-shape until instructed to do so.

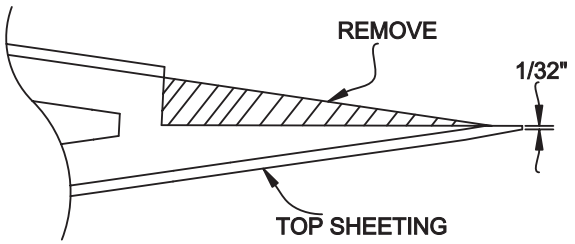
❑ 9. If **not** building flaps, sheet the bottom of the wing from the center TE spar aft using the remainder of the 3/32" x 6" x 24" [2.4 x 152 x 610mm] balsa sheet used to sheet between the W2 ribs.

If not building flaps, proceed to "Fit the retracts."

Build the inner flaps

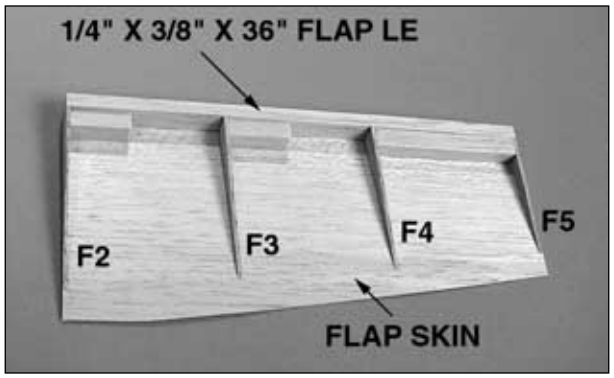
Build the right flap first so your progress will match the photos.





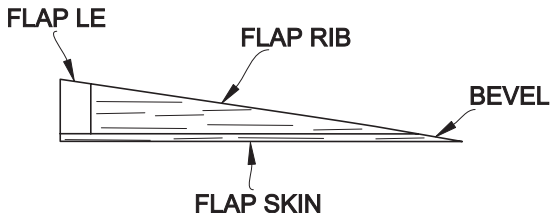
❑ ❑ 1. Cut and remove the lower portions of ribs W3, W4 & W5 along the lines partially cut earlier. Make **half-ribs** that fit between the wing ribs from leftover 3/32" [2.4mm] balsa. Glue the half-ribs into position. Sand the half ribs and the trimmed-down wing ribs even and sand the trailing edge of the wing sheeting on top of the wing down to a thickness of 1/32". (Though bottom of the wing in the photo is not sheeted, yours should be at this time.)

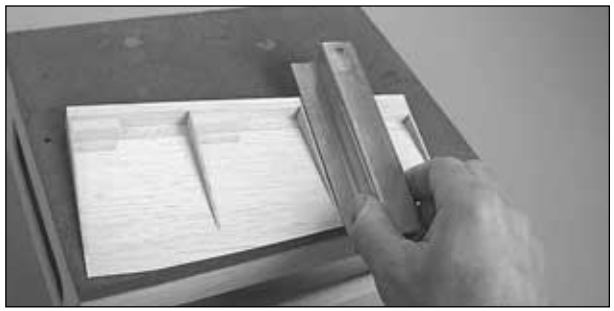
Refer to this photo for the following two steps.



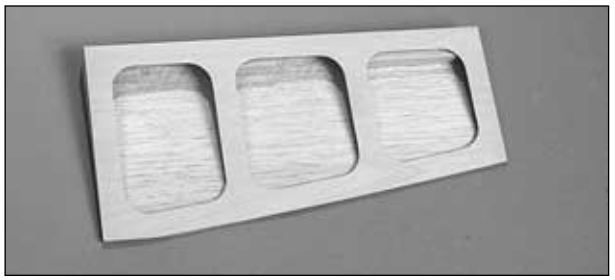
❑ ❑ 2. Use one of the die-cut 1/32" [.8mm] plywood **inner flap frames (IFF)** as a pattern to make a flap skin from the remainder of the 3/32" x 6" x 24" [2.4 x 152 x 610mm] balsa sheeting used for the bottom of the wing.

❑ ❑ 3. Cut the **flap LE** from the 1/4" x 1/2" x 36" [6.4 x 12.7 x 914mm] balsa stick and glue it to the top of the flap skin (save the remainder of the stick for the left inner flap and for the outer flaps). Glue the die-cut 1/16" [1.6mm] balsa **flap ribs F2** through **F5** to the flap skin and the flap LE.





❑ ❑ 4. Cut the hinge blocks that go into the flaps from the 3/8" x 3/8" x 30" [9.5 x 9.5 x 762mm] balsa stick leftover from the hinge blocks for the wing. Glue the hinge blocks to the flap. Use a bar sander with 80-grit sandpaper to sand the flap LE even with the tops of the flap ribs and bevel the TE of the flap skin to the same angle as the flap ribs.

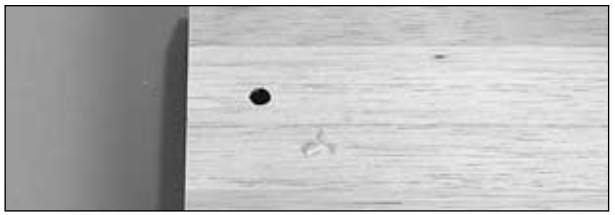


❑ ❑ 5. Glue the inner flap frame to the top of the flap. Test fit the flap to the wing. Sand the flap as necessary for a good fit.

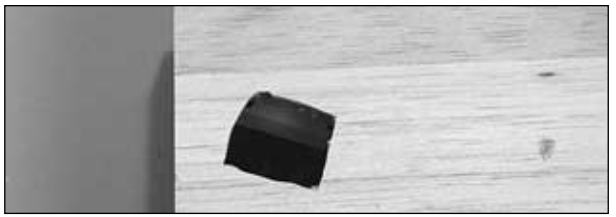
❑ 6. Build the left inner flap the same way.

If not installing retracts, proceed to "Mount the flap servos."

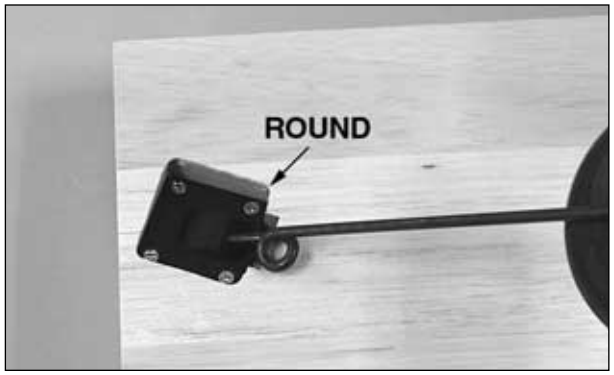
Fit the retracts



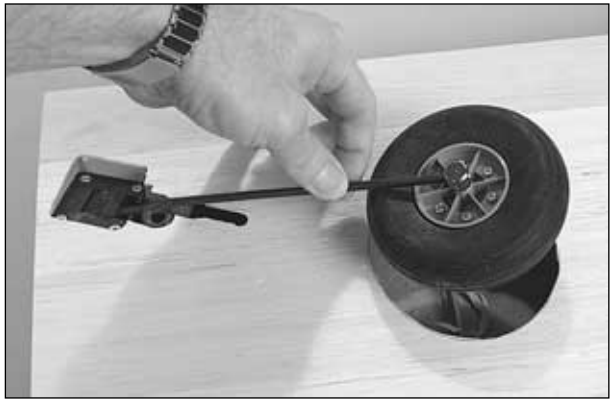
❑ ❑ R1. Cut a small hole in the bottom sheeting between the retract rails.



❑ ❑ R2. Carefully enlarge the hole until the retract rails and balsa supports can be seen.



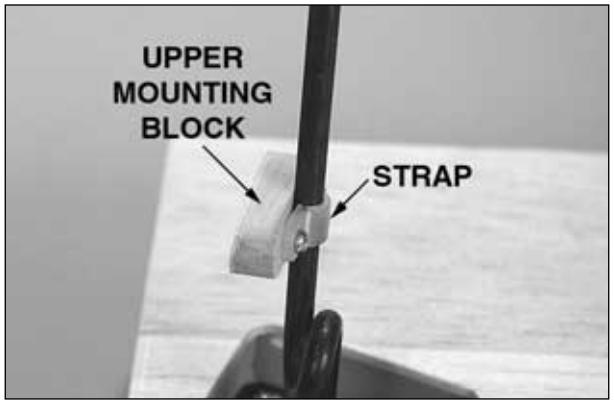
❑ ❑ R3. Neatly enlarge the opening just enough to fit the retract. Mount the retract to the rails. **Hint:** For a neat appearance, round the corners of the wing sheeting as in the photo.



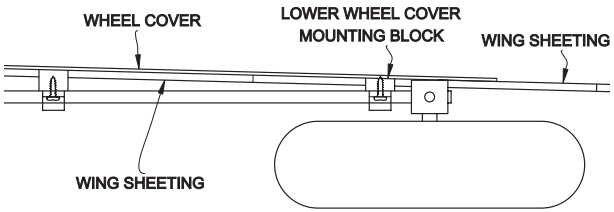
❑ ❑ R4. A little at a time, cut the opening in the bottom sheeting for the wheel and strut until the gear is able to fully retract into the wing. Be certain there is enough clearance on the aft edge of the opening to allow the gear to retract even if slightly bent back during a rough landing. Usually at least 1/4" [6mm] clearance is suggested. (There is a photo of the installed CJM gear on page 26.)

❑ R5. Use curved plastic scissors to cut out the molded ABS **left wheel cover**. If building the wing with short struts, trim the wheel covers to fit the struts. (One of the wheel covers can be seen in following photos.)

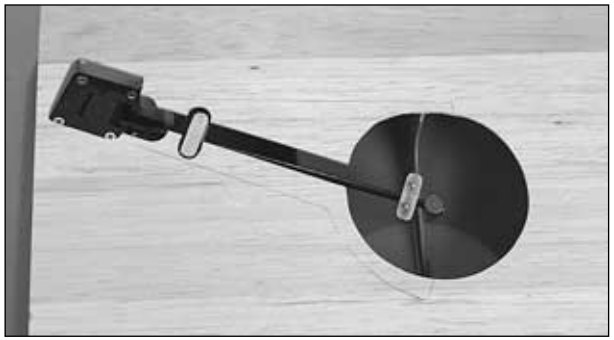
Steps R6 through R9 are for the Robart gear. If installing CJM gear, go to step R10.



❑ ❑ R6. Make two 1-1/8" [28.6mm] long **wheel cover mounting blocks** from the 1/4" x 3/8" x 6" [6.4 x 9.5 x 152mm] basswood stick. Drill 1/16" [1.6mm] holes through the mounting blocks, then mount them to the strut with the nylon straps and #2 x 3/8" [9.5mm] screws. The top block should be about 1" [25mm] below the top of the wheel cover and the bottom block should be about 1" [25mm] above the bottom of the wheel cover. (The upper mounting block is shown in the photo.)



❑ ❑ R7. Trim the mounting blocks to the correct thickness, so that when the wheel cover is attached to the blocks (by gluing with CA later on), the wheel covers will contact the bottom of the wing when the wheels are retracted. On the model shown in this manual, the upper mounting block required additional balsa to build it up to the correct thickness. **Note:** The thickness of the lower blocks depends upon how far inside the wing the landing gear wire is when the gear is retracted. If necessary, remove the landing gear wire and bend it in a vice until the required thickness of the lower block is approximately 1/4" [6mm].

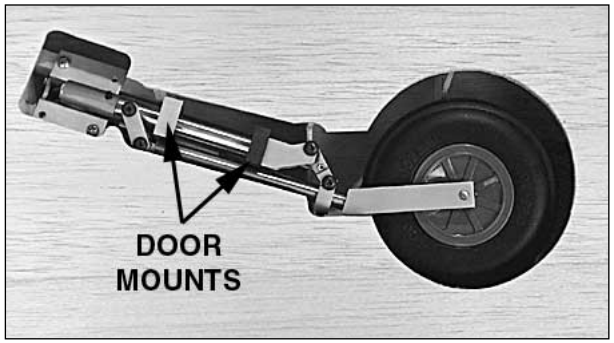


❑ ❑ R8. Trim the bottom wing sheeting as necessary to accommodate the upper mounting block.

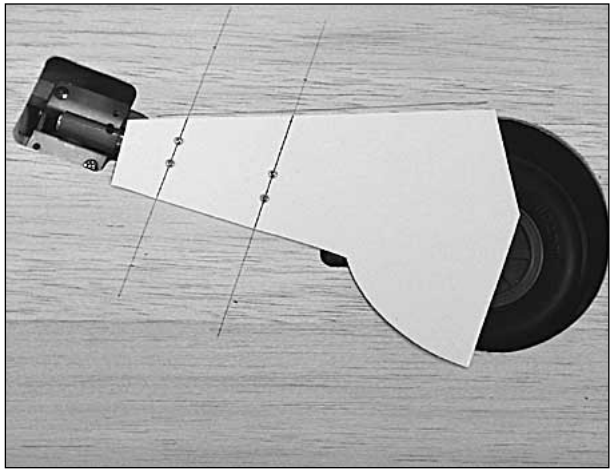
❑ ❑ R9. Thoroughly sand the wheel cover so glue will adhere. Glue the wheel cover to the mounting blocks with medium CA.

Propeller:
Hydraulically operated, constant speed, left-hand rotating, tractor Rotol propeller. 12' 9" [3.99m] diameter, five duralumin blades with pitch from 29 degrees to 64 degrees.

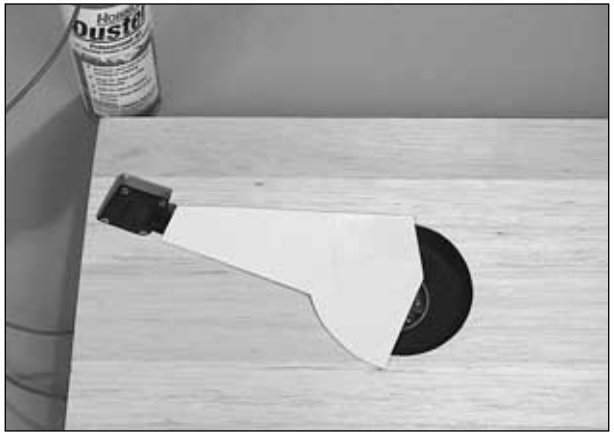
Perform steps R10 and R11 only if installing CJM gear.



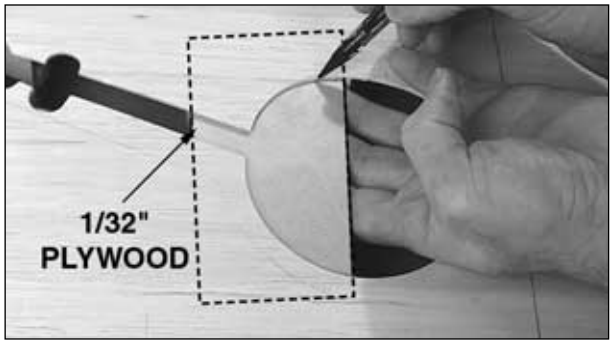
❏ ❏ R10. At this time the struts must be permanently glued into the cams with JB Weld metal bonding epoxy. Position two plastic landing gear door mounts (included with the CJM Top Flite Sea Fury scale gear) on the strut so the outer door mounting surface of the mounts is parallel with the bottom of the wing when the gear is retracted. Use thin CA to glue the door mounts to the struts. If necessary, glue strips of hard balsa to the mounts, then align with the bottom surface of the wing by sanding flush so the gear doors will fit the bottom of the wing when the landing gear is retracted. As can be seen in the photo, only the top mount on this model required building up with balsa.



❏ ❏ R11. Use a ballpoint pen and a straightedge to mark alignment lines on the bottom of the wing across the gear door mounts. Position the gear door on the bottom of the wing, then drill 1/16" holes through the doors and mounts. Mount the gear doors to the door mounts using #2 x 3/8" [9.5mm] screws included with this kit. Glue a strip of leftover 1/8" [3.2mm] balsa to the inside of the gear door to add rigidity.



❏ ❏ R12. Connect the air lines to the air cylinder on the retract. Use a retract air pump or a can of compressed air such as Hobbico® Duster,™ (HCAR5500) to retract and extend the gear. Check the fit of the wheel cover to the wing when the wheel is retracted and fully locked. Make adjustments to the height and positioning of the mounting blocks so the wheel covers fit well.

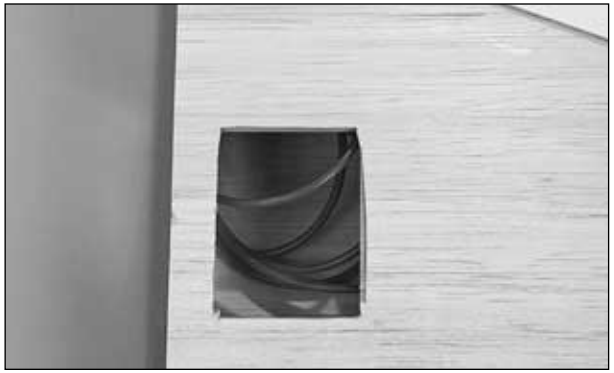


❏ ❏ R13. **Optional:** Cut two 2-1/4" x 5-1/2" [57 x 140mm] sheets from a 1/32" [.8mm] plywood sheet (not included). Place one of the sheets in one-half of the opening in the wing for the wheel and draw the outline of the cutout onto the ply sheet. Do the same for the other ply sheets in the other side of the wheel opening. Cut the sheets along the line, then glue them to the bottom sheeting inside the wing. This greatly strengthens the wing sheeting around the edges of the wheel opening.

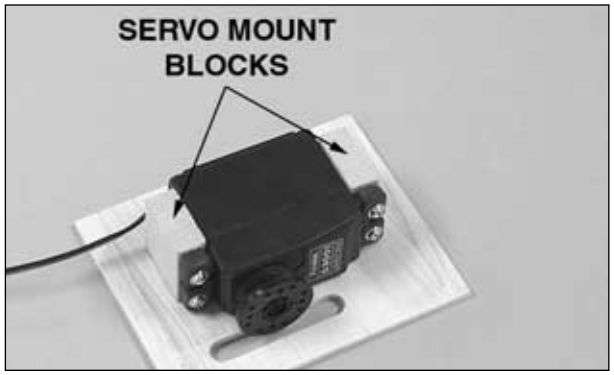
❏ R14. Return to step 1 and mount the other retract the same way.

If not building flaps, proceed to "Build the outer wing panels."

Mount the flap servos

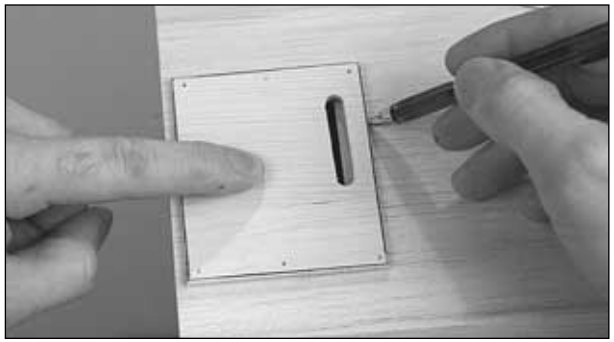


❏ ❏ 1. Cut a hole in the bottom sheeting along the inside edges of the hatch supports.

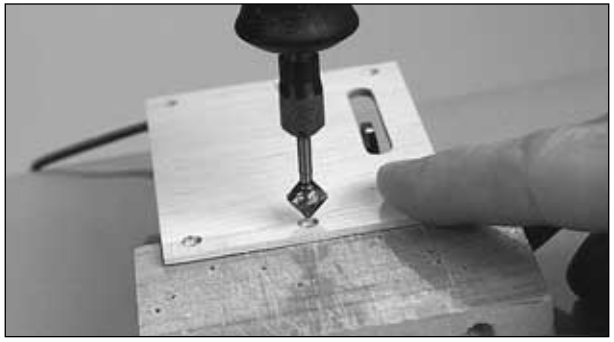


❏ ❏ 2. Drill 1/16" [1.6mm] holes in two 5/16" x 3/4" x 7/8" [7.9 x 19.1 x 22.2mm] basswood **servo mount blocks** and mount the aileron servo to the blocks using the screws that came with the servo. Glue the servo mount blocks to a die-cut 1/8" [3.2mm] plywood **servo hatch** with 30-minute epoxy (be certain the servo is positioned on the hatch as shown on the plan for the side of the center section you are working on, and that the servo arm is centered in the opening in the hatch). **Note:** The basswood servo mount blocks are porous and rapidly absorb epoxy. Apply a few coats of epoxy to the blocks and wait a few minutes between coats to let it soak in before mating the blocks to the hatch.

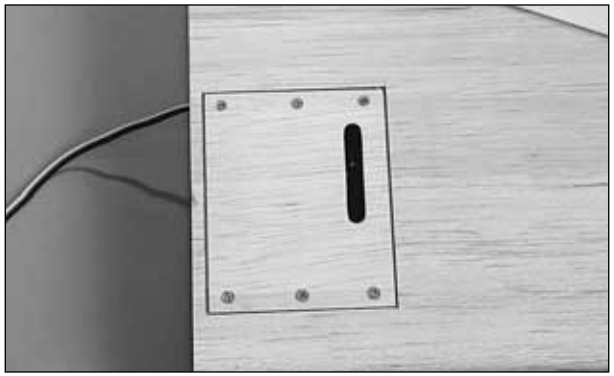
❏ ❏ 3. After the epoxy has hardened, remove the screws that mount the servos to the blocks. Apply a few drops of thin CA to the holes and allow to harden. Remount the servo to the blocks.



❏ ❏ 4. Place the hatch (with the servo) over the hatch supports on the wing. Securely holding the hatch in position, drill six 1/16" [1.6mm] holes through the punchmarks in the hatch and the hatch supports. Without moving the hatch, use a ballpoint pen to draw the outline of the hatch directly onto the sheeting. Remove the hatch.



❏ ❏ 5. Enlarge the holes **in the hatch only** with a 3/32" [2.4mm] drill. Countersink the holes in the hatch for the #2 x 3/8" [9.5mm] flathead hatch mounting screws. **Hint:** Use a Dremel #178 cutting bit to countersink the holes.



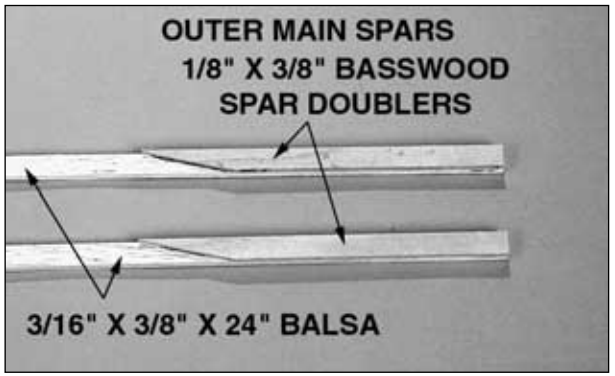
❏ ❏ 6. Add a few drops of thin CA to the holes in the hatch supports for the hatch mounting screws and allow to fully harden. Mount the hatch with the screws.

❏ 7. Return to step one and mount the other flap hatch the same way. Make certain the hatches are positioned as shown on the wing plan.

This is all that can be done on the center section until the outer panels are completed and joined.

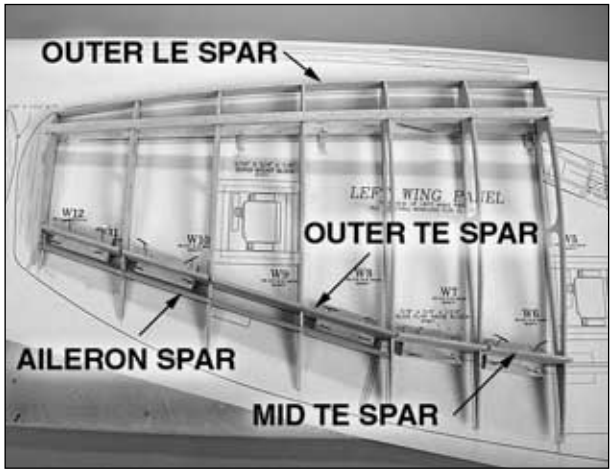
Build the outer wing panels

❏ 1. Build the **left** outer panel first. Cut the **left** wing panel plan from the wing plan and place it over your flat building board. Cover the plan with Plan Protector so glue will not adhere.



❏ ❏ 2. Make two **spar doublers** as shown on the plan from the two 1/8" x 3/8" [3.2 x 9.5mm] basswood sticks leftover from the center section. Glue each spar doubler to a 3/16" x 3/8" x 24" [4.8 x 9.5 x 610mm] balsa stick as shown in the photo, to make the **top** and **bottom outer main spars**. Cut the spars to a length of 19-3/4" [502mm].

Refer to this photo for the following seven steps.



❏ ❏ 3. Using care, widen the notches in one set of die-cut 3/32" [2.4mm] balsa wing ribs **W6** through

W12 and in the die-cut 1/8" [3.2mm] balsa **mid TE spar (MTES)**, the **outer TE spar (OTES)** and the **aileron spar (AS)** so they can be joined together at the angle shown on the plan.

❑ ❑ 4. Join the ribs to the mid TE spar, outer TE spar and the aileron spar. Fit one of the outer main spars into the notches in the bottom of the ribs. Place the assembly over the plan. Use T-pins to hold the spars to the building board (or use the same balsa sticks used on the center section to hold the spars to the plan).

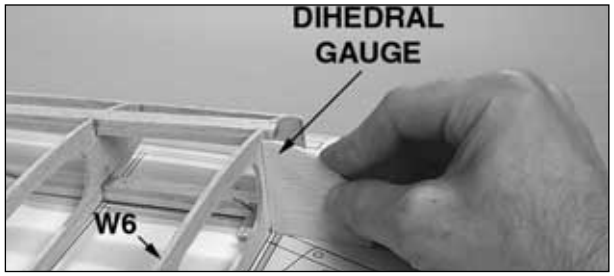
❑ ❑ 5. The same as was done for the bottom main spar of the center section, make shims from leftover balsa to raise the bottom main spar of the outer panel up into the notches in the ribs, but be certain the ribs remain in contact with the plan. Due to the taper of the wing, the shims nearer the root of the wing will be thicker than the shims nearer the tip.

❑ ❑ 6. With the shims underneath, pin the bottom outer main spar to the building board.

❑ ❑ 7. Glue all ribs **except rib W6** to the TE spars and the bottom outer main spar. Be certain the ribs, **especially** rib W12 at the wing tip, are vertical.

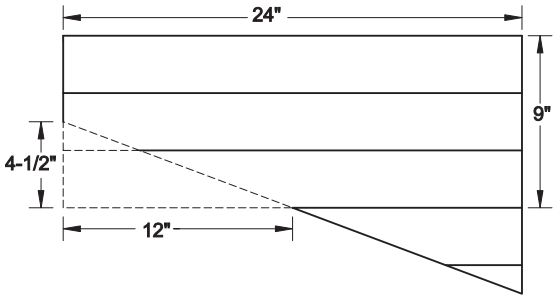
❑ ❑ 8. Making certain the ribs remain vertical, glue the top outer main spar to ribs W7 through W12.

❑ ❑ 9. Join the die-cut 1/8" [3.2mm] balsa **outer LE spar (OLES)** to the assembly and glue it to ribs W7 through W12.

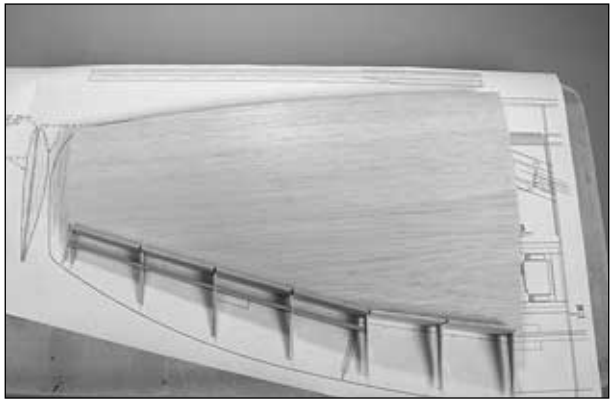


❑ ❑ 10. Use the die-cut 1/8" [3.2mm] plywood **dihedral gauge (DG)** to set rib W6 at the correct angle. Holding W6 at the correct angle, glue it to the rest of the assembly.

❑ ❑ 11. Use a razor plane followed by a bar sander with 80-grit sandpaper to shape the top main spar and the LE spar even with the top of the ribs.

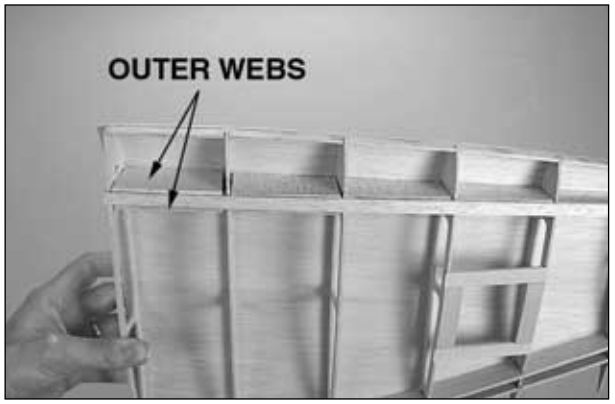


❑ ❑ 12. Trim one of the 3/32" x 9" x 24" [2.4 x 229 x 610mm] balsa sheets prepared earlier as shown in the sketch. Glue the cut-off piece back to the sheet as shown. After the glue dries sand the sheet flat. This is the **top** wing skin.



❑ ❑ 13. Trim the top wing skin to fit the wing. Remove or relocate any T-pins that will be concealed under the top wing skin. Glue the skin into position.

❑ ❑ 14. Remove the wing panel from the building board.



❑ ❑ 15. Use 30-minute epoxy to glue two die-cut 1/8" [3.2mm] plywood **outer webs (OW)** to the front and back of the top and bottom main spars. The same as when gluing the inner webs to the center section, use enough epoxy for a secure bond, but don't use too much epoxy so that it interferes with the fit of the wing joiners later on. Cut the four shear webs from the 3/32" x 3" [2.4 x 76mm] hard balsa sheet used for the shear webs of the center section. Glue the shear webs into position where shown on the plan.

❑ ❑ 16. Cut the **hatch supports** for the ailerons from the 1/8" x 1/2" x 30" [3.2 x 12.7 x 762mm] basswood stick. Glue the hatch supports into position, then sand them even with the bottom of the ribs.

❑ ❑ 17. If building flaps, use the remainder of the 3/8" x 3/8" x 30" [9.5 x 9.5 x 762mm] balsa stick (used for the flap hinge blocks for the center section) to make the **flap hinge blocks** for the outer panel. Glue the hinge blocks into position. Remember that the hinge blocks are to be even with the **bottom** of the ribs.

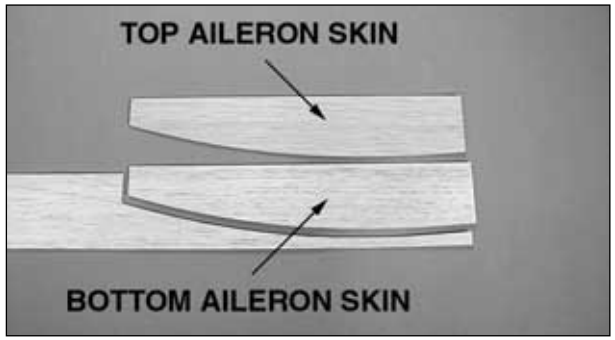
❑ ❑ 18. Sand the bottom main spar and the bottom of the outer LE spar even with the bottom of the ribs. Prepare a bottom wing skin the same as the top wing skin, then sheet the bottom of the wing. Do not glue the bottom skin to the hatch supports.

❑ ❑ 19. Trim the top and bottom sheeting even with both ends of the panel and the outer LE spar. Trim the **bottom** of the mid and outer TE spars even with the **bottom** sheeting. Trim the bottom of the aileron spar even with the bottom of the ribs.

❑ ❑ 20. Glue the 1/4" x 1" x 24" [6.4 x 25.4 x 610mm] **leading edge** to the LE spar and wing sheeting. Shape the LE to match the wing, but do not round until instructed to do so.

❑ 21. Cut the **right** wing panel plan from the wing plan and place it over the building board. Cover the plan with Plan Protector and return to step 2 and build the right wing panel.

Build the ailerons

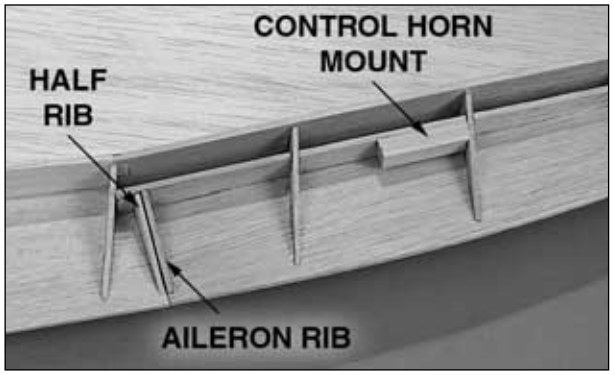


❑ ❑ 1. Build the **left** aileron first. Make a **bottom aileron skin** from a 3/32" x 3" x 24" [2.4 x 76 x 610mm] balsa sheet using one of the die-cut 3/32" [2.4mm] balsa **top aileron skins (TAS)** as a pattern.

❑ ❑ 2. Glue together both parts of the die-cut 3/32" [2.4mm] balsa **outer flap skin (OFS)**. Sand both sides of the flap skin flat. True the tip end by sanding straight. Place the skin over its location on the wing. Carefully examining the plan, note which end of the skin is the tip and which end is the root (they may easily be confused). Sand the **inside** of the outer flap skin smooth for painting later.

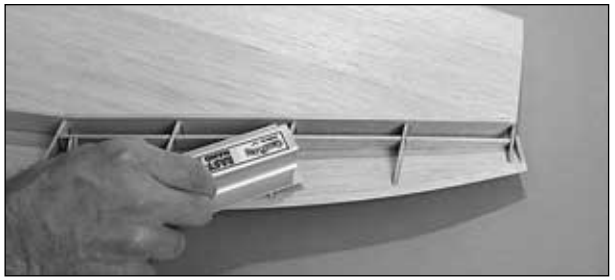
❑ ❑ 3. Test fit the outer flap skin to the **top** of the wing. If necessary, trim the front of the skin so the TE will be even with the aileron skin. Glue the flap skin into position.

❑ ❑ 4. Trim the top of the aileron spar even with the tops of the ribs. Glue the **top** aileron skin into position on the top of the aileron. Note that the skin extends 1/8" [3.2mm] beyond rib W12.

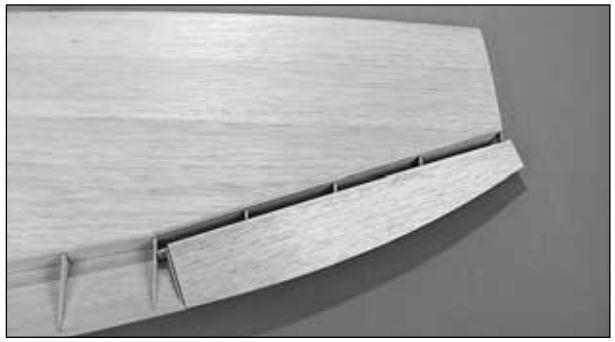


❑ ❑ 5. Glue the die-cut 3/32" [2.4mm] balsa **aileron rib (AF)** to the aileron as shown. Make a **half-rib** for the end of the outer flap skin from leftover 3/32" [2.4mm] balsa and glue it to the end of the flap with a 1/16" [1.6mm] gap between the aileron rib. Cut the **control horn mount** from leftover 3/8" x 3/8" [9.5 x 9.5mm] balsa and glue it into position.

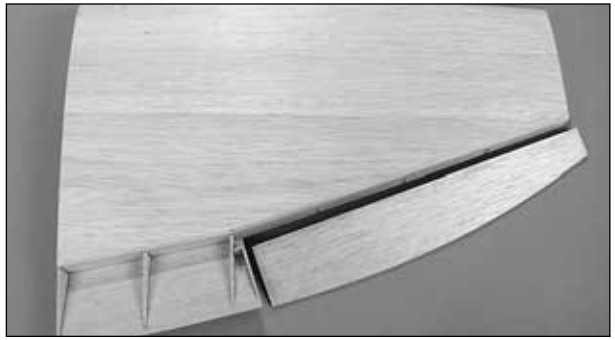
❑ ❑ 6. Make the aileron **tip rib** from leftover 1/8" [3.2mm] balsa and glue it into position.



❑ ❑ 7. Using the aileron ribs as a guide, use a bar sander with 80-grit sandpaper to bevel the TE of the top aileron skin.



❑ ❑ 8. Glue the bottom aileron skin to the top aileron skin with medium or thick CA. Be certain to use plenty of CA along the TE to ensure a good bond and to increase the rigidity of the TE.



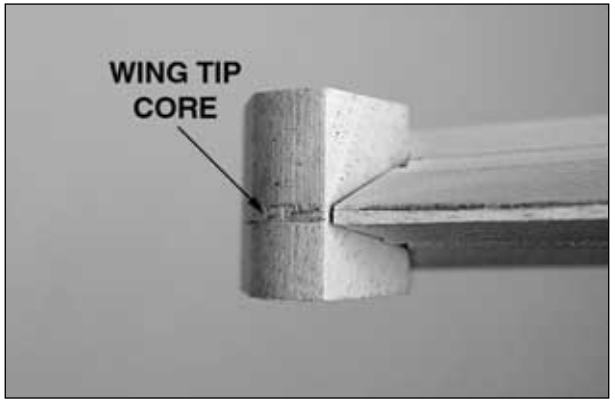
❑ ❑ 9. Use a razor saw to cut the aileron from the wing. Trim the ribs even with the outer TE spar on the wing, and the aileron spar. Finally, trim the top of the mid and outer TE spars even with the top sheeting.

❑ ❑ 10. Cut the **aileron LE** and the **outer wing TE** from the 1/4" x 1" x 30" [6.4 x 25.4 x 762mm] balsa stick. Glue both parts to the aileron and wing respectively.

❑ ❑ 11. Shape the aileron LE even with the aileron and shape the outer TE even with the wing.

❑ ❑ 12. Tack glue the aileron to the wing. The aileron and wing should already match up well, but sand where necessary for a seamless transition.

❑ ❑ 13. The same as the stab and fin tips, make the **wing tip** by gluing a die-cut 3/32" [2.4mm] balsa **wing tip core (WTC)** between the wing tip **top** cut from the 3/4" x 1-1/2" x 18" [19 x 38 x 457mm] balsa sheet and the wing top **bottom** cut from the 1/2" x 1-1/2" x 18" [13 x 38 x 457mm] balsa sheet. Be certain the 1/2" [12.7mm] sheet is on the **bottom**.



❑ ❑ 14. Glue the wing tip to the end of the wing panel making certain the front of the core aligns with the leading edge and that the back of the core aligns with the TE of the aileron.

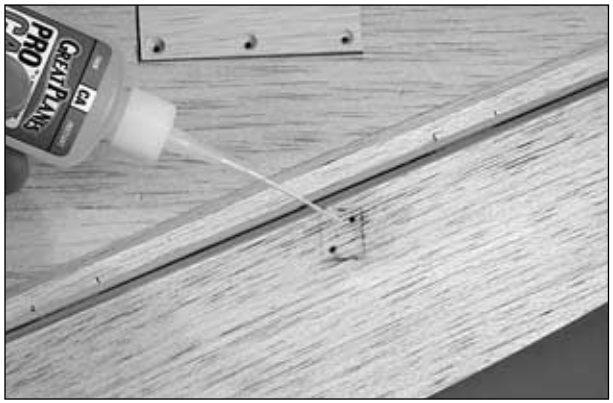
❑ ❑ 15. Sand the wing tip even with the wing, then round the corners.

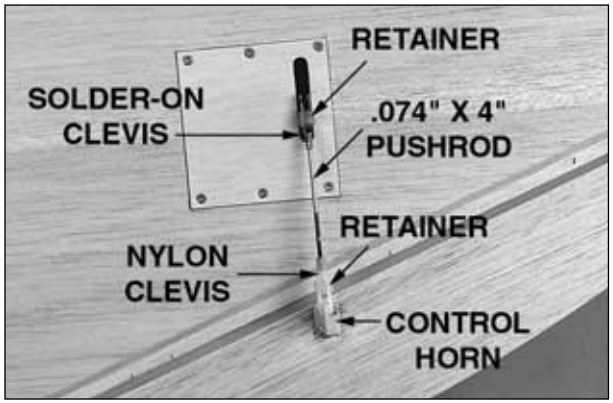
❑ ❑ 16. Carefully "break" the aileron free from the wing.

❑ 17. Fill the space between the wing tip and the wing with leftover balsa or balsa filler.

❑ ❑ 18. Cut the hinge slots in the aileron and the wing. Bevel the LE of the aileron for control throw. Cut four more 3/4" x 1" [19 x 25mm] CA hinges and test fit the aileron to the wing with the hinges. Be certain enough control throw can be achieved as indicated in the ***Control throws*** section on page 63.

❑ ❑ 19. The same as the flap hatches, mount the aileron servo to a die-cut 1/8" [3.2mm] plywood servo hatch. Mount the hatch to the wing. Be certain the servo and hatch you are working on are positioned the same as shown on the plan for the wing panel you are currently working on. Add a few drops of thin CA to the holes in the hatch supports for the hatch mounting screws.





❑ ❑ 20. Read "**How to Solder**" in the following **Hot Tip**, then connect the aileron servo to the aileron using the hardware shown on the plan. After you drill the 1/16" [1.6mm] holes for the #2 x 3/8" [9.5mm] screws that mount the control horn to the aileron, harden the area and the holes by applying several drops of thin CA. Allow the CA to harden before mounting the control horn.

HOT TIP

How to Solder

A. Use denatured alcohol or other solvent to remove residual oil from the pushrod.

B. Thoroughly roughen the end of the pushrod where it is to be soldered with coarse sandpaper.

C. Apply a few drops of soldering flux to the end of the pushrod. Simultaneously heat the end of the pushrod with a soldering iron or a torch while coating the end of the pushrod with silver solder (GPMR8070) by touching the solder to the pushrod (this process is known as "tinning"). The heat of the pushrod should melt the solder—not the flame of the torch or the soldering iron. **Note:** Do not use the acid flux that comes with silver solder for electrical soldering.

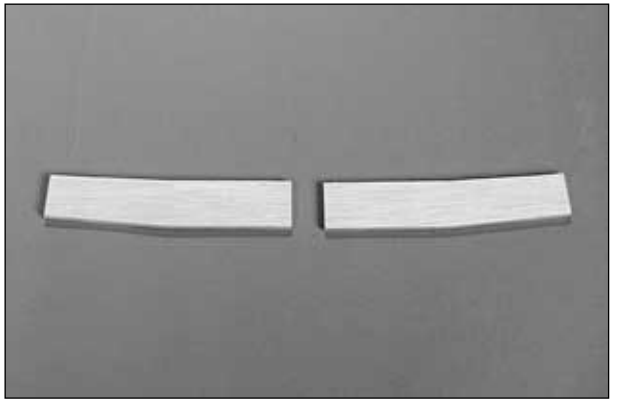
D. Join the clevis to the pushrod. Add another drop of flux. Heat the joint and add more solder if needed. The same as when tinning, the heat of the parts being soldered should melt the solder, thus allowing it to flow. Allow the joint to solidify **without disturbing it**. Avoid excess blobs, but make certain the joint is thoroughly soldered. The solder should be shiny, not rough. If necessary, heat the joint again and allow it to cool slowly without disturbing.

E. After the joint has solidified but is still **hot**, carefully use a cloth to wipe away residual soldering flux. **Important:** After the joint cools, coat the clevis with oil to protect it from rusting.

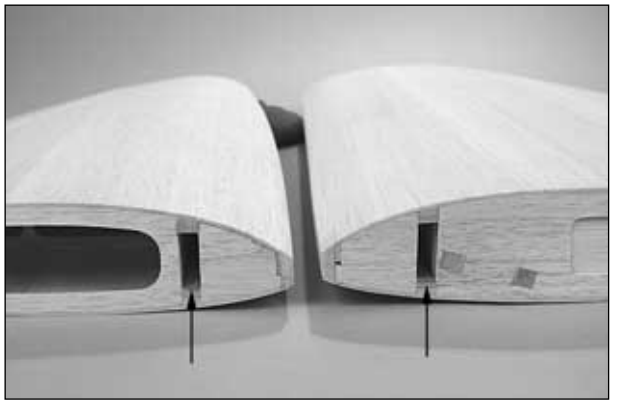
❑ 21. Return to step 1 and build the **right** aileron.

If building flaps, the flaps will be completed after the three wing panels have been joined.

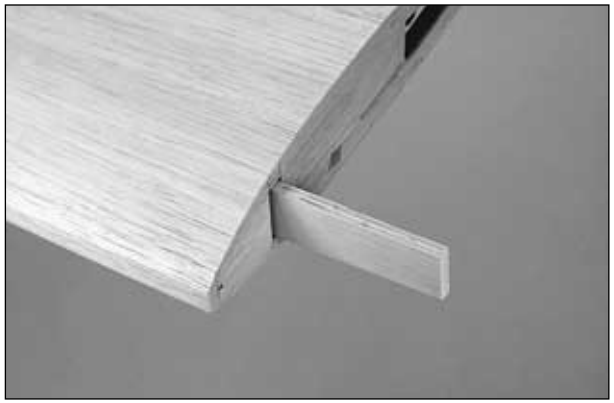
Join the wing



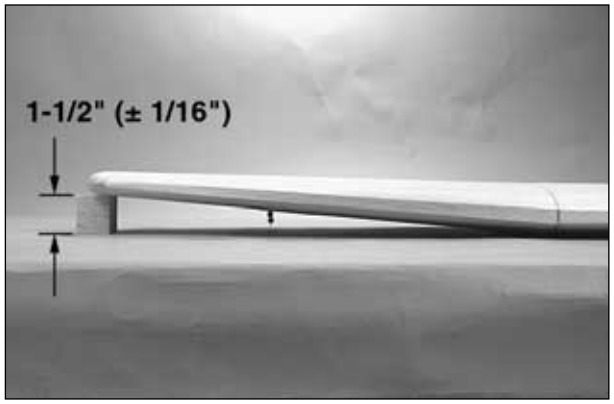
❑ 1. Glue both sets of die-cut 1/8" [3.2mm] plywood **wing joiners (WJ)** together.



❑ 2. Cut through rib W6 on the end of both outer wing panels between the top and bottom spars (where indicated by the arrows in the photo) and remove that area of balsa to accommodate the wing joiners. Do the same on both ends of the center section.



❏ 3. Test fit a wing joiner in each panel. Make adjustments to the joiners as necessary so the panels fit together well.



❏ 4. Lay the center section on your flat workbench and place weights on top of it to hold it down. Temporarily join the outer panels to the center section with the joiners. The outer panels have a dihedral angle of 5 degrees, which means both tips should be propped-up 1-1/2" [38mm] (plus or minus 1/16" [1.6mm]–as long as both panels are **equal**) under rib W12 to get the correct angle. If necessary, trim the wing joiners to achieve the correct dihedral angle.

❏ 5. Gather everything you will need to join the wing panels. Lay two or three paper towels on top of each other and cut them into 2" to 3" [50 to 75mm] squares (you'll find that these small squares are handy–not to mention a cost saver instead of wasting whole paper towels just to wipe up a small drop of glue). Also gather denatured alcohol, a few epoxy mixing cups, microballoons, a roll of masking tape, an epoxy brush and wax paper or plan protector to cover the workbench.

❏ 6. To provide adequate working time before the epoxy hardens, it is recommended to join one outer panel at a time to the center section. Separate the outer panels from the center section.

❏ 7. Mix at least 1/2 oz. of 30-minute epoxy with an equal amount of microballoons. Prepare a separate batch of 1/2 oz. of just 30-minute epoxy. Proceed immediately to the next step.

❏ 8. Thoroughly coat one half of one of the joiners and the inside of both joining panels with the epoxy/microballoons mixture. Insert the joiner into the respective wing panel, then coat the exposed end of the joiner with the rest of the epoxy and microballoons. Use an epoxy brush to coat the ribs on the ends of both joining panels with the 30-minute epoxy. Join the outer panel to the center panel and the joiner. Use the paper towel squares moistened with alcohol to wipe away excess epoxy. Tightly hold both wing panels together with as much masking tape as required. Lay the wing on the flat workbench and place weights on top of the center section. Prop up the tip 1-1/2" [38mm] to set the correct dihedral. Do not disturb the wing until the epoxy has fully hardened.

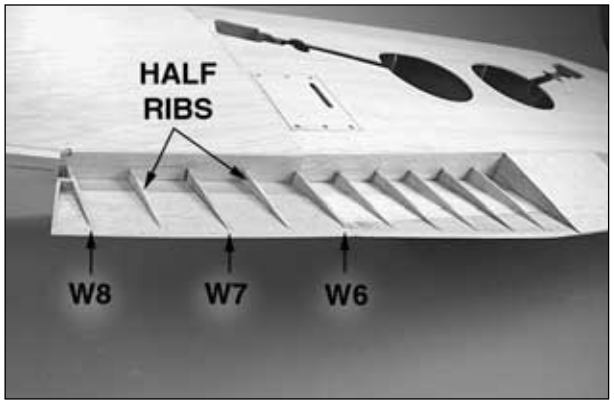
❏ 9. Join the other panel to the center section the same way.

❏ 10. Trim the bottom of the center TE spar even with the bottom sheeting.

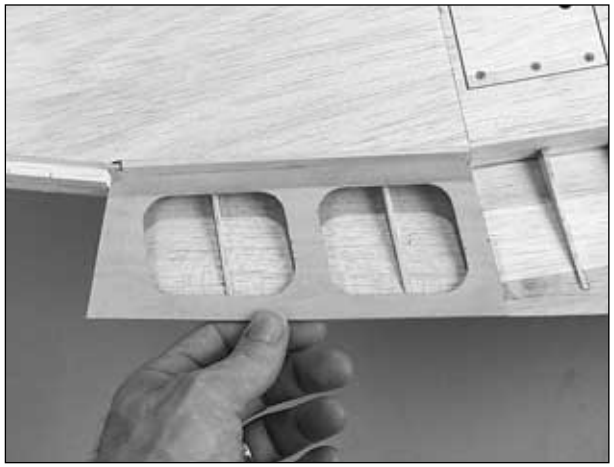
❏ 11. If not building working flaps, sheet the bottom of the flap area with leftover 3/32" [2.4mm] balsa. Proceed to "**BUILD THE FUSELAGE**" on page 35.

Build the outer flaps

Build the right flap first so your progress will match the photos.



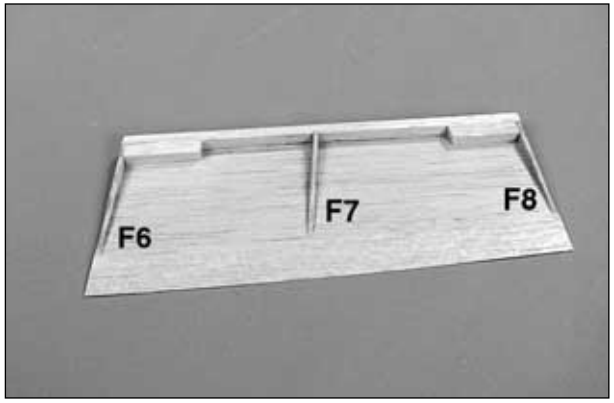
❏ ❏ 1. Remove the aileron from the wing. Trim the bottoms of the ribs W6, W7 & W8 along the lines marked earlier. Use leftover 3/32" [2.4mm] balsa to make the remaining two half-ribs and glue them into position. Sand all the ribs even with each other. Using the ribs as a guide, sand inside the TE of the top wing sheeting to a thickness of 1/32" [.8mm].



❑ ❑ 2. Test fit a die-cut 1/32" [.8mm] plywood **outer flap frame (OFF)** to the wing. If necessary, trim the outer flap frame to fit well.

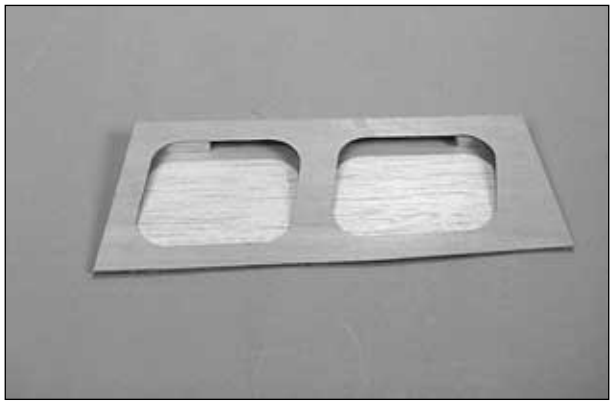
❑ ❑ 3. Use the outer flap frame as a pattern to make an outer **flap skin** from leftover 3/32" [2.4mm] balsa.

Refer to this photo for the following two steps.



❑ ❑ 4. Cut the **outer flap LE** from the remainder of the 1/4" x 1/2" [6.4 x 12.7mm] balsa stick leftover from the inner flap LE's. Glue the LE to the inside of the balsa flap skin. Glue the die-cut 1/16" [1.6mm] balsa **flap ribs F6**, **F7** & **F8** to the flap skin and the flap LE.

❑ ❑ 5. Cut the **outer flap hinge blocks** from leftover 3/8" x 3/8" [9.5 x 9.5mm] balsa and glue them into position. Use a bar sander with 80-grit sandpaper to sand the flap LE even with the tops of the flap ribs and sand the TE of the flap skin to a bevel that is also even with the flap ribs.



❑ ❑ 6. Glue the outer flap frame to the top of the flap.

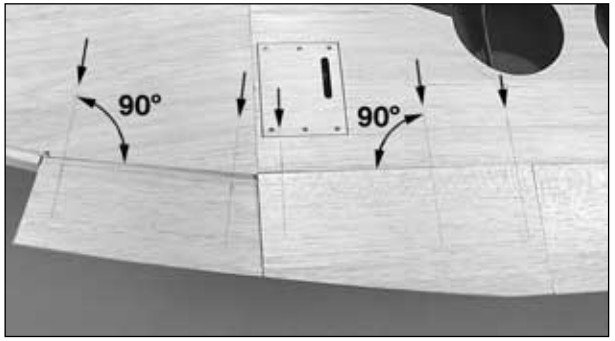
❑ 7. Return to step 1 and build the left outer flap the same way.

Sea Fury Fact

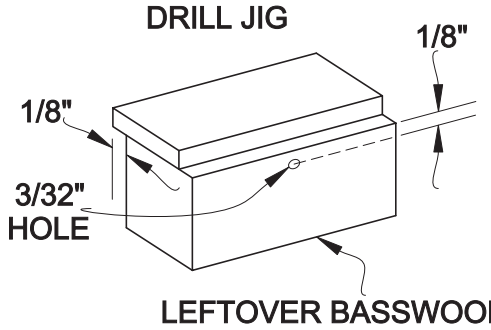
In addition to a catapult takeoff on aircraft carriers, the Sea Fury also featured rocket-assist takeoff with the installation of six electrically-fired rocket motors. The motors were attached to a frame mounted to the underside of the fuselage aft of the main gear doors.

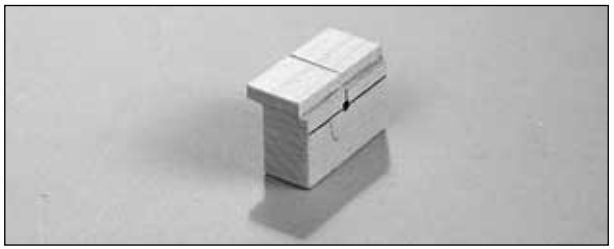
Hinge the flaps

Start with the **right** side.

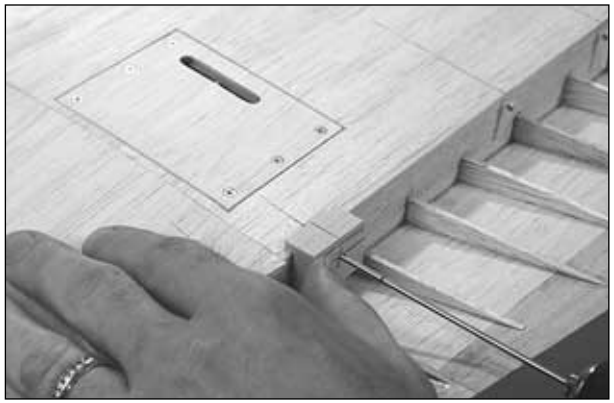


❑ ❑ 1. Use a straightedge and a ballpoint pen to lightly draw reference lines (indicated by arrows in the photo) across the bottom of the wing and flaps over the hinge blocks. Be certain the lines are perpendicular to the TE spars.





❑ ❑ 2. Make a **drill jig** by drilling a 3/32" [2.4mm] hole through a leftover basswood stick 1/8" [3.2mm] from one edge. Glue another piece of leftover basswood to the top of the block, extending 1/8" [3.2mm] beyond the edge.

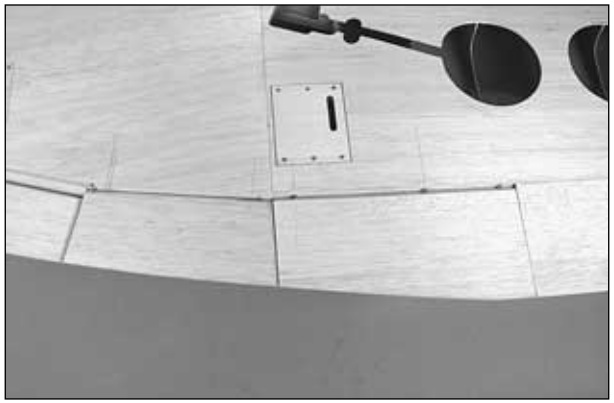


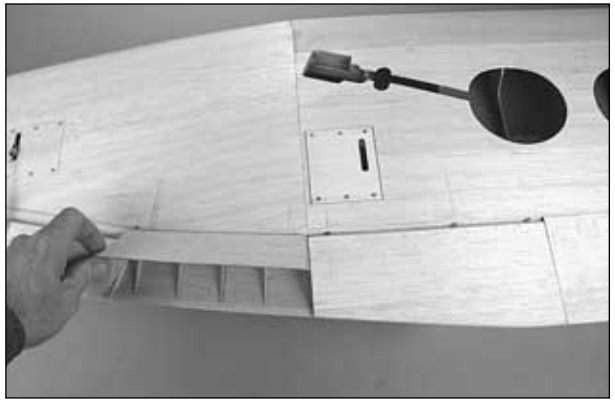
❏ ❏ 3. Align the hole in the drill jig with one of the reference lines on the wing. Using the drill jig as a guide, drill a hole for the flap hinge with a 3/32" [2.4mm] brass tube sharpened on the end. Remove the brass tube from the drill. Use a piece of wire to push the balsa plug out of the brass tube.

❏ ❏ 4. Drill the rest of the holes in the wing for the flap hinges the same way.

❏ ❏ 5. Use a hobby knife or a rotary tool to enlarge the openings of the holes to accommodate the hinges. Test fit the hinges.

❏ ❏ 6. Use the drill guide to drill the holes for the hinges in the inner and outer flap and enlarge the opening in the holes the same way. Test fit the flaps to the wing with the hinges. Make adjustments where required for a good fit.



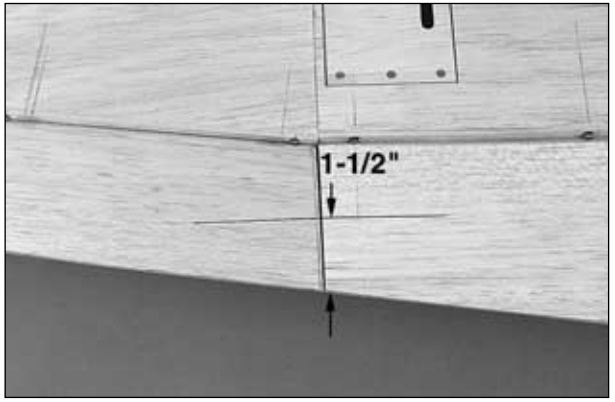


❏ ❏ 7. Bevel the LE of the flaps to allow for control deflection. Test fit the flaps to the wing and make certain the flaps can deflect 2" [50mm] as shown in the control throws section.

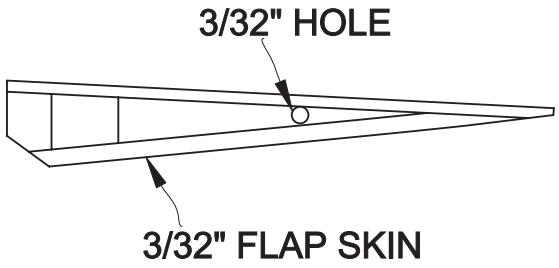
❏ 8. Return to step 1 and build the **left** outer flap the same way.

Connect the inner flaps to the outer flaps

Start with the **right** side.

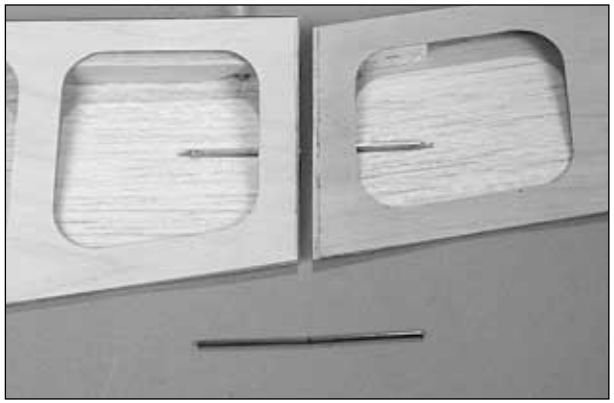


❏ ❏ 1. Use a ballpoint pen and a straightedge to draw a line across the bottom of the inner and outer flap 1-1/2" [38mm] from the trailing edge. The line should be parallel to the LE of the **inner** flap.



❏ ❏ 2. Drill a 3/32" [2.4mm] hole through the ends of the inner and outer flaps at the lines you marked. The edge of the hole should contact the 3/32" [2.4mm] balsa flap skin.

❏ ❏ 3. Roughen the outside of two 3/32" x 1-1/4" [2.4 x 32mm] brass tubes with coarse sandpaper. Glue one of the tubes to the inside of the inner flap with medium CA. Be careful not to get any CA inside the tube.

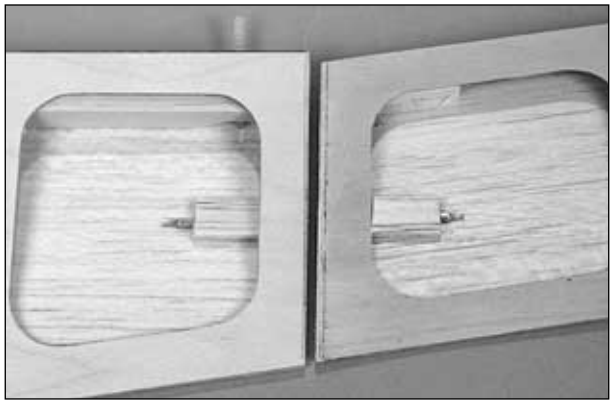


❏❏ 4. Insert the other brass tube into the outer flap, but do not glue it into position. Cut the 1/16" x 2-3/4" [1.6 x 70mm] wire rod to a length of 2-1/2" [64mm]. Make a **slight** bend in the middle of the rod to match the bottom of the flaps.

❏❏ 5. Connect the flaps to each other with the wire rod, then join the flaps to the wing with the hinges. Move the flaps up and down and make sure the brass tubes align. Make adjustments as necessary.

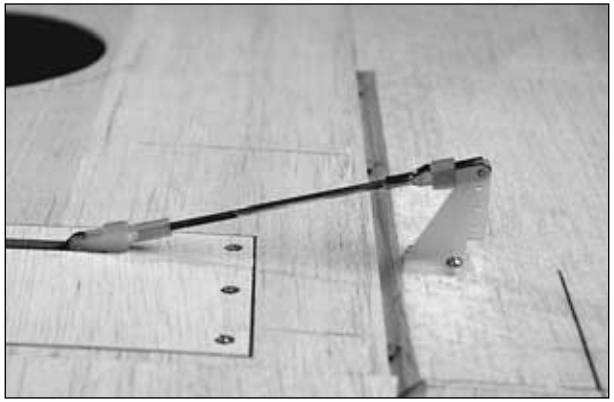
❏❏ 6. When a good fit is achieved, remove the flaps and glue the other brass tube to the outer flap.

❏❏ 7. Join the flaps with the wire rod and re-test fit them to the wing. Move the flaps up and down to be certain they operate smoothly. If necessary, change the angle of the bend in the rod. If resistance increases as the flaps extend, the angle in the joiner wire is probably too great. Decrease the angle.



❏❏ 8. Once satisfied with the fit of the flaps and smooth operation has been achieved, permanently secure the brass tubes to the flaps with pieces of leftover 3/32" [2.4mm] balsa.

You may proceed and hook up the flap servo to the right flap now, or go back and connect the left flaps.



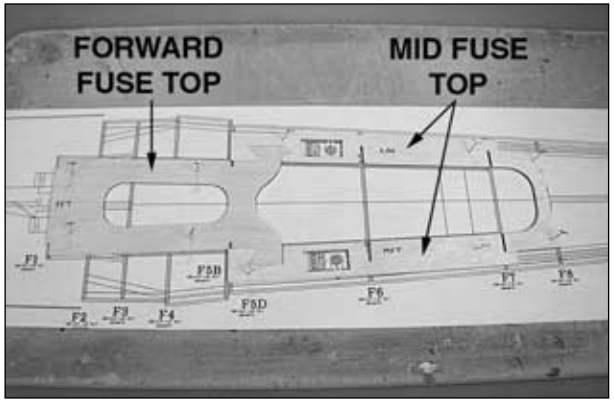
❏❏ 9. Connect the flap servo to the flaps using the hardware shown in the photo and on the plan (note the direction of the flap horn on the plan). After drilling 1/16" [1.6mm] holes through the bottom of the inner flaps for the screws that hold the control horns, harden the holes and the mounting area with thin CA. Allow to fully harden, then sand smooth and mount the control horns.

The Sea Fury performed several different roles including that of fighter/interceptor, long-range fighter bomber, long range rocket fighter, photo reconnaissance, coastal patrol, air sea rescue, trainer and carrier fighter.

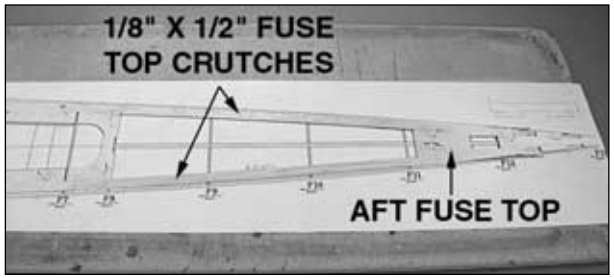
BUILD THE FUSELAGE

Frame the bottom of the fuselage

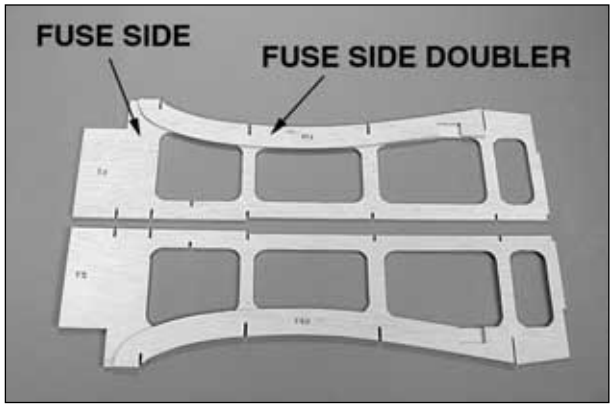
❏ 1. Place the bottom view of the fuselage plan over your flat building board. Cover the plan with Great Planes Plan Protector.



❏ 2. Test fit the die-cut 1/8" [3.2mm] plywood **forward fuselage top (FFT)** to both die-cut 1/8" [3.2mm] plywood **mid fuselage tops (MFT)**. Make adjustments as necessary so the parts align with the plan. Glue the parts together while holding them to the plan with T-pins.



❑ 3. Pin the die-cut 1/8" [3.2mm] plywood **aft fuselage top (AFT)** over its location on the plan. Connect the aft fuse top to the mid fuse top by gluing in two balsa **fuse top crutches** cut from two 1/8" x 1/2" x 24" [3.2 x 12.7 x 610mm] balsa sticks.

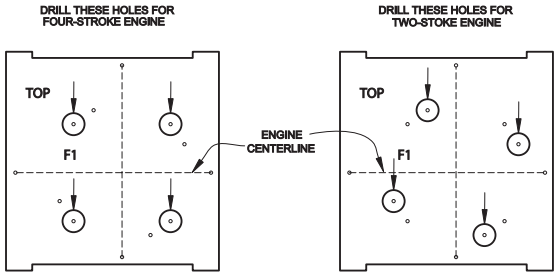


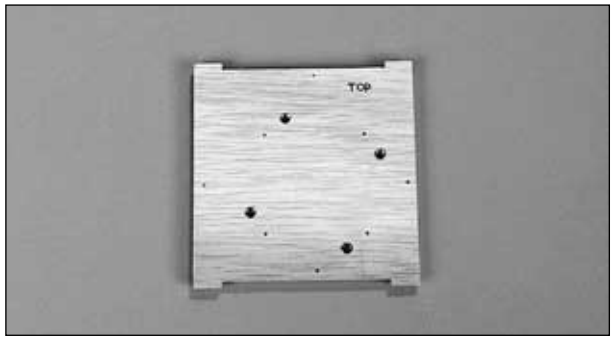
❑ 4. Glue a die-cut 1/8" [3.2mm] plywood **fuse side doubler (FSD)** to a die-cut 1/8" [3.2mm] plywood **fuse side (FS)**. Glue the other fuse side doubler to the other fuse side. Be certain to make a **right** and a **left**.

There are two engine mount positions illustrated in this manual. The **inverted** position is recommended for four-strokes so the exhaust will come out of the cowl near the bottom of the fuse. The **slanted** position is recommended for two-strokes so the optional Top Flite exhaust header will align with the optional Top Flite in-cowl muffler. If you prefer otherwise, the engine may be mounted in any position as long as it is in alignment with the engine centerline on the engine mount.

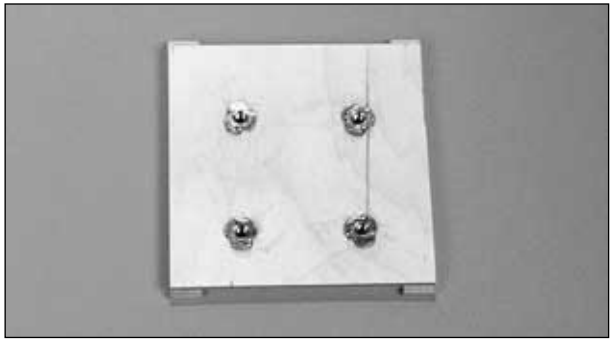
❑ 5. Glue the 1/8" x 3-15/16" x 4-1/16" [3.2 x 100 x 103.2mm] birch plywood **firewall doubler** to the **back** of the die-cut 1/8" [3.2mm] plywood **firewall F1.** From now on this assembly will be referred to as the **firewall**.

Skip the following step if not yet certain of the engine you will be using and the engine mount position. The holes for the engine mount blind nuts may be drilled after the firewall is glued into position, but will have to be drilled before mounting the cowl.

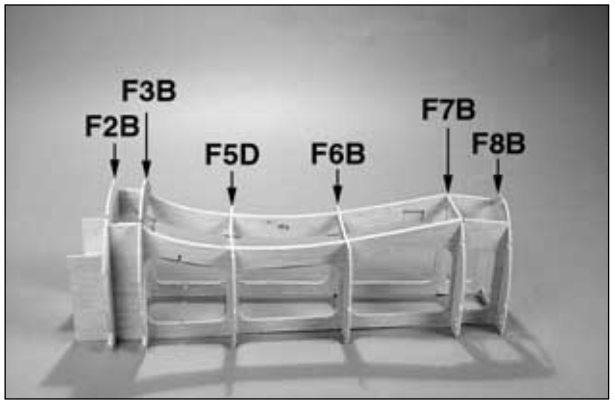




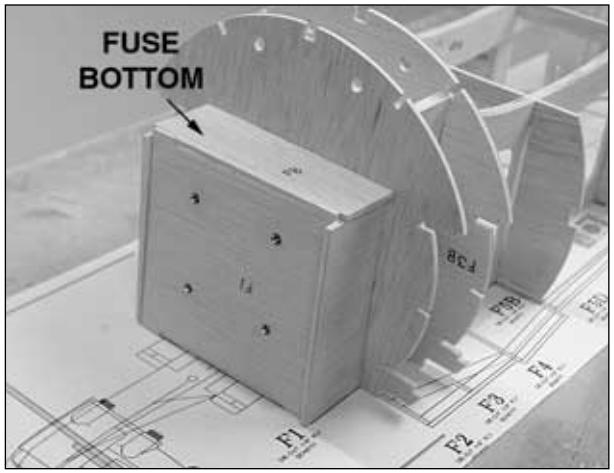
❑ 6. Refer to the sketch. Drill four 7/32" [5.6mm] holes through the punchmarks in the firewall for the engine mounting configuration selected (*inverted* for four-stroke or *slanted* for two-stroke). **Note:** If using an engine mount other than the one supplied with this kit, or if mounting the engine in a position other than the two options provided, draw the centerline connecting the outer punchmarks nearest the four sides of the firewall. This indicates the engine centerline, which is offset to account for engine side and down thrust. Center the engine mount over the intersection of the lines.



❑ 7. Use a hammer to tap four 8-32 blind nuts into the back of the firewall in the holes you drilled. Using care not to get any glue into the threads, glue each blind nut to the back of the firewall with a few drops of CA.



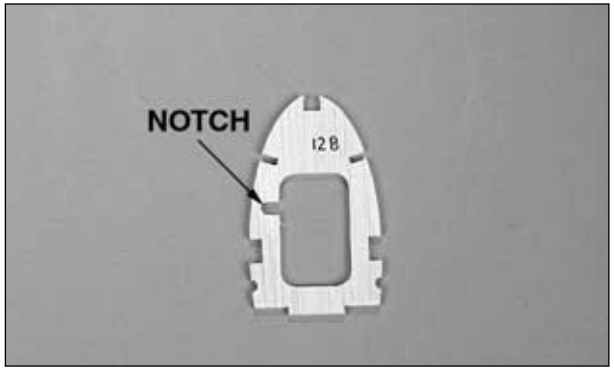
❑ 8. Without using any glue, join the die-cut 1/8" [3.2mm] plywood formers **F2-B**, **F3-B**, **F5-D**, **F6-B**, **F7-B** and **F8-B** to the fuse sides. Everything should "key" into place so it should be clear how it all fits together. (The fuse side doublers go on the inside.) **Note:** Some of the formers in the photos may appear to be slightly different than the formers in your kit. This is because the formers in the kit have been slightly modified for increased rigidity.



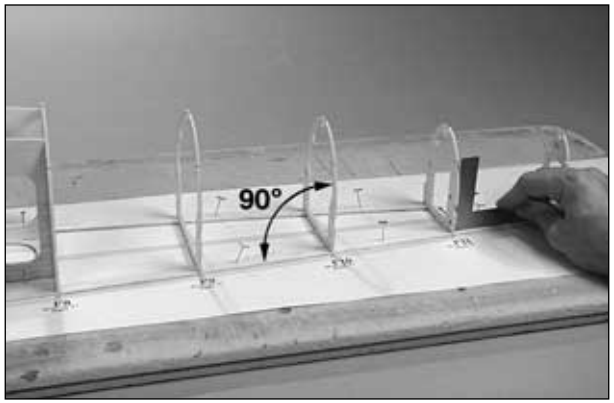
❑ 9. Still without glue, join the assembly to the fuse top on the building board. Join the firewall and the die-cut 1/8" [3.2mm] plywood **fuse bottom (FB)** to the assembly.

❑ 10. Now that everything is together and in alignment, glue the firewall and the fuse bottom to each other and to the fuse sides with 30-minute epoxy. Glue everything else together with CA.

❑ 11. Join formers **F4** to the assembly and glue them into position.

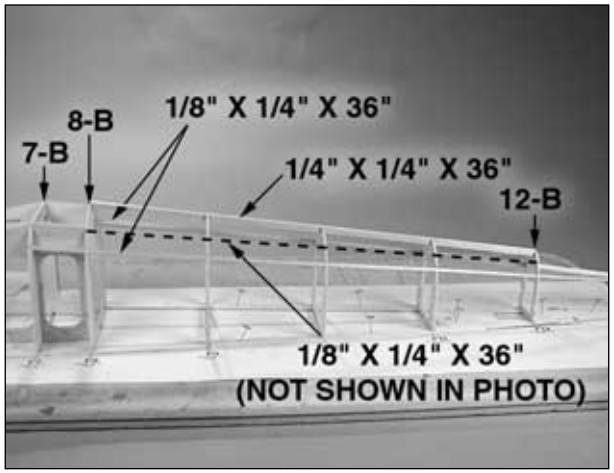


❑ 12. Cut a notch in former **F12-B** where shown to accommodate the tail gear pushrod.



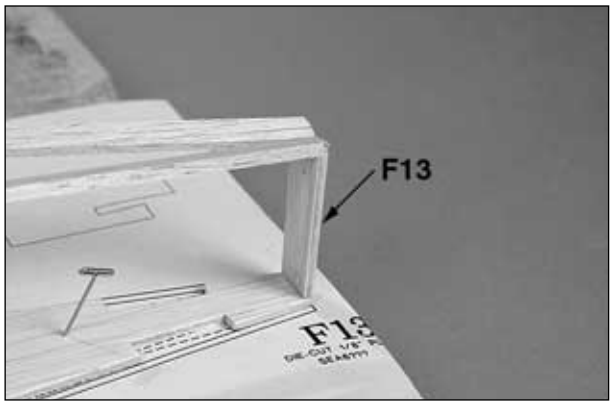
❑ 13. Glue formers **F9-B** through F12-B to the fuse top. Use a builder's square to hold the formers perpendicular to the building board while gluing. **Note:** Do not be alarmed if any of the formers are slightly twisted. The formers will be put into alignment as the stringers are added.

Refer to this photo for the following two steps.



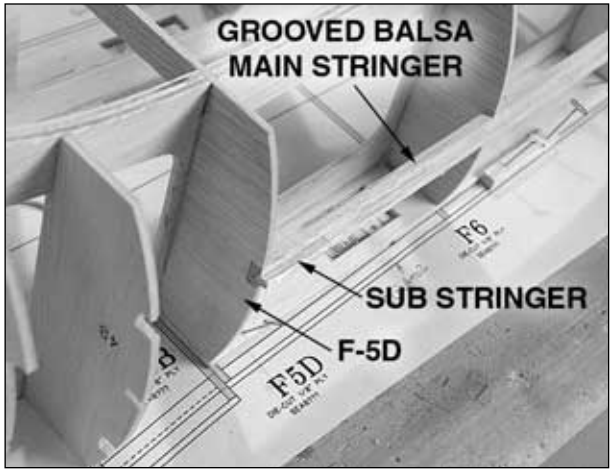
❑ 14. Cut a 1/4" x 1/4" x 36" [6.4 x 6.4 x 914mm] balsa stringer to fit from formers F8-B to F12-B, then glue it into position. As you do so, use a builder's square to set the formers perpendicular to the building board.

❑ 15. Cut two 1/8" x 1/4" x 36" [3.2 x 6.4 x 914mm] balsa stringers to fit from former F7-B to 6" [152mm] aft of former F12-B, then glue them into position. Cut two additional 1/8" x 1/4" x 36" [3.2 x 6.4 x 914mm] balsa stringers to fit from former F8-B to F12-B and glue them into position (these stringers do not appear in photos).



❑ 16. Glue the die-cut 1/8" [3.2mm] plywood former **F13** to the aft fuse top and to the 1/8" x 1/4" [3.2 x 6.4mm] stringers. Use a builder's square to make certain F13 is perpendicular to the building board. Trim the stringers even with F13.

Refer to this photo for the following two steps.



❑ 17. Glue both 3/16" x 3/8" x 40" [4.8 x 9.5 x 1016mm] grooved balsa **main stringers** into formers F5-D through F13. Note that the front of the stringer is even with the front of F5-D.

❏ 18. Glue both 1/8" x 3/16" x 36" [3.2 x 4.8 x 914mm] **sub stringers** into the groove in the main stringers. Use leftover 1/8" [3.2mm] balsa to make up for the last 1" [25mm] where the sub stringers come up short.

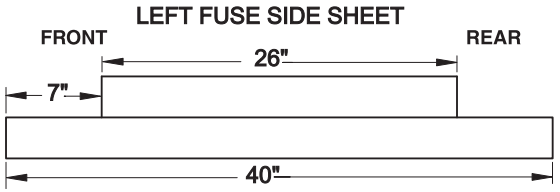
❏ 19. Cut a 3/16" x 36" [4.8 x 914mm] pushrod guide tube to a length of 17-1/2" [444.5mm]. This is the **tail steering guide tube**. Use coarse sandpaper to roughen the outside of the guide tube so glue will adhere. Slide the guide tube through the holes in F7-B through F11-B as shown on the side view of the fuse plan and glue it into position.

❏ 20. Sand the bottom of the aft end of the fuse sides (where indicated by the arrows in the photo) even with formers F7-B and F8-B to accommodate the sheeting that will be added later.

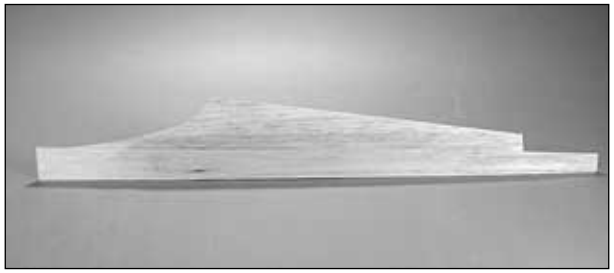
Sea Fury Fact

The Sea Fury was born out of the Royal Navy's requirement for a carrier-based interceptor. In April, 1943, Hawker Aircraft Ltd. began work on a land-based version, with a Naval conversion to be performed by Boulton-Paul Aircraft Ltd. Early in 1944 the RAF placed contracts for two-hundred planes and the Fleet Air Arm placed contracts for two-hundred planes.

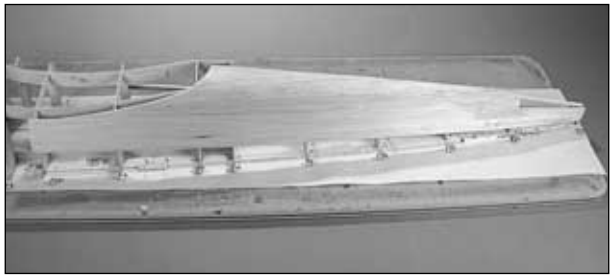
Sheet the aft fuse bottom



❏ ❏ 1. Cut a 3/32" x 3" x 36" [2.4 x 76 x 914mm] balsa sheet to a length of 26" [660mm]. Glue the sheet to a 3/32" x 3" x 40" [2.4 x 76 x 1016mm] balsa sheet 7" [180mm] from one end. This will be the left fuse side sheet.



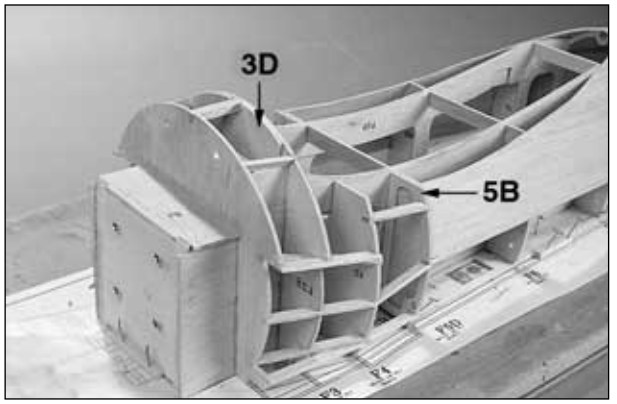
❏ ❏ 2. Trim the fuse side sheet to roughly fit the fuse from the sub stringer to the middle of the 1/4" x 1/4" [6.4 x 6.4mm] stringer on the bottom of the fuse. Wet the outside of the sheet near the bottom with water or window cleaner so it will bend around the formers and stringers.



❏ ❏ 3. Trim the sheet to fit more precisely, keeping it slightly oversize to allow for positioning. Glue the sheet first to the main and sub stringers, then to the formers and the rest of the stringers. Trim the sheet even with formers F5B, F12B and F13.

❏ 4. Sheet the other side of the fuse the same way. Fill the gap between both sides with lightweight sandable balsa filler. Use a hobby knife followed with a bar sander to trim the sheeting even with the bottom of the fuse sides.

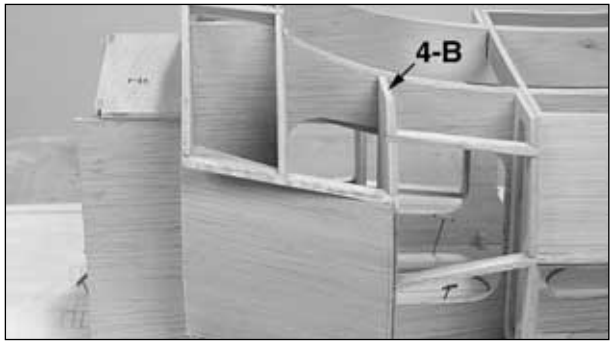
Sheet the front fuse bottom



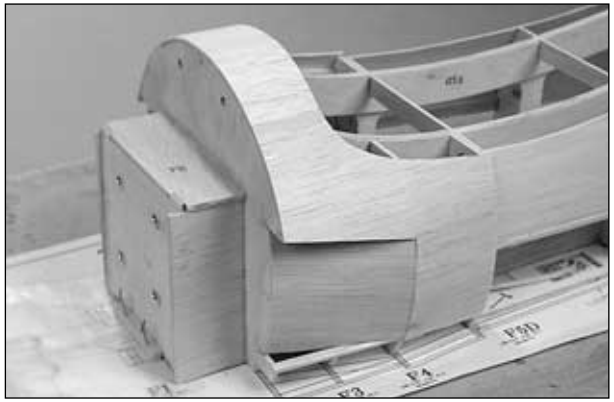
❏ 1. Glue a die-cut 1/8" [3.2mm] plywood former **F5B** to the front of former F5D on the right side (the wider part of F5B goes toward the top, or toward the workbench.) Glue a die-cut 1/8" [3.2mm] plywood former **F3D** to the front of former F3B on the right side. Cut the stringers that go into the notches of formers F3B through F5B on the right side of the fuse from a 1/8" x 1/4" x 36" [3.2 x 6.4 x 914mm] balsa stick. Glue the stringers into position.

❏ 2. Repeat the previous step for the left side of the fuse. Cut the short, bottom stringer that connects formers F2B with F3B from a 1/4" x 1/4" leftover balsa stick. Glue the stringer into position. Sand the stringers even with the formers.

❏ 3. Cut a 3/32" x 3" x 36" [2.4 x 76 x 914mm] balsa sheet into six 6" long sheets. Make a 6" x 6" sheet by edge-gluing two of the sheets together. Make the **front fuse sheet** and the **engine exhaust sheet** using the patterns on the fuse plan.

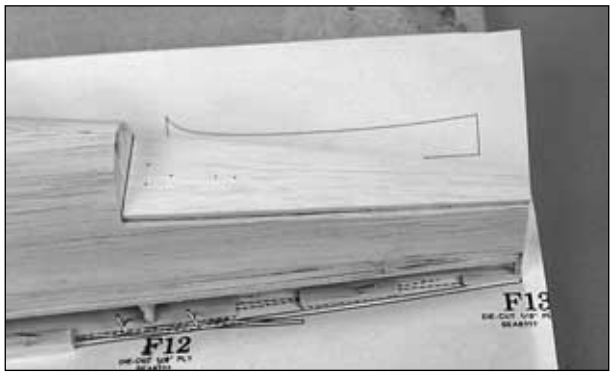


❏ 4. Test fit, then glue the engine exhaust sheet into position. Note that the aft edge aligns with the middle of former F4B.



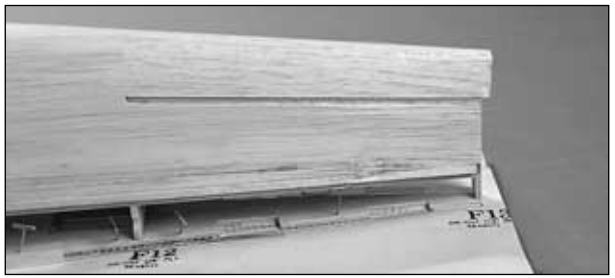
❏ 5. Test fit, then glue the front fuse sheet into position. Sheet the other side of the fuse the same way, then sheet the bottom of the fuse over formers F2B and F3B.

Mount the tail gear

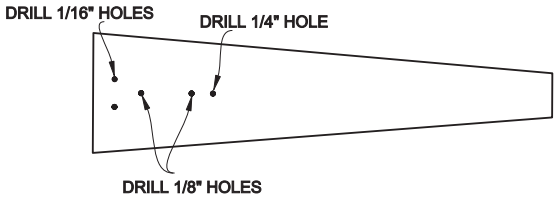


❏ 1. Drill 1/16" [1.6mm] holes through the punchmarks in the die-cut 1/8" [3.2mm] plywood **tail gear plate (TGP).** Use a few drops of medium CA to tack-glue the tail gear plate into position on the back of the fuse.

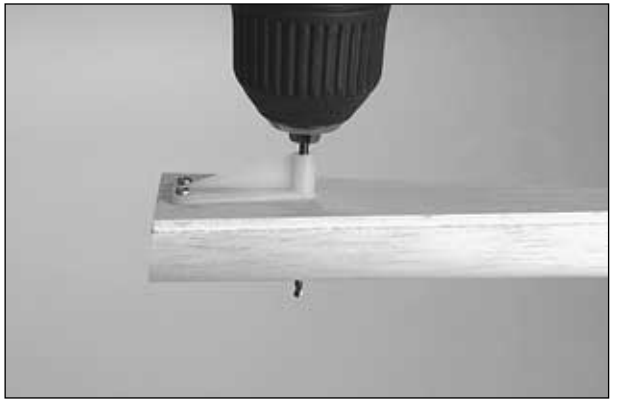
❏ 2. Bevel one end of the 1" x 1-3/4" x 6" **tail block** to match the angle of former F12B when positioned on the bottom of the tail gear plate. Glue the tail block to the tail gear plate, but not to the fuse.



❏ 3. Round the tail block to match the bottom of the fuse.



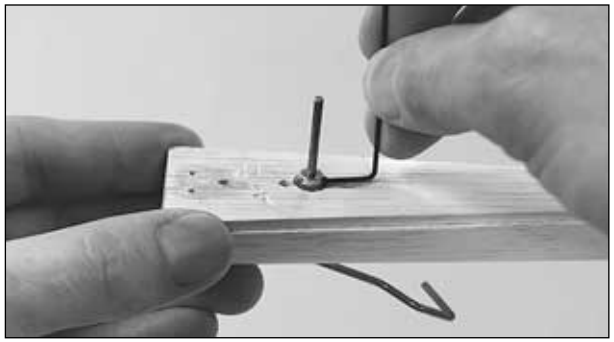
❏ 4. Break the tail block (with the tail gear plate attached) from the fuselage. Referring to the sketch, drill 1/8" [3.2mm] holes, 1/2" deep through the punchmarks in the tail gear plate to accommodate the alignment posts in the nylon tail gear bracket.



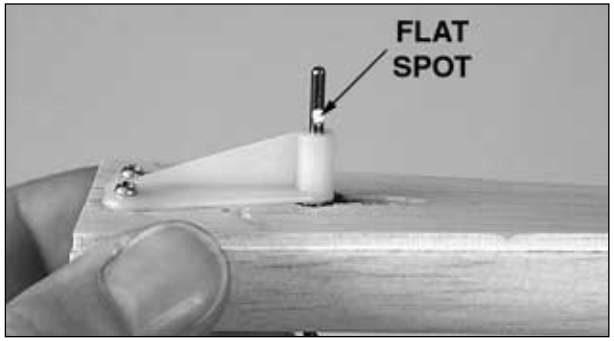
❏ 5. Temporarily mount the nylon tail gear bracket to the tail gear plate with two #2 x 3/8" screws. Using the tail gear bracket as a guide, drill a 3/32" [2.4mm] hole through the tail gear plate and the tail block.

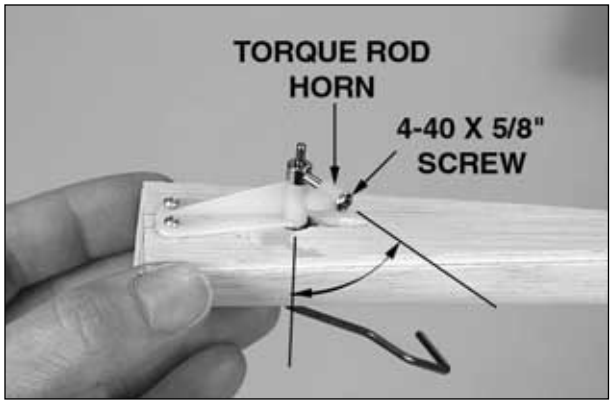
❏ 6. Remove the tail gear bracket from the tail gear plate. Enlarge the hole in the tail block and the tail gear plate with a 5/32" drill. Use a Dremel to enlarge the opening of the hole in the tail gear plate to accommodate the 3/32" [2.4mm] wheel collar.

❏ 7. Use coarse sandpaper to roughen the outside of the 1-5/8" nylon **bearing tube** so glue will adhere. Cut the tube to a length of 5/8". Glue the tube into the tail block, so one end of the tube is even with the bottom of the block.



❏ 8. Insert the prebent tail gear wire into the tail block through the bearing tube. Use a small drop of threadlocker on a 4-40 set screw to permanently secure the tail gear wire with a 3/32" [2.4mm] wheel collar.





❏ 9. Mount the tail gear bracket to the tail gear plate with the #2 x 3/8" screws. Thread a nylon torque rod horn all the way onto the 4-40 x 5/8" screw. File a small flat spot on the tail gear wire for the screw. Mount the screw to the tail gear wire with a 3/32" [2.4mm] wheel collar. Be certain the angle is correct as shown on the plan. Tighten securely with a drop of threadlocker.

❏ 10. Cut a 36" long pushrod to a length of 26". Thread a nylon clevis onto the pushrod about 20 full turns. Connect the clevis to the torque rod horn and secure it with a silicone tube.

❏ 11. Slide the pushrod through the tail gear guide tube already glued into the fuse. Position the tail gear plate and the tail block on the fuse. Move the pushrod back and forth to make sure there is no interference or binding. If necessary, widen the round notch in former F12B to accommodate the pushrod. Permanently glue the tail gear plate and the tail block to the fuse.

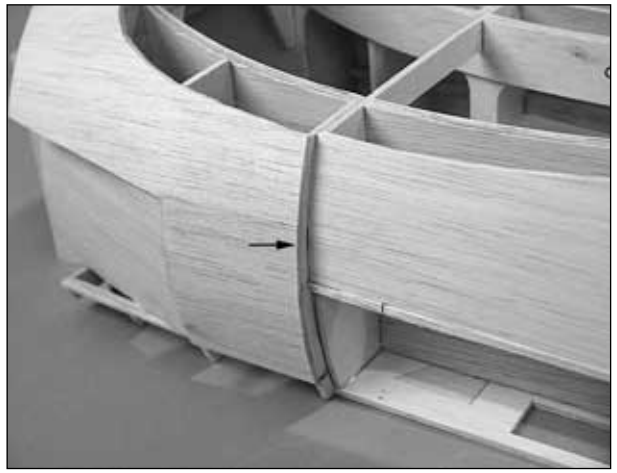
❏ 12. Remove the fuselage from the building board. Fill the gap on both sides of the fuselage between the tail block and the fuse sheeting with leftover 1/8" [3.2mm] balsa or filler.

Sea Fury Fact

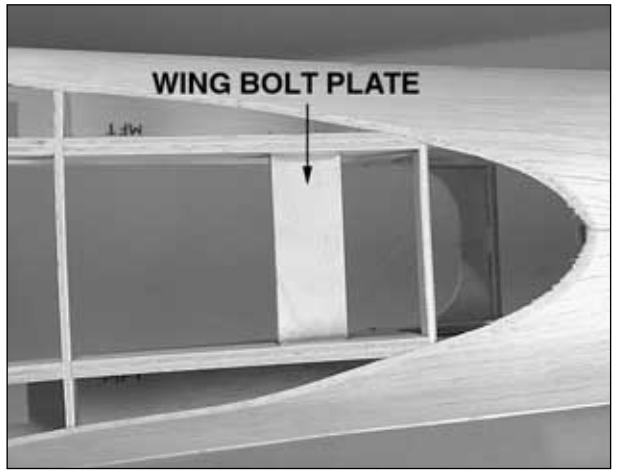
The first Sea Fury prototype, powered by a Centaurus Mk.12 engine driving a four-bladed propeller, also featuring an arresting hook and fixed (non-folding) wings, flew on February 21, 1945. The second Sea Fury prototype was powered by a Centaurus Mk.15 driving a five-bladed propeller and was fully *navalized* with folding wings.

Mount the wing

Although the fuse is only partially complete, now is a convenient time to mount the wing.

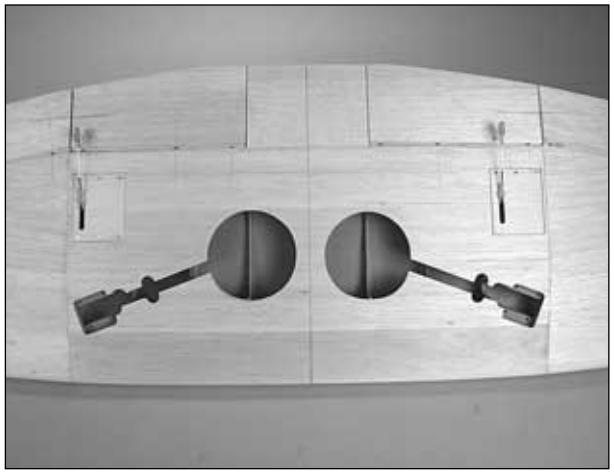


❏ 1. Trim the fuse sheeting even with the aft edge of former 5D on both sides of the fuselage.



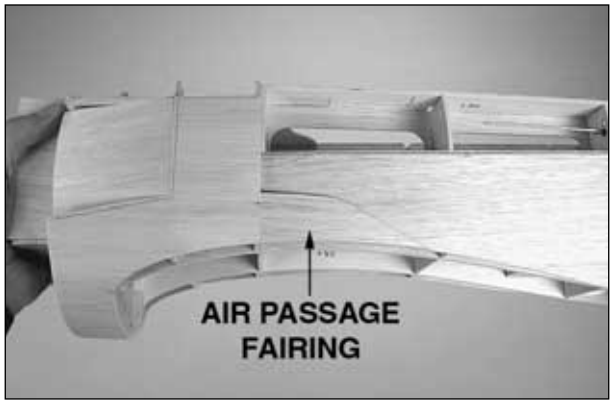
❏ 2. Test fit the 1/4" x 1" x 2-15/16" plywood **wing bolt plate** between the fuse side doublers. Trim the ends of the wing bolt plate as necessary, then use 30-minute epoxy to glue it into position.

❏ 3. If you haven't yet done so, shape the leading edge of the wing to match the cross-section on the plans.

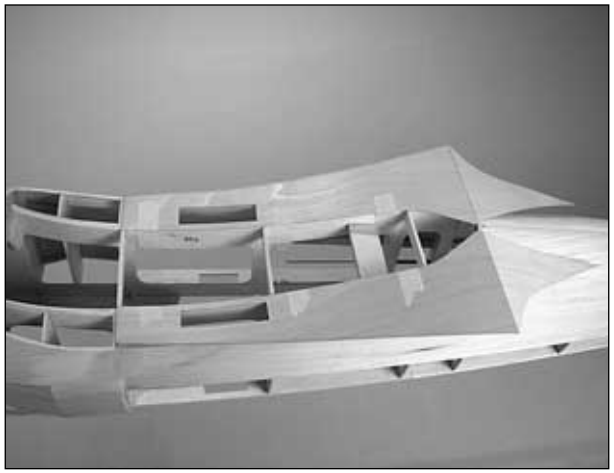


❏ 4. Accurately measure and mark the middle of the leading edge and the TE spar on the bottom of the center section of the wing. Lightly draw a centerline across the bottom of the wing using a straightedge to connect the two marks.

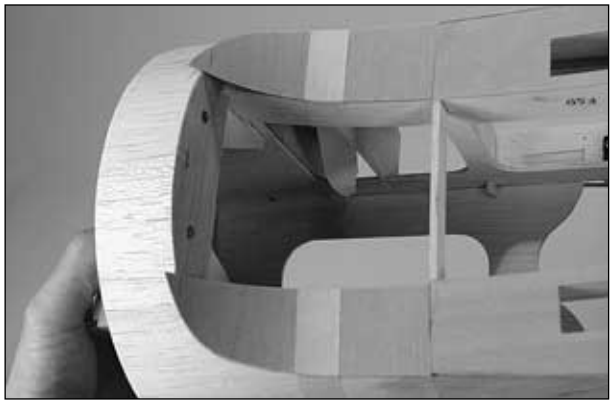
❏ 5. Using the centerline on the bottom of the wing as a reference, center the wing in the fuse. Trim the fuse sheeting where necessary until the LE of the wing contacts the aft edge of former F3B and the rest of the wing fits well. (This is most easily done with the wing and the fuse upside-down, but is photographed upright for illustration.)



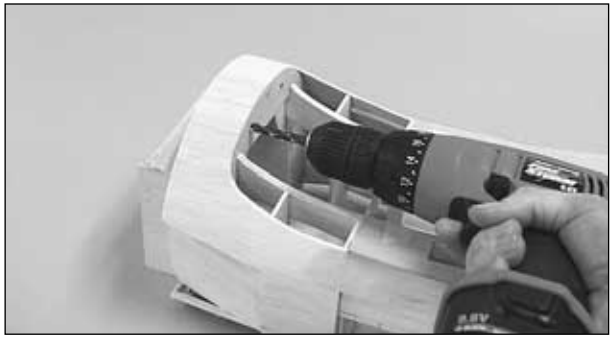
❏ 6. Use the template on the plan to make both **air passage fairings** from the 1/4" x 1-1/2" x 9" balsa sheet. Glue the fairings to both sides of the fuse where shown. Sand the air passage fairings to match the fuse.



❏ 7. Note the embossed lines across both die-cut 1/32" [.8mm] plywood **aft wing fillet bases (FB)**. Carefully, without breaking them, bend both aft wing fillet bases upward at the lines. Tape the aft wing fillet bases into position on the fuselage.

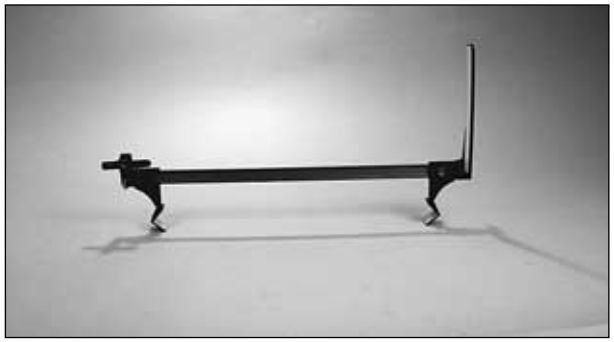


❏ 8. Tape both die-cut 1/32" [.8mm] plywood **forward wing fillet bases** to the fuse the same way.

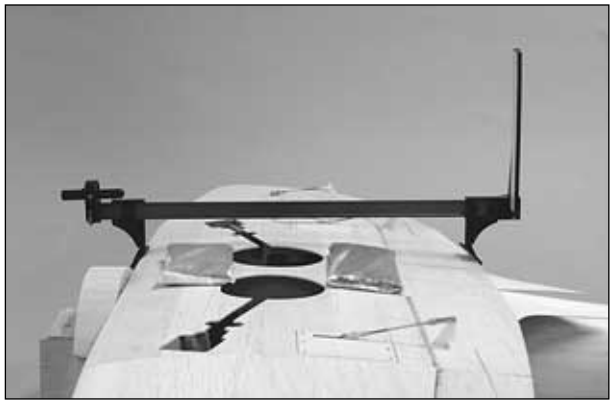


❏ 9. Using the 1/4" [6.4mm] holes in formers F3B as a guide, drill 1/4" [6.4mm] holes through both F3Ds.

For those who wish to do so, now is a good opportunity to check the wing incidence. The correct wing (and stab) incidence is built into this model and is preset by the die-cut ply fuse sides and lower stab saddles. Checking the incidences is not necessary, but some modelers prefer to do so anyway. A wing incidence meter (such as the Great Planes® Accupoint™ Laser Incidence meter, GPMR4020) is required to check the incidence.



❏ 10. Place the incidence meter on the same workbench you are building the fuse on. Turn on the incidence meter and set it to zero.



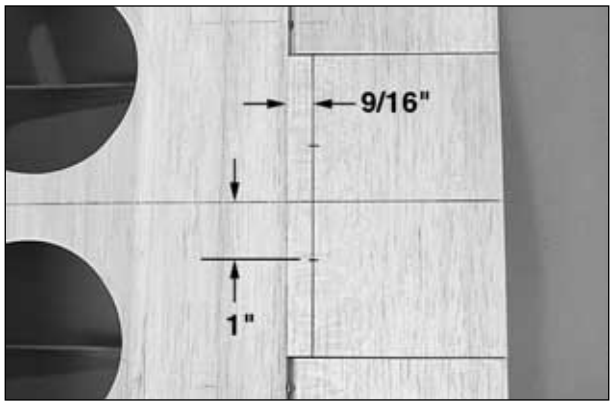
❏ 11. Lay the fuse upside-down on the workbench. Center the wing in the fuse using the centerline you drew on the bottom of the wing. Place weights on the bottom of the wing to hold it down. Place the incidence meter on one side of the wing next to the fuse. Read the meter. It should read minus one degree (which means that the wing has one degree of positive incidence since the model is upside-down). Take a reading on the other side of the wing next to the fuse just to be certain.

❏ 12. If necessary, carefully sand the high end of both fuse sides to adjust the wing incidence. Reposition the wing and check the incidence. Make adjustments until the incidence meter reads minus one degree (indicating that the wing has one degree positive incidence).

❏ 13. Center the wing in the fuse again and place weights on top of it to hold it down. Using the holes in the formers as a guide, drill 1/4" [6.4mm] holes through the LE of the wing and through the forward and aft dowel plates inside the wing. **Hint:** Use a 1/4" [6.4mm] brass tube sharpened on the end to drill the holes. Mark the tube or drill 3-1/2" from the end to drill the holes the correct depth.

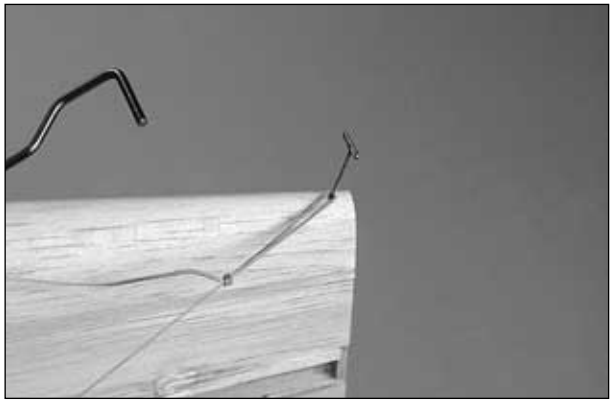
❏ 14. Cut both 1/4" x 3" hardwood wing dowels to a length of 2-3/4". Round one end of both dowels, then test fit them into the wing and fuse. **Hint:** If difficulty is encountered fitting the dowels into the wing or fuse, sand them in a drill so they fit a little easier.

❏ 15. Glue the dowels into the wing (or wait until after the model has been final-sanded and covered).

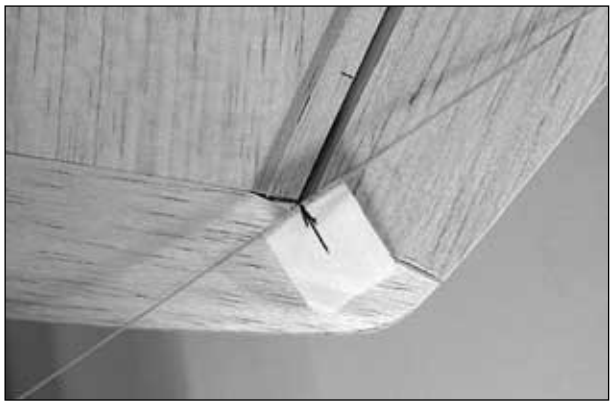


❏ 16. Mark the bottom of the wing 9/16" aft of the center TE spar and 1" from the centerline where the holes are to be drilled for the wing bolts.

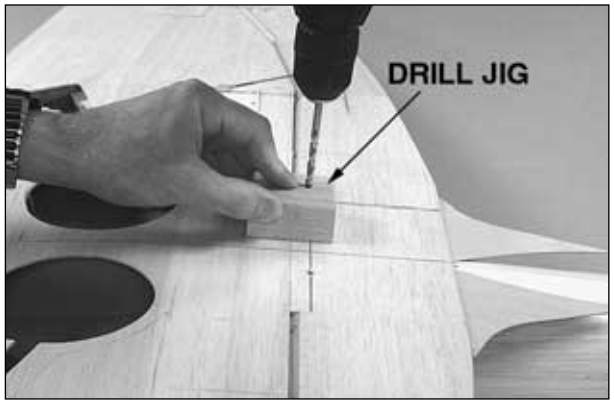
❏ 17. With the wing dowels in the wing, reposition the wing on the fuse. Place weights on top of the wing to hold it down.



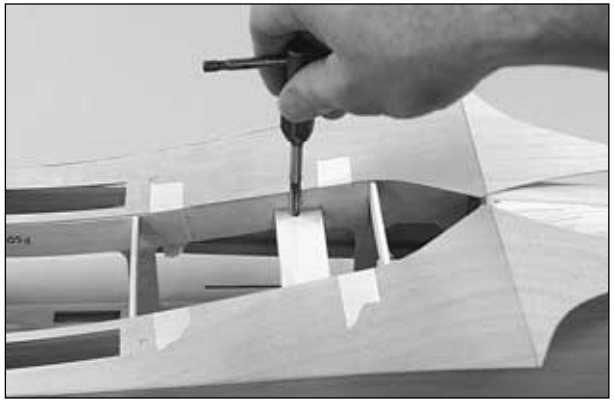
❏ 18. Stick a pin into the center of the tail block near the aft end of the fuse. Tie a small loop in one end of a 48" piece of non-elastic string such as K & S #801 Kevlar thread (K+SR4575). Slip the loop in the string over the T-pin.



❏ 19. Fold a piece of masking tape over the other end of the string and draw an arrow on it. Slide the tape along the string and align the arrow with one end of the wing as shown in the photo. Swing the string over to the same position on the other end of the wing. Adjust the wing and slide the tape along the string until the arrow aligns with both sides.



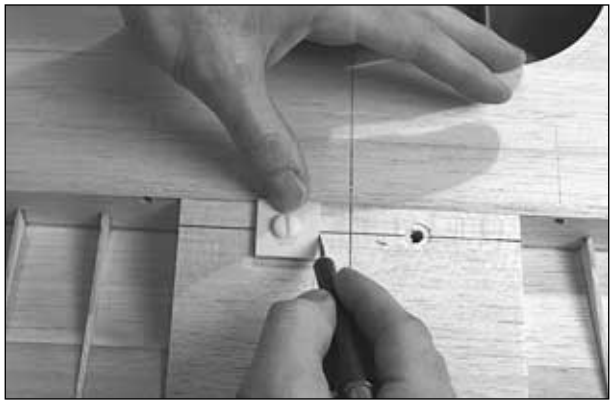
❏ 20. With the wing in alignment, drill #7 (or 13/64") holes through the wing and the wing bolt plate inside the fuse at the marks you made. **Hint:** Make a drill jig by using a drill press to drill a perpendicular #7 (or 13/64") hole through an approximately 1-1/2" x 2" x 2-1/2" hardwood block. This will ensure that the hole in the block is perpendicular to the bottom of the wing.



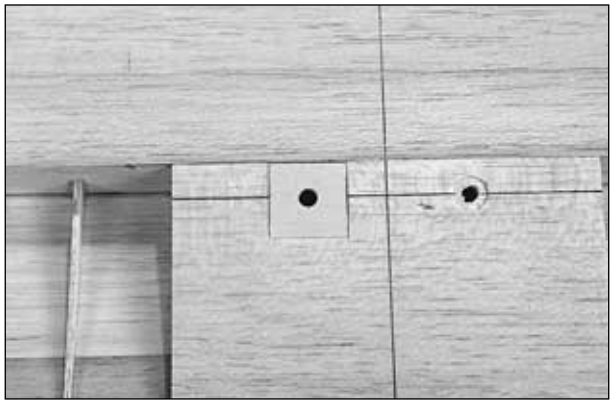
❏ 21. Remove the wing from the fuse. Use a 1/4-20 tap to tap threads into the wing bolt plate. Enlarge the holes in the wing only with a 17/64" (or 1/4" [6.4mm]) drill.

❏ 22. Harden the threads in the wing bolt plate by adding a few drops of thin CA or epoxy and allowing to fully harden. Re-tap the threads.

❏ 23. Test mount the wing to the fuse with the 1/4-20 x 2" nylon wing bolts.



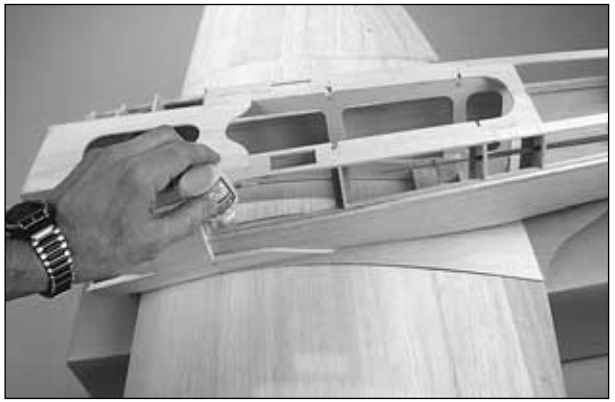
❏ 24. Cut two 1" x 1" squares from leftover 1/8" [3.2mm] plywood. Drill a 17/64" (or 1/4" [6.4mm]) hole through the center of both squares. Place a wing bolt through one of the squares and insert the wing bolt into one of the bolt holes in the bottom of the wing. Cut around the square with a hobby knife.



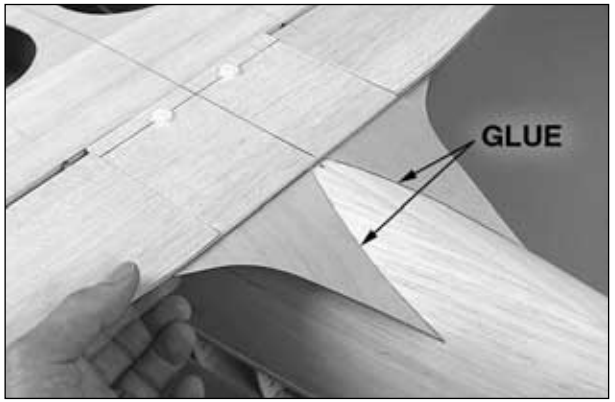
❏ 25. Remove a 1/8" [3.2mm] deep section of balsa inside the lines you cut. Glue the square into position to reinforce the bottom of the wing for the head of the wing bolt. Do the same for the other wing bolt.

Make the wing fillets

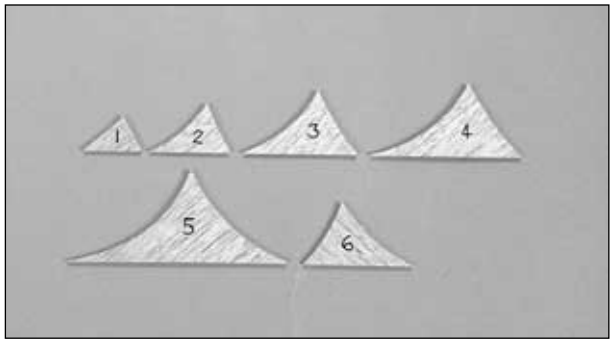
Note: The left wing fillet is shown in the photos, but both fillets are made at the same time.



❏ 1. With the wing bolted to the fuselage and the 1/32" [.8mm] plywood fillet bases taped into position, use medium CA to glue the fillet bases to the ply fuse sides from inside the fuse only (the fillet bases will be glued to the fuse sheeting later). Use care not to get any glue onto the wing. Hint: If you are concerned about inadvertently gluing the wing to the fillet bases, first remove the wing and cover the center section with waxed paper, then bolt the wing back into position.



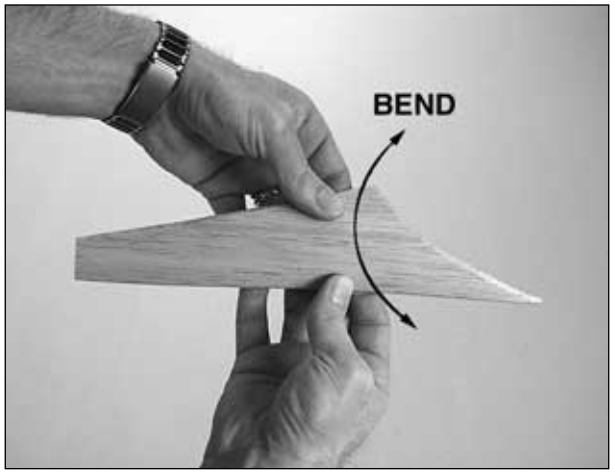
❏ 2. Turn the model upside-down. Holding the fillet base to the top of the wing, use medium CA to glue the aft end of the fillet base to the fuse.



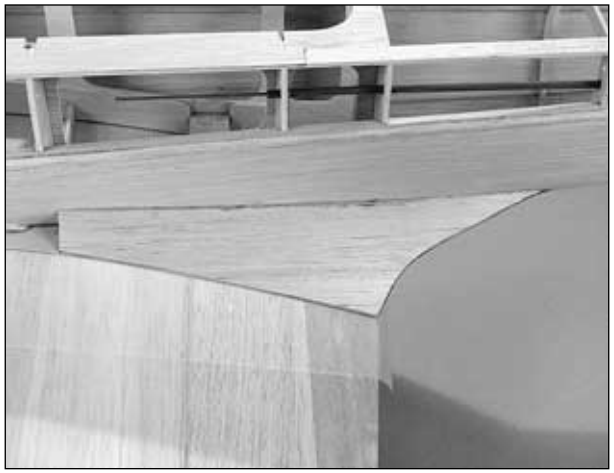
❏ 3. Use a ballpoint pen to label the die-cut 1/16" [1.6mm] balsa **fillet braces** (1 through 6) as on the die pages and as in the photo. Note that fillet braces 3 and 6 appear to be identical, but fillet 6 is slightly smaller than fillet 3.

❏ 4. Test fit and glue the fillet braces to the fuse and the wing fillet base. The fillets will be correctly spaced when they fit the fuse and the fillet base well, and when the outer tips of the fillet bases are approximately 1/8" [3.2mm] from the edge of the wing fillet.

❏ 5. If you haven't already done so, remove the wing and cover the top of the center section with waxed paper. Bolt the wing back to the fuse.

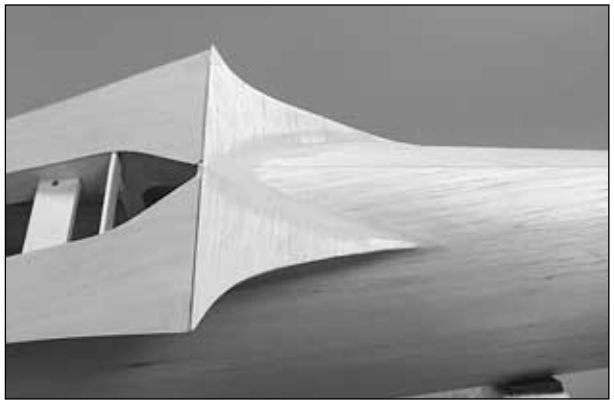


❏ 6. Wet the die-cut 1/16" [1.6mm] balsa **wing fillet sheet (WF)** with water or window cleaner. Carefully bend the sheet as the water works in.



❏ 7. Test fit the wing fillet sheet to the fuse and the wing fillet base. Trim the sheet as necessary for a good fit. By the time the sheet has been trimmed to fit, it should be dry enough to glue into position. Glue the wing fillet sheet into position.

❏ 8. Fill most of the space in front of the fillet sheet between the fuse and the fillet base with leftover balsa. Use lightweight balsa filler to complete the job blending the fillet base, the fillet sheet and the fuse together.



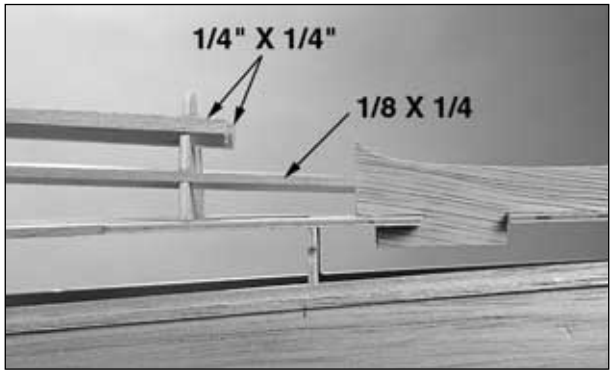
❏ 9. Turn the model upside-down in the building cradle. Glue leftover 1/8" [3.2mm] balsa to the bottom of the ply wing fillet base behind the wing. Leave a 1/16" [1.6mm] gap between the trailing edge of the wing and the sheeting. Use balsa filler to smoothly blend the bottom of the fillet to the fuse.

With the end of the Second World War, the RAF canceled all production contracts for the Sea Fury, deciding to concentrate all of its efforts on jet fighters. The Royal Navy reduced its order to 100 Sea Furies and canceled the Boulton-Paul contract entirely.

Frame the top of the fuselage

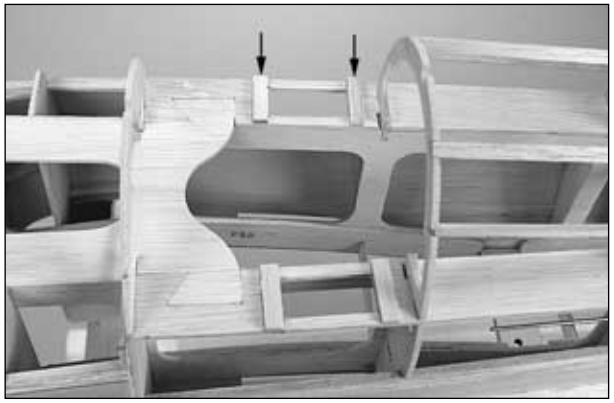
Refer to this photo for the following two steps.

❏ 1. Glue formers **F6A** through **F12A** and both die-cut 1/8" [3.2mm] plywood **lower stab saddles (LSS)** to the fuse. **Note:** There are two F6A formers in this kit. The aft F6A (that is to be glued into position in this step) has five notches–two for 1/4" x 1/8" stringers and three for 1/4" x 1/4" [6.4 x 6.4mm] stringers.



❏ 2. Cut two 1/8" x 1/4" x 36" [3.2 x 6.4 x 914mm] balsa stringers and two 1/4" x 1/4" x 36" [6.4 x 6.4 x 914mm] balsa stringers to the correct length, then glue them into the notches of the formers as shown in the photo and on the plan (the top, middle 1/4" x 1/4" [6.4 x 6.4mm] stringer will be glued into position later). The two 1/8" x 1/4" [3.2 x 6.4mm] stringers extend from former F6A to the front of the lower stab saddles. The two 1/4" x 1/4" [6.4 x 6.4mm] stringers extend former F6A to 3/8" [9.5mm] aft of former F12A.

❏ 3. Test fit the elevator and rudder servos into the forward fuse top. Enlarge the openings for the servos if necessary.



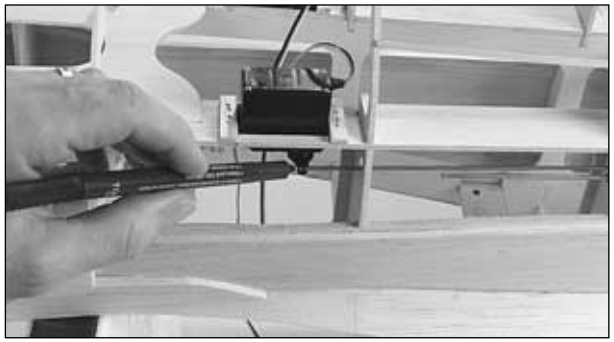
❏ 4. Cut four 1/4" x 1-1/4" [6.4 x 32mm] strips from leftover 1/8" [3.2mm] plywood and glue them to the top of the forward fuse top for the servo screws.

❏ 5. Drill 1/16" [1.6mm] holes for mounting the rudder and elevator servos. Add a few drops of thin CA to each hole and allow to harden. Mount the servos in the fuse with the screws that came with the servos. Using a servo horn drill (HCAR0698) or a hobby knife, enlarge the holes in the servo arm to accommodate the pushrod wires.

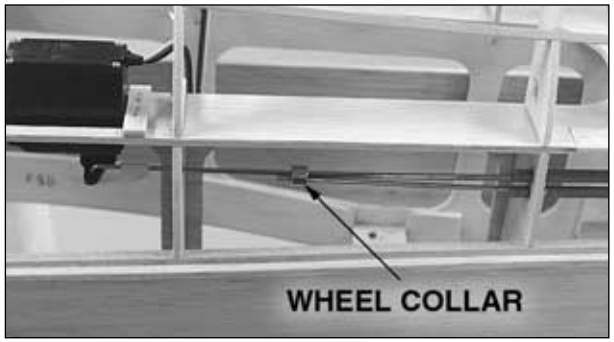
❏ 6. Cut two 3/16" x 36" [4.8 x 914mm] pushrod guide tubes to a length of 26" [660mm]. Roughen the outside of the tubes with coarse sandpaper so glue will adhere. Insert the guide tubes into the holes in both sides of the formers. The fronts of the guide tubes should extend approximately 1/4" [6.4mm] in front of former 7B. Glue the guide tubes to all the formers except former F12.

❏ 7. Thread a nylon clevis about twenty turns onto a .074" x 36" [1.9 x 914mm] pushrod. Connect the clevis to the second-from-the-bottom hole of a large control horn. Insert the pushrod into the rudder guide tube in the left side of the model while fitting a 5/32" [4mm] wheel collar with a 6-32 set screw over the rudder pushrod and the tail wheel steering pushrod.

❏ 8. Temporarily place the stab with elevators and the fin with rudder on the fuse. Rest the control horn on the rudder.

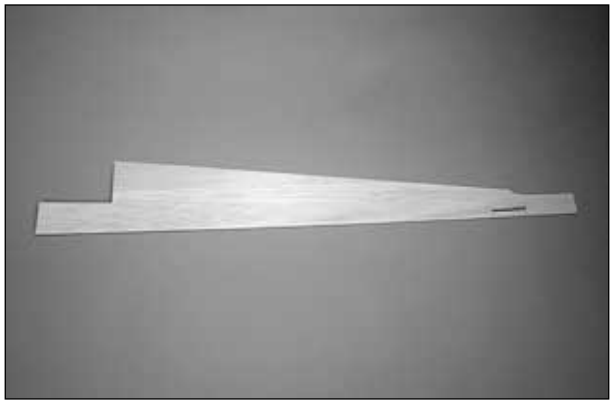


❏ 9. Center the rudder. Use a fine point felt-tip pen to mark the pushrod where it passes the hole in the servo arm.

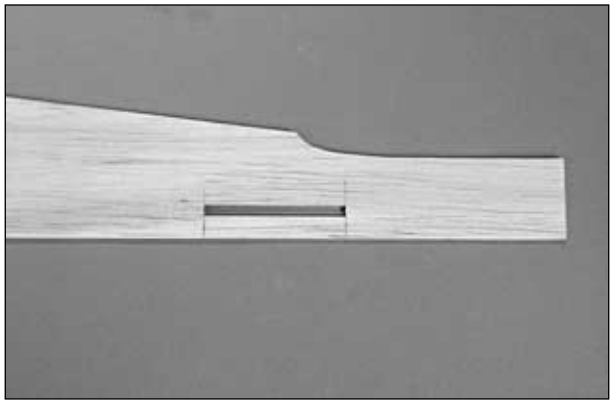


❏ 10. Unscrew the clevis from the aft end of the pushrod. Pull the pushrod partway out of the fuse from the front. Bend the pushrod at the mark, then cut off the excess wire, making certain you leave enough for the FasLink. Take the servo arm off the rudder servo and connect it to the pushrod with a FasLink. Slide the pushrod back into the fuse and connect the servo arm to the servo. Center the servo and the tail gear. Temporarily tighten the set screw in the wheel collar locking the rudder and tail steering pushrod together.

❏ 11. Make the pushrod for the elevator the same way.

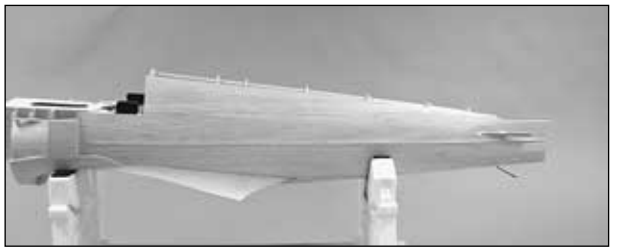


❏ 12. Use a 3/32" x 3" x 40" [2.4 x 76 x 1016mm] balsa sheet and a 3/32" x 3" x 36" [2.4 x 76 x 914mm] balsa sheet to make a skin to sheet the left side of the fuse from the main stringer up to the middle of the first 1/4" x 1/4" [6.4mm x 6.4mm] stringer. Save the remainder of the 36" [914mm] sheet for the other side.



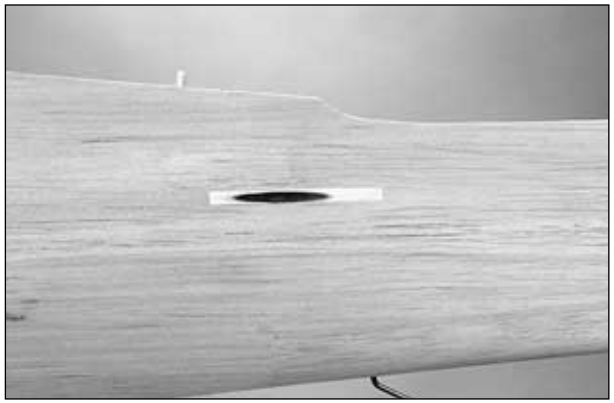
❏ 13. Cut a slot in the aft end of the fuse skin to accommodate the rudder guide tube.

❏ 14. Loosen the set screw in the wheel collar that joins the rudder and tail steering pushrod. Unscrew the clevis from the aft end of the rudder pushrod. Slide the pushrod forward through the hole in former 5D.

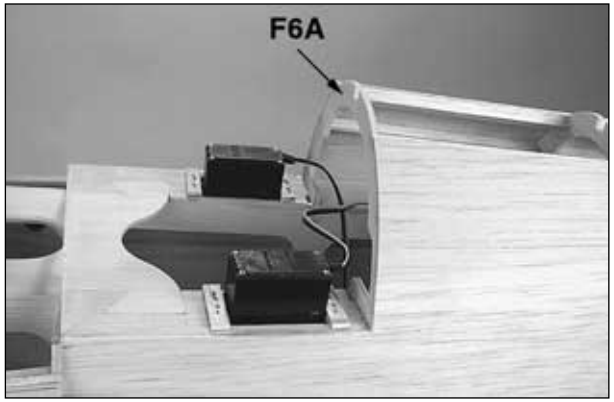


❏ 15. Mix a small amount of 30-minute epoxy and microballoons. Apply the mixture around the rudder guide tube where it will exit the slot in the fuse skin. Position the fuse skin on the fuse. Glue the skin to the main stringer only. Wet fuse skin with water or spray window cleaner, then glue it to the rest of the stringers and formers. Make sure the slot in the skin around the guide tube is packed with epoxy and microballoons, so the slot will be filled when the guide tube is sanded flush with the fuse skin.

❏ 16. Make a fuse skin for the other side the same way using the remainder of the 3/32" x 3" x 36" [2.4 x 76 x 914mm] balsa sheet and an additional 3/32" x 3" x 40" [2.4 x 76 x 1016mm] balsa sheet. Glue the fuse skin to the right side of the fuse.

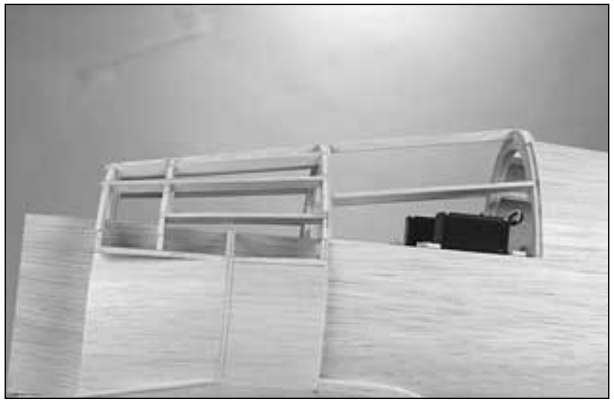


❏ 17. After the epoxy from the previous step has hardened, sand the guide tube and excess epoxy flush with the fuse sheeting. Sand the sub stringer even with the fuse sheeting.



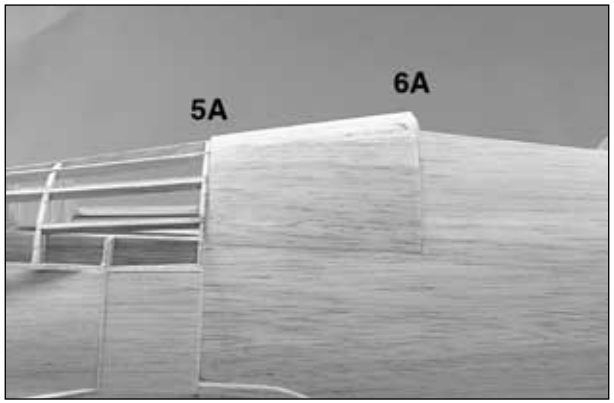
❏ 18. Trim the front of the fuse skins even with the fuselage top and former F6A. Trim the back of the fuse skins even with the lower stab saddles and the end of the fuse.

❏ 19. Glue the second **F6A** former and formers **F5A, F5C, F3A** and **F2A** into position on the fuse top.



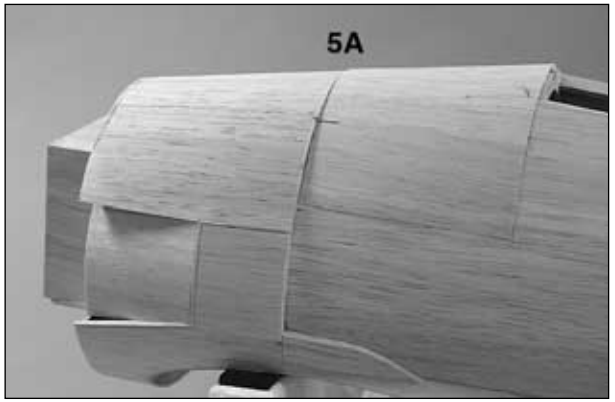
❏ 20. Make the stringers that extend from former F6A to F2A from leftover 1/4" x 1/4" [6.4 x 6.4mm] balsa sticks and leftover 1/8" x 1/4" [3.2 x 6.4mm] balsa sticks. Glue the stringers into position. Note that former F3A has no notch for the bottom 1/8" x 1/4" [3.2 x 6.4mm] stringer, so the stringer butts-up to it.

❏ 21. The same as the wing skins, make the last skin for sheeting the front of the fuse by gluing together two 3/32" x 3" x 36" [2.4 x 76 x 914mm] balsa sheets to make a 3/32" x 6" x 36" [2.4 x 152 x 914mm] balsa sheet.

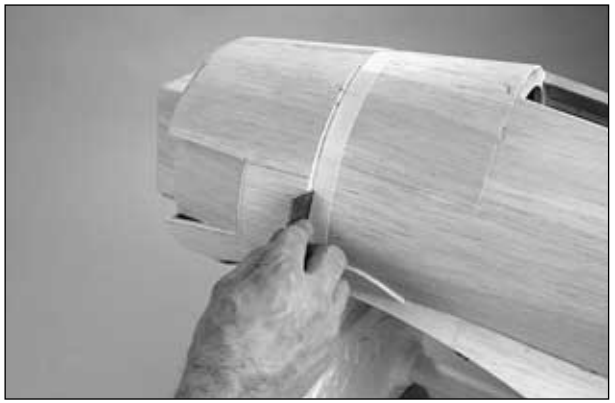


❏ 22. Sheet the left side of the fuse between formers F6A and F5A using a portion of the balsa sheet prepared in the previous step.

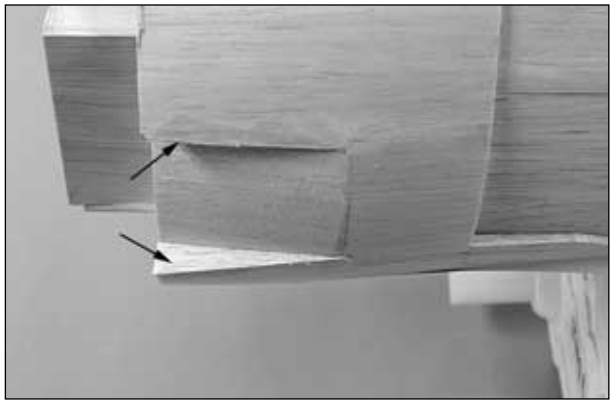
❏ 23. Sheet the same section on the right side of the fuse the same way.



❏ 24. Use the remainder of the 3/32" x 6" x 36" [2.4 x 152 x 914mm] balsa sheet to sheet the left side, then the right side of the remaining portion of the fuse from former F5C forward.



❏ 25. Use masking tape to protect the sheeting, then sand the aft edge of the sheeting over former F5C. (We made a handy sanding tool from a piece of 1/8" [3.2mm] plywood and applied Great Planes 120-grit adhesive back sandpaper to it.)



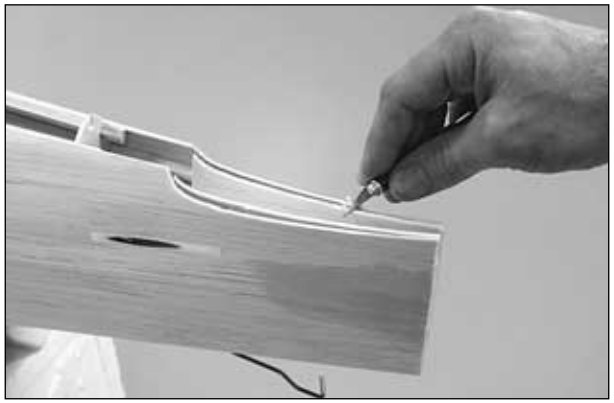
❏ 26. Fill the open spaces on the top and bottom of the exhaust outlet with leftover 1/16" [1.6mm] balsa sheeting.

❏ 27. Apply lightweight balsa filler to the fuse where needed and allow to dry. Sand the fuse blending the individually sheeted sections together and smoothing the balsa filler.

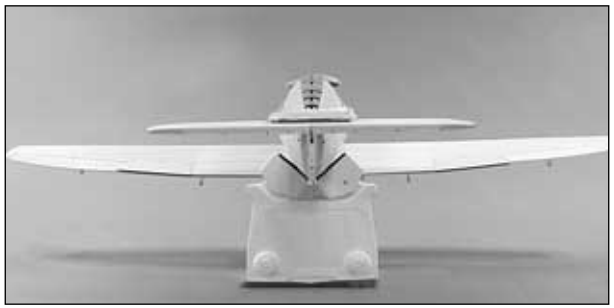
Another version of the Sea Fury, the Mk.11, was a fighter-bomber capable of carrying a combination of 1000-pound bombs, rockets, drop tanks and napalm tanks. The arresting hook was made longer, and a provision was made for the addition of rocket-assisted take-off. In seven years, 615 Sea Fury Mk. 11s were delivered to the Royal Navy, eventually becoming the Fleet Air Arm's principal single seat fighter until the introduction of the Sea Hawk in 1953.

Join the stab to the fuse

❏ 1. Final sand the aft end of the fuse, as it is easier to do so now before the stab is glued into position.



❏ 2. If you haven't done so already, carefully and accurately trim the fuse sheeting even with the ply lower stab saddles.



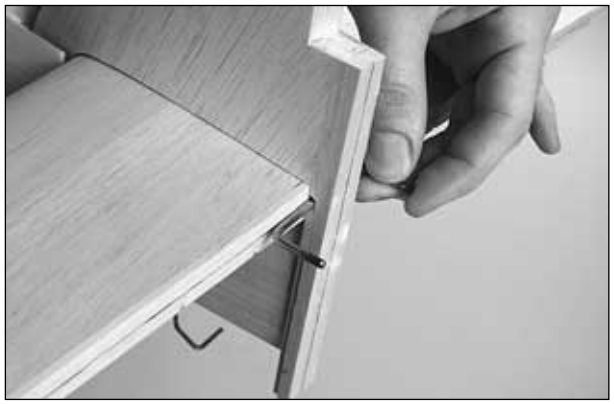
❏ 3. Bolt the wing to the fuselage. Place the model upright in your building cradle. Position the stab on the stab saddles in the fuse and place a weight on top of the stab to hold it down. Stand about eight feet behind the model and view the alignment of the wing and stab. If necessary, carefully trim the "high" ply stab saddle until the stab is parallel with the wing. Use care while trimming so as not to change the stab incidence.

❏ 4. Once the stab is parallel with the wing, use the pin-and-string technique to align the stab the same as was done with the wing (making sure the stab is centered side-to-side in the fuse).

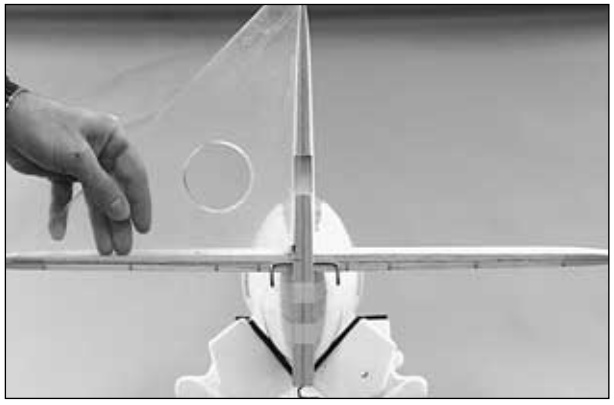
❏ 5. If you wish to check the stab incidence with an incidence meter, now is the time to do so. Make adjustments if necessary.

❏ 6. Once the stab alignment has been confirmed, glue the stab into position with 30-minute epoxy. For additional strength, and to keep the epoxy from running out of the glue joint, add a small amount of Great Planes milled glass fibers to the epoxy. Apply epoxy to both the ply lower stab saddles and to the stab, then position the stab on the fuse. Place weight on top of the stab to hold it down. From behind the fuse, view the glue joint between the lower stab saddles and the bottom of the stab inside the fuse to make sure there is a small bead of epoxy. If necessary, use a piece of music wire to apply additional epoxy to the area inside the fuse. Wipe away excess epoxy outside the fuse before it hardens. Confirm stab alignment one last time and do not disturb the model until the epoxy has hardened.

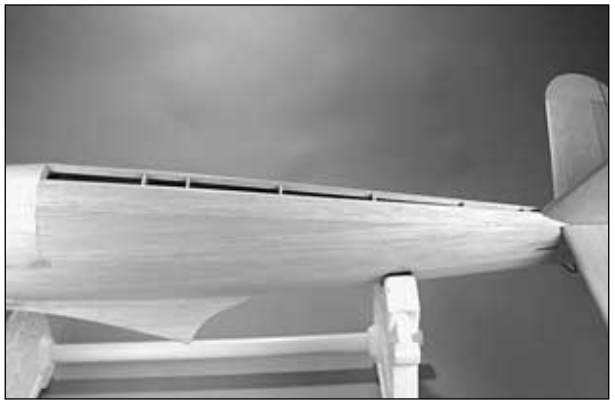
Join the fin to the fuse



❏ 1. Cut a round notch in the fin trailing edge to accommodate the elevator joiner wire. Test fit the fin to the stab and fuse with the joiner wire. Make adjustments to the fit of the fin to the stab and the fuse for a good fit. Test fit the elevators to the stab with the joiner wire. Move the elevators up and down to make sure the notch in the fin is large enough to allow full movement of the elevators.



❏ 2. Once a good fit between the fin and stab has been achieved, permanently glue the fin to the stab and fuse with 30-minute epoxy (don't forget to position the elevator joiner!). The same as when gluing the stab to the fuse, add a small amount of milled glass fibers to the epoxy. Join the fin to the stab and hold it in position with masking tape, T-pins or other suitable method until the epoxy hardens. Be certain the fin TE is centered on the aft end of the fuse and the fin LE is centered between the front of the stab saddles. Before the epoxy hardens, hold a square to the centerline on the fin TE to see if it is perpendicular to the centerline on the TE of the stab. If necessary, use masking tape to pull the fin to one side or the other until the fin is vertical.



❏ 3. Trim a 1/4" x 1/4" x 36" [6.4 x 6.4 x 914mm] balsa stick to fit between former F6A and the fin LE. Glue the stick into position. Sheet one side, then the other of the remaining open section on the top of the fuse with a 3/32" x 3" x 36" [2.4 x 76 x 914mm] balsa sheet.

❏ 4. Glue the die-cut 1/16" [1.6mm] plywood **fin fillet** to the center of the fin and the fuse. Cover both sides of the fin fillet with leftover 1/8" [3.2mm] balsa, then add lightweight balsa filler to blend the fin fillet to the fuse and fin. Sand when dry.

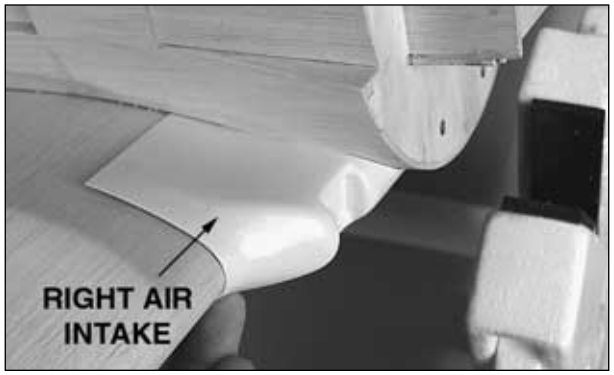
❏ 5. Temporarily join the rudder to the fin with the hinges. Sand the bottom of the fin TE and the rudder to match the shape of the bottom of the fuselage. Round the bottom of the rudder.

NOW does it look like a Stuka? No? Good, because it's a Sea Fury!

Fit the air intakes

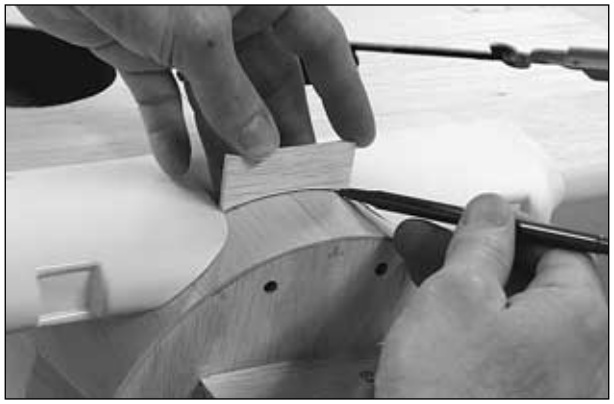
❏ 1. If you haven't done so already, final-sand the wing with progressively finer grits of sandpaper ending with 400 or 600-grit.

❏ 2. Mount the wing to the fuselage. Cut the molded ABS plastic **left air intake** for the carb/oil cooler along the cutlines. Test fit the intake to the left side of the fuse and wing. Trim as necessary for a good fit. Temporarily tape the intake to the wing.



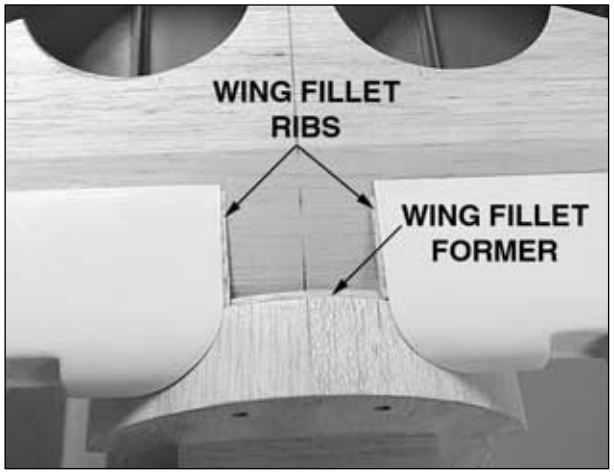
❏ 3. Trim and fit the **right air intake** for the carb to the right side of the fuse and wing and tape it into position the same way.

❏ 4. Once satisfied with the fit of the right and left air intakes, carefully glue them to the wing only with thin CA.

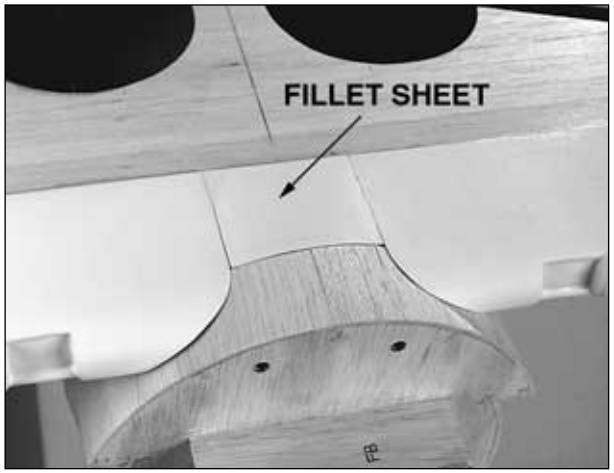


❏ 5. Cut a piece of leftover 1/8" [3.2mm] balsa to fit between both air intakes on the front of the wing. Position the piece of balsa between the intakes, then use a ballpoint pen to draw the outline of the bottom of the fuse onto the piece. This will be the **wing fillet former**.

❏ 6. Cut the wing fillet former along the line, then test fit it to the wing and fuse. Trim the wing fillet former until it is slightly smaller than the bottom of the fuse sheeting to accommodate the ABS filler sheet that will be glued into position later.



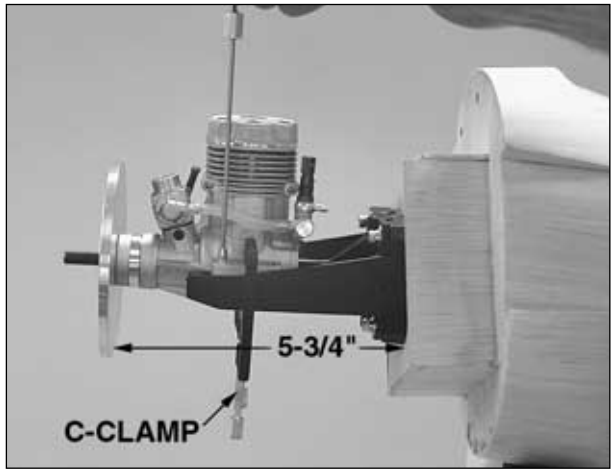
❏ 7. Make two **wing fillet ribs** from leftover 1/8" [3.2mm] balsa that fit under the edges of the air intakes. Glue the fillet ribs and the fillet former into position. Note that the middle of the fillet ribs aligns with the edges of the air intakes.



❏ 8. Cut out, then trim the ABS plastic fillet sheet to fit between the fuse and the air intakes. Glue the fillet sheet to the wing only.

Mount the engine

Refer to this photo to mount the engine.



❏ 1. Mount the engine mount to the firewall with four 8-32 x 1" [25.4mm] socket-head cap screws and four #8 lock washers and flat washers. Do not tighten the screws all the way. Fit the engine to the mount. Adjust the spacing of the engine mount halves to accommodate the engine and tighten the screws.

❏ 2. Fit the back plate of the spinner on the engine. Use small clamps to temporarily hold the engine to the mount so the back plate of the spinner is 5-3/4" [146mm] from the firewall.

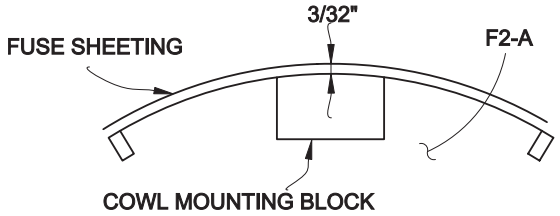
❏ 3. Use a Great Planes Dead Center™ engine mount hole locator (GPMR8139) or your own method to mark the location of the engine mounting bolt holes on the engine mount.

❏ 4. Remove the engine from the mount. Drill #29 holes at the marks and use an 8-32 tap to tap threads into the holes.

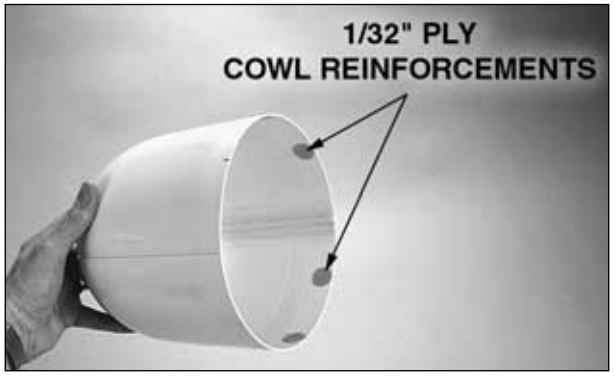
❏ 5. Mount the engine to the mount with four 8-32 x 1" [25.4mm] socket-head cap screws and #8 lock washers.

Mount the cowl

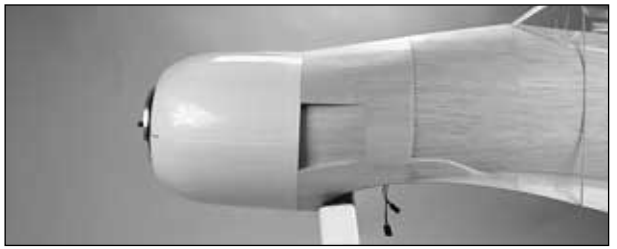
1. Cut six 1" [25mm] long **cowl mounting blocks** from the 5/8" x 5/8" x 9" [15.9 x 15.9 x 229mm] basswood stick. Hold one of the blocks to the fuse against former F2, so one edge is just above the fuse sheeting. Use a ballpoint pen to draw the outline of the fuse onto the block. Sand the block to match the line. Mark and round the rest of the cowl mounting blocks the same way. (The cowl mounting blocks and muffler can be seen in following photos.)



❏ 2. Glue the cowl mounting blocks to the fuse with the outer edges inset approximately 3/32" [2.4mm] below the fuse sheeting to accommodate the cowl. If using a two-stroke engine with a Top Flite In-Cowl muffler, test fit the muffler and position the bottom, center cowl mounting block so it will not interfere with the muffler.

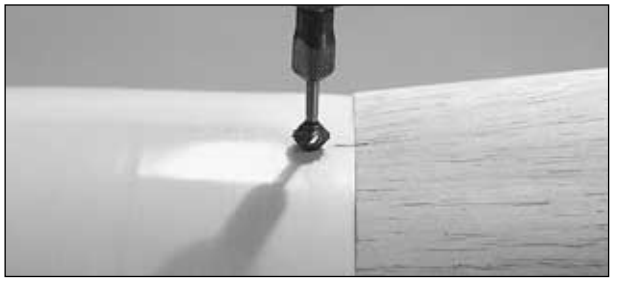


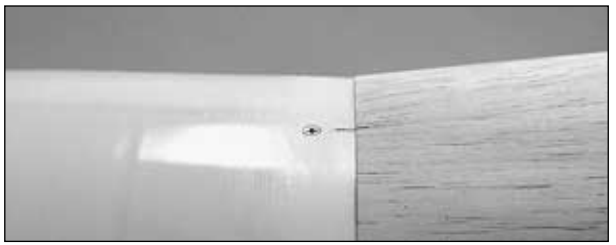
❏ 3. Position the cowl on the fuse. Mark the center of the cowl mounting blocks onto the cowl. Use epoxy to glue the six die-cut 1/32" [.8mm] plywood **cowl reinforcements** inside the cowl centered on the marks.



❏ 4. Reposition the cowl on the fuse. Place the back plate of the spinner on the engine. Viewing the model from the front center the cowl on the back plate. Note where the aft edge of the cowl requires trimming for a good fit to the fuse. **Hint:** roughen the aft inch or so of the outside of the cowl with medium-grit sandpaper. Use a pencil to mark the “high spots” on the cowl where trimming is required.

❏ 5. Use a bar sander with 80-grit sandpaper to trim the aft edge of the cowl where required. Reposition the cowl on the fuse and mark and trim as necessary until a good fit is achieved.





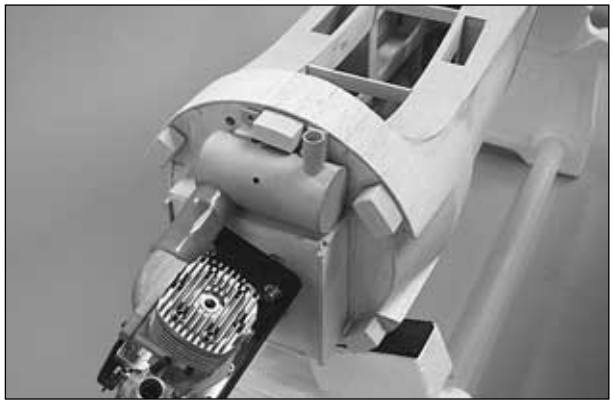
❏ 6. Securely tape the cowl to the fuse. Drill a 1/16" [1.6mm] hole through the cowl into one of the cowl mounting blocks 7/16" [11mm] from the aft edge of the cowl. Use a Dremel #178 cutting bit or something similar to enlarge the opening of the hole for the head of a #2 x 3/8" [9.5mm] flat head screw. Install the screw.

❏ 7. Drill the remaining five holes and enlarge the openings and install the screws.

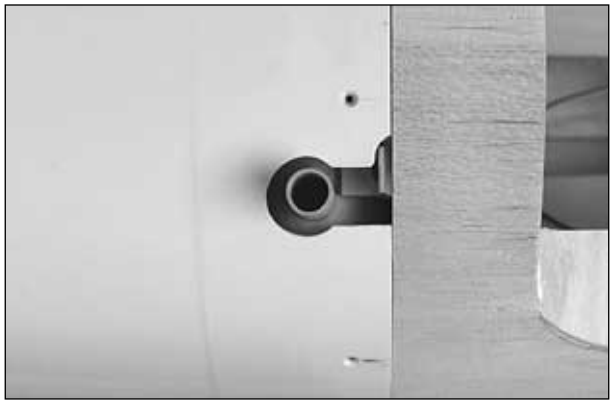
❏ 8. Where necessary, sand the fuse sheeting even with the cowl. Remove the cowl and harden the holes in the cowl mounting blocks with thin CA. Allow to fully harden before mounting the cowl.

Finish the engine compartment

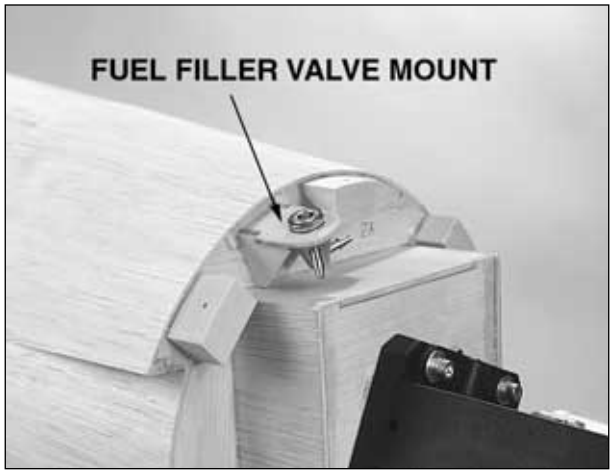
We're just about done with the front end of the fuse and the cowl, but first the muffler, fuel filler, etc. must be mounted and accompanying holes cut into the cowl.



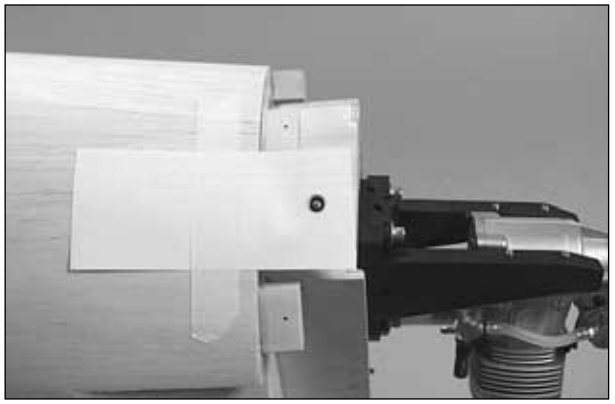
❏ 1. If using a two-stroke engine with a Top Flite in-cowl muffler, mount the header to the engine and connect it to the muffler with a long silicone connector. Aerotrend 3/4" [19mm] inside diameter silicone tubing was used on this model (AERG2220). Mount the muffler to former F2 using the screws that came with the muffler.



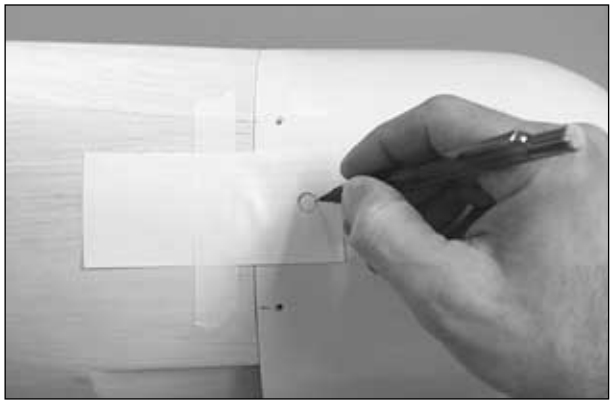
❏ 2. Trim the cowl to accommodate the muffler. A Dremel sanding drum works well for this.



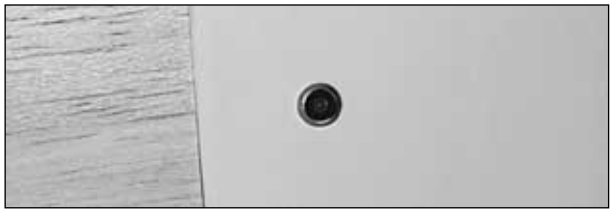
❏ 3. Make a mount for the fuel filler valve from a Great Planes Handy Mounts set (GPMQ6000), or from leftover 1/8" [3.2mm] plywood. Mount the fuel filler valve (GPMQ4160, not included) to the mount. Use 30-minute epoxy to glue the mount in a location that will be accessible outside the fuse. Some modelers prefer to mount the fuel filler valve in an inconspicuous location such as near the bottom of the fuse, but the filler valve can be difficult to reach in this location.



❏ 4. Cut holes in the cowl for the fuel filler valve, needle valve, glow plug igniter, etc. This can be done by making templates. First cut a hole in a sheet of paper and tape it to the fuse with the hole aligned over the fuel filler valve.



❏ 5. Mount the cowl and transfer the hole in the template to the cowl.

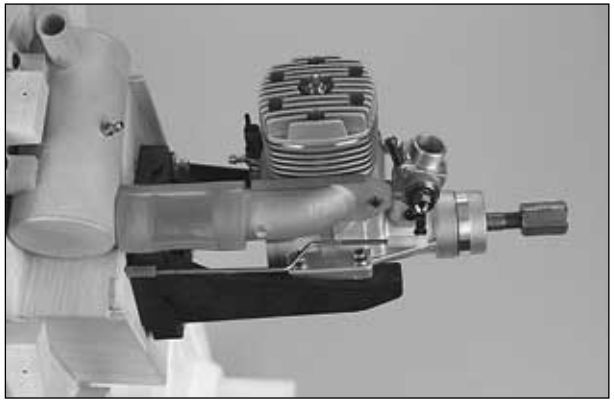


❏ 6. Cut the hole in the cowl. Mount the cowl to check the alignment of the hole over the fuel filler valve. Make adjustments where necessary.

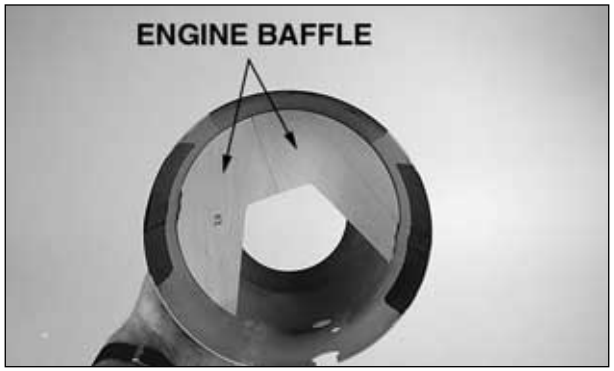
❏ 7. Cut the rest of the holes in the cowl the same way.

❏ 8. Assemble the fuel tank. Study the following photos and examine your particular engine mounting setup to determine the positioning of the fuel tank, servo tray and throttle pushrod. Take a few moments to plan the installation. Be certain the throttle pushrod and fuel tank will not interfere with each other. The servo tray can be used to hold the tank in position. If you intend to duplicate the setup depicted in this manual, most of the work has already been done for you!

❏ 9. Drill a 3/16" [4.8mm] hole through the firewall for the throttle pushrod guide tube. Cut a piece of 3/16" [4.8mm] guide tube leftover from the elevator or rudder to a length of 2" [50mm]. Roughen the outside so glue will adhere, then insert the guide tube into the hole you drilled in the firewall.

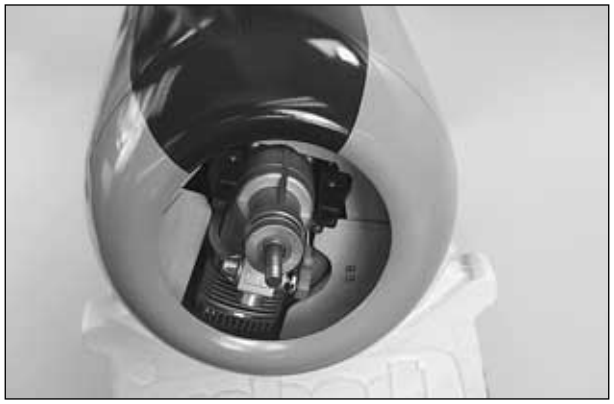


❏ 10. Bend the 18" [457mm] wire pushrod as required to align with the arm on the carburetor. Temporarily connect the pushrod to the carb with a nylon ball link and a 0-80 ball and 0-80 nut.



❏ 11. Glue both of the larger pieces of the die-cut 1/8" [3.2mm] plywood **engine baffle (EB)** together. Test fit the engine baffle inside the cowl. Rotate the baffle so the opening will be centered over the head of the engine. Trim the baffle as necessary so it can be positioned inside the cowl halfway over the engine as shown on the plan. (Although the cowl in the photos is already painted, yours should not yet be).

❏ 12. Use medium CA to tack-glue the baffle into position. Test fit the cowl to the fuse and trim the baffle as necessary to clear the engine.

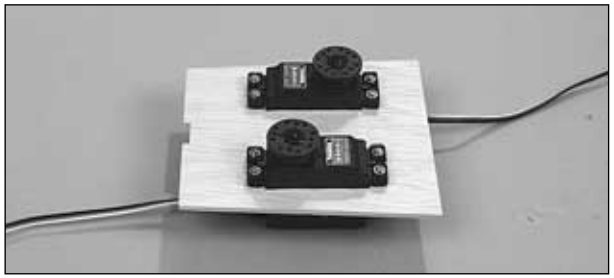


❏ 13. Trim the remaining two smaller portions of the engine baffle as necessary to fit close to the cylinder and head of the engine. Glue them into position.

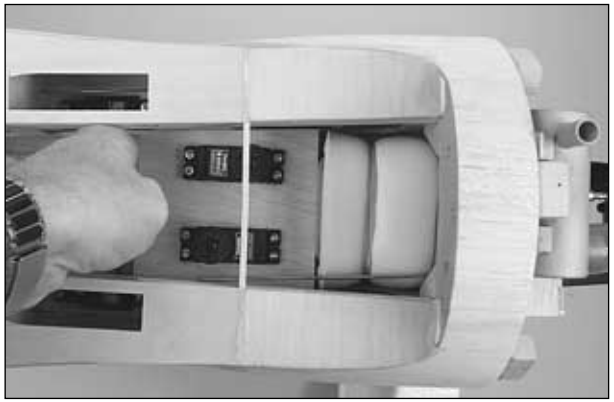
❏ 14. Use 30-minute epoxy and microballoons to make a small fillet all the way around both sides of the baffle securely gluing it to the inside of the cowl.

Complete radio installation

❏ R1. If installing retracts, connect about 12" [300mm] of air line to the air tank. Glue the tank into position where shown on the plan with RTV silicone or epoxy. **Hint**: If using epoxy, roughen the tank where it will contact the formers with coarse sandpaper.



❏ 2. Test fit the throttle servo and retract air valve servo (if using retracts) in the die-cut 1/8" [3.2mm] plywood **servo tray (ST)**. If necessary, enlarge the openings in the tray to accommodate the servos. Glue strips of leftover 1/8" [3.2mm] plywood to one side of the tray to reinforce the servo mounting screws. Mount the servos to the servo tray with the screws that came with the servos.



❏ 3. Wrap the fuel tank with 1/2" [13mm] R/C foam rubber. Place the fuel tank and the servo tray in the fuse. Hold the servo tray up to the rear of the tank to determine exactly how the tray and the tank will be positioned. The servo tray may be positioned against the aft edge of the tank to hold it in position.

❏ 4. Once the location of the servo tray has been determined, mark the ply fuse sides where the servo tray mounting rails are to be positioned. Be certain not to position the servo tray too low causing the air valve to contact the top of the wing. Cut the **servo tray mounting rails** from the 1/4" x 1/4" x 18" [6.4 x 6.4 x 457mm] basswood stick and glue them into position.

❏ R5. If installing retracts, mount the retract air valve using the die-cut 1/8" [3.2mm] plywood **air valve mount**. Connect the air valve servo to the air valve using a pushrod and hardware of your preference (not included). As can be seen in following photos, a ball link was used on the air valve and a Z-bend was used on the servo arm.

❏ 6. Mount the servo tray to the rails with four #2 x 3/8" [9.5mm] screws (don't forget to harden the holes in the rails with thin CA first). Cut the throttle pushrod to the correct length, then connect it to the throttle servo with a screw-lock connector, a retainer and a 4-40 x 1/8" [3.2mm] screw.

❏ 7. Drill 1/4" [6.4mm] holes through the firewall for the fuel lines. Temporarily connect the fuel tank to the fuel filler valve and the pressure fitting on the muffler. When it's time to permanently mount the tank, glue a piece of leftover balsa to the ply fuse sides across the bottom of the tank to securely hold it in position (this may be done after the model has been covered and the firewall and fuel tank mounting area has been fuelproofed).

While working on the servos inside the fuse, now is a good time to mount the elevator and rudder control horns.

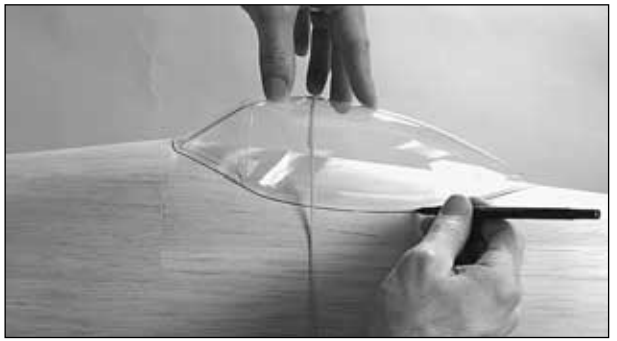
❏ 8. Temporarily connect a nylon clevis to a large control horn and screw it onto the elevator pushrod. Mount the control horn to the elevator with #2 x 3/8" [9.5mm] screws the same as was done on the flaps and ailerons (don't forget to harden the mounting area and screw holes with thin CA first).

❏ 9. Temporarily connect the rudder pushrod to the rudder the same way. **Note:** The battery pack and receiver will be mounted and the rudder and tail steering pushrods will be linked after the model has been covered.

Cut the cockpit opening

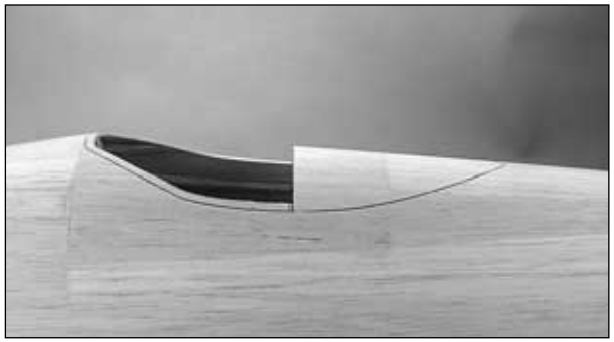
❏ 1. Trim the canopy along the molded-in cutlines. True the edges with a bar sander and 80-grit sandpaper. Smooth the edges of the canopy with 320 or 400-grit sandpaper. Wash the canopy in soapy water, then rinse and dry.

❏ 2. Position the canopy on the fuse and hold it in place with a rubber band. Position the front of the canopy over the seam in the fuse sheeting at former F6 as shown in the following photo. View the canopy from the top, sides and front to make certain it is centered.



❏ 3. Use a ballpoint pen to mark the outline of the canopy onto the fuselage.

❏ 4. Remove the canopy. From inside the fuselage, stick a T-pin through the sheeting against the front edge of former F7 on both sides of the fuse. Wrap a piece of tape around the fuse top connecting the T-pins. With a ballpoint pen draw a line along the edge of the tape that is contacting the pins.



❏ 5. Cut the sheeting along the line over F7 and 3/16" [4.8mm] inside the outline of the canopy. True the edges of the opening with a hobby knife followed by sanding.

❏ 6. Paint the inside of the cockpit before the model is covered. Otherwise, the paint may soak through the sheeting and contact the back of the covering making marks which may be seen from the outside. If installing the Top Flite scale cockpit, test fit it at this time referring to the instructions included with it.

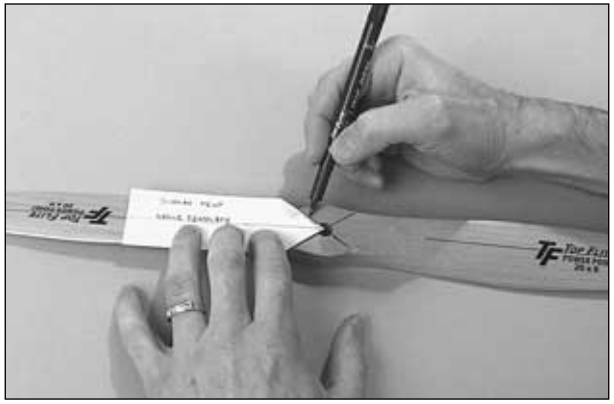
Sea Fury Fact

In 1961 Cuban-piloted Sea Furies were in action against the CIA-sponsored *Bay of Pigs* invasion.

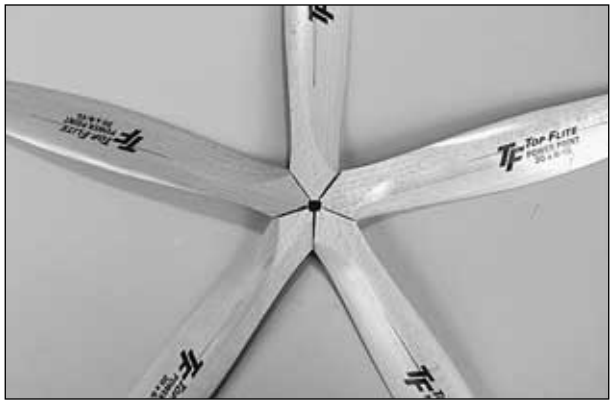
Scale display propeller

There are several ways to make a display prop, but the method shown in this manual uses three Top Flite 20" [510mm] wood propellers (though 22" [560mm] props would be closer to scale).

The full-size Sea Fury has a propeller diameter of 153" [3,886mm]. At 1/7th scale (1:7.07 to be more precise), a scale propeller for this model would have a diameter of 21.6" [550mm]. Of course, this is for non-flying display only. Note: The original Sea Fury had a five-blade clockwise rotating prop, but some restored racing versions use four-blade counter-clockwise rotating props.



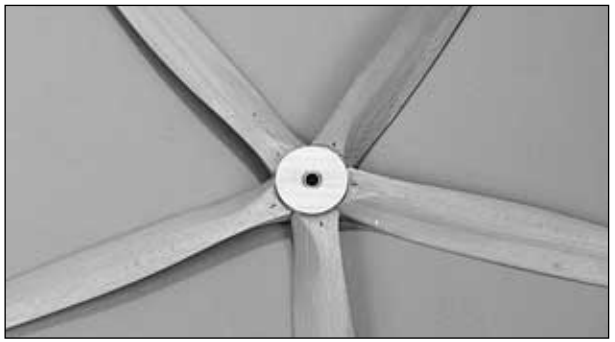
❏ 1. Draw a centerline down the front of one of the propellers. Place the display prop angle template (found on back cover) on one of the propellers. Align the centerline on the template with the centerline on the prop. Mark the prop along the template where it is to be cut. Mark the other end of the prop and two more propellers the same way.



❏ 2. Cut the propellers at the lines you marked. There are now six propeller blades, five of which will be used to make the static display prop. Test fit the propellers to see how they fit. Make adjustments where necessary.

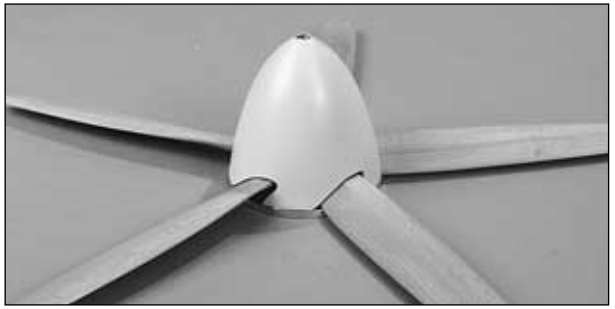
❏ 3. If necessary, shape the propellers to match the propellers in your scale documentation. The tips of the blades used on this model were rounded and the curvature along the trailing edge was decreased.

❏ 4. One at a time, use medium CA to glue the blades together. CA is recommended so you can hold blades flat on the workbench until the glue hardens.



❏ 5. Use epoxy to glue a 2" [50mm] disc made from 1/8" [3.2mm] plywood to the front of the blades to reinforce the glue joints.

❏ 6. Enlarge the mounting hole in the prop to accommodate the crank shaft on the engine. Test fit the propeller to the engine.



❏ 7. Cut the spinner to accommodate the propellers. A Dremel tool with a carbide cutter was used on the plastic C.B. spinner shown. The spinner in the photo was originally black, and is shown in the photo with a coat of Lustrekote white primer. The propeller and spinner are now ready for finishing and painting to match your trim scheme.

FINISHING

Final preparations

At this point all the major airframe construction should be completed. If you plan to add scale details not featured in the manual, consider whether to add them before or after the model has been covered.

❏ 1. If you haven't already done so, remove all components from the plane that will interfere with sanding, covering and painting such as the engine, pushrods, landing gear etc. Disconnect the clevises from the elevator and rudder. Slide the pushrods back into the guide tubes so they won't be sticking out of the fuse when final-sanding and covering.

❏ 2. Inspect all surfaces for uneven glue joints and seams that require filler. Apply filler where needed. Many small dents or scratches in balsa can be repaired by moistening the area with water and allowing to dry. This will swell the wood so it can be sanded smooth when dry.

❏ 3. Final sand the entire model with progressively finer grits of sandpaper, finishing with 400-grit. Don't press down too hard while sanding over sheeted areas (*which is pretty much the whole model!*). This can cause thin spots in the sheeting over ribs and formers. It's also helpful to use fresh, new sandpaper.

Trim scheme

The Sea Fury on the kit box was inspired by a Sea Fury used for pylon racing. Although it is a racing trim scheme, it is also representative of a wartime trim scheme. The model was covered in Top Flite MonoKote dove gray and insignia blue. The wing fillets and the top of the fuse aft of the invasion stripes were covered in dove gray, then painted with Top Flite LustreKote insignia blue. All the plastic parts (except for the canopy) and the cowl were painted with LustreKote as well. The invasion stripes on the wing and fuse were made from black and white MonoKote. If painting the model instead of using iron-on film, the balsa sheeting must first be sealed–typically by covering the structure with light-weight glass cloth and polyester or epoxy resin. There are many products in the hobby industry specially developed for this purpose. Glass cloth and resin is the most durable and long-lasting way to finish a balsa model, though it is also the most time consuming and has the potential to add much weight if not done correctly.

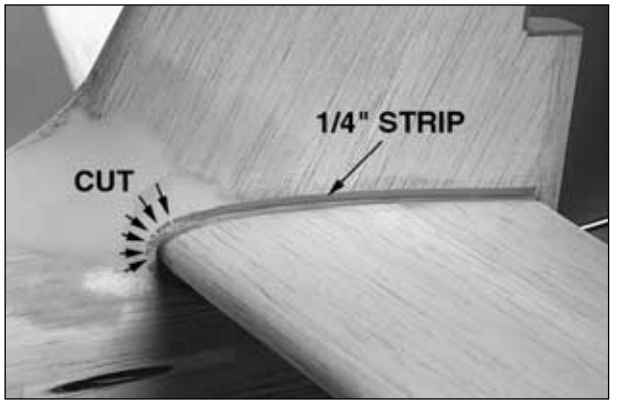
If you prefer not to duplicate the trim scheme on the kit box, design your own trim scheme or follow your documentation photos.

The following instructions provide details on how to finish the Sea Fury like the model on the kit box cover using MonoKote film and LustreKote paint.

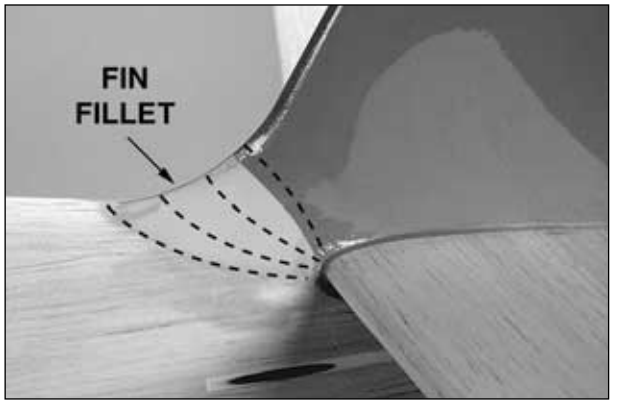
Cover the model

Warning: Never cut the covering on critical structural areas of the model such as the stab sheeting, fin sheeting and wing sheeting—especially near the fuse where the stresses can be high. Modelers who cut the covering on the model tend to cut into the sheeting, weakening it. Occasionally, it may be necessary to make a small cut in the covering here and there. This is acceptable as long as the cut is small and is not over sheeting on a critical area. Cuts that go across the grain weaken the balsa more than cuts that go with the grain.

❏ 1. Use a dust brush, compressed air or a Top Flite Tack Cloth to remove all balsa dust from the model. Thoroughly clean your work area, removing any balsa dust or particles that could get underneath the covering. Get out your covering tools and "gear up" your work shop for covering.



❏ 2. Cover the most difficult parts first starting with the fuse. Use a trim seal tool to iron 1/4" [6.4mm] wide strips of covering where the fin and stab join. Cut the covering where necessary so it can go around the leading edge.



❏ 3. Cover both sides of the fin overlapping the 1/4" [6.4mm] strips at the base. The fin fillet is covered separately in multiple pieces of gray, then painted blue later.

❏ 4. Cover the bottom, then the top of both sides of the stab.

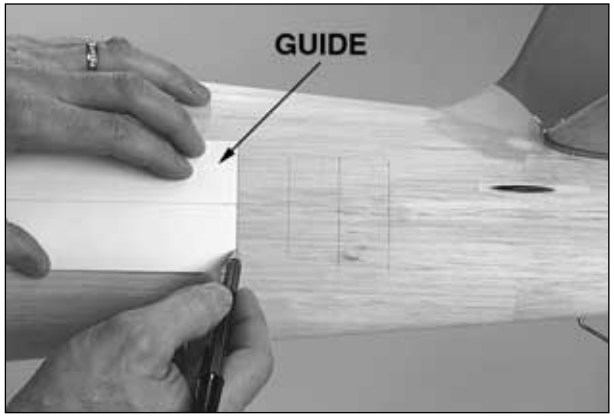
❏ 5. If the trim scheme you have selected features invasion stripes, use your own method or the **Hot Tip** that follows to make invasion stripes from MonoKote.

HOT TIP

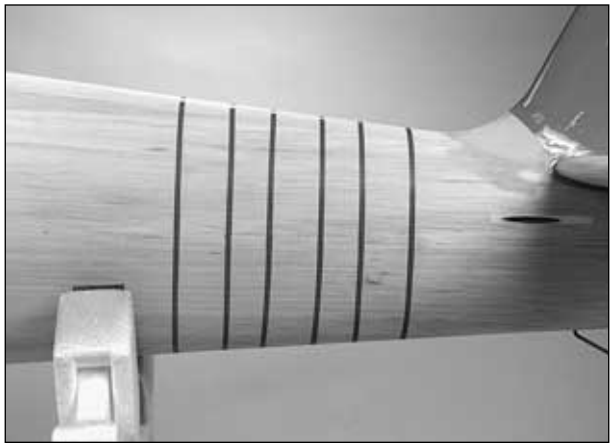
HOW TO MAKE INVASION STRIPES

A. Mark the location of each invasion stripe along the side stringer on both sides of the fuse. Take accurate measurements to make certain both sides of each stripe will align. The stripes on the prototype are 1-1/8" [27mm] wide (which may be slightly wider than scale, but the wider the stripes, the less noticeable inconsistencies will be).

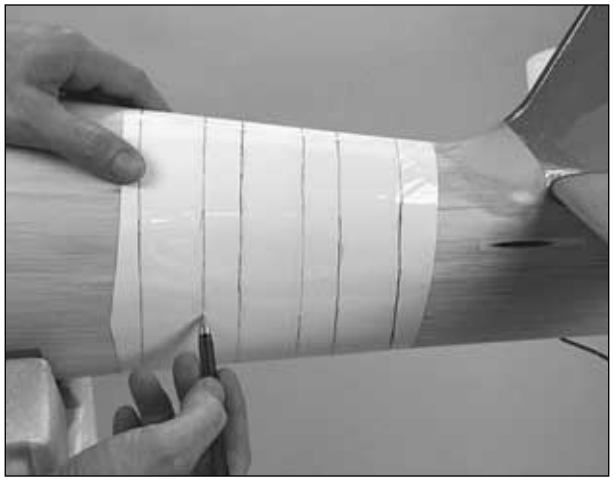
B. Referring to the following photo, make a *guide* by drawing a line down the center of an approximately 6" x 4" [150 x 100mm] sheet of heavy paper or cardstock. Accurately cut one end of the cardstock so it is straight and perpendicular to the line.



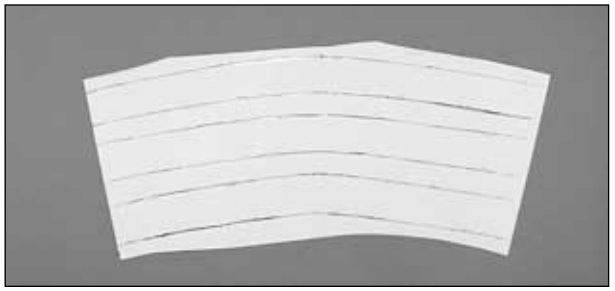
C. Hold the guide on the fuse with the squared-up edge at one of the marks you made on the side stringer. Center the line on the guide over the side stringer. Use a ballpoint pen to lightly draw a line along the end of the guide directly onto the fuse sheeting approximately 1-1/2" [38mm] above and below the stringer. This line will serve as a starting point for the invasion stripes. Draw similar lines at the remaining marks made on the side stringer on both sides of the fuse.



D. Using the lines you drew as a guide, mark the invasion stripes by wrapping strips of 1/8" [3.2mm] flexible masking tape around the fuselage. Be patient and view the fuselage from all directions to make sure each line is true and parallel with the next. Lift and reposition the tape as necessary.

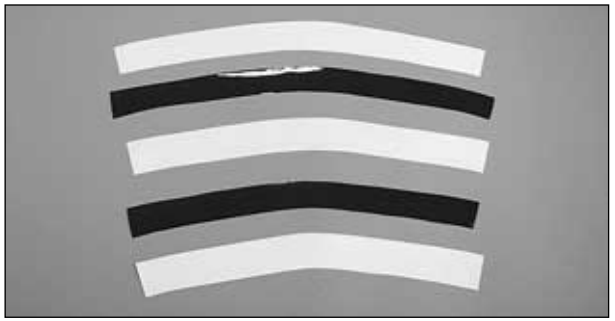


E. Tightly tape a piece of white MonoKote around the fuselage over the tape lines. Using the tape under the covering as a guide, draw the white invasion stripes directly onto the covering with a ballpoint pen. Remember to draw on the outer edges of the tape so the black stripes will overlap the white stripes by 1/8" [3.2mm].

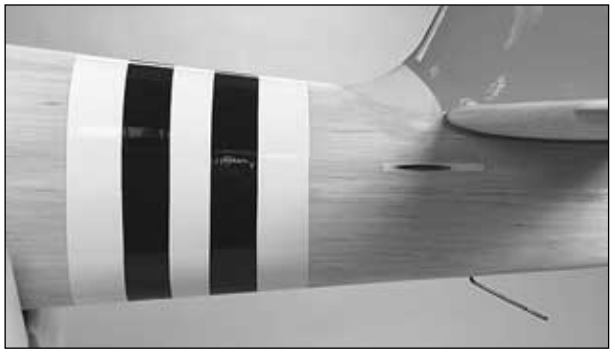


F. Remove the covering from the fuse. Cut out the white invasion stripes along the lines. Wipe away residual ink with a tissue dampened with alcohol.

G. Make the black stripes the same way.



H. Test fit the stripes to the fuse. Trim imperfections from the edges of each stripe where necessary. Hint: Use a straightedge and a sharp #11 blade to trim the front edge of the stripes, and something with a curved edge (such as a french curve) to trim the aft edge of the stripes.



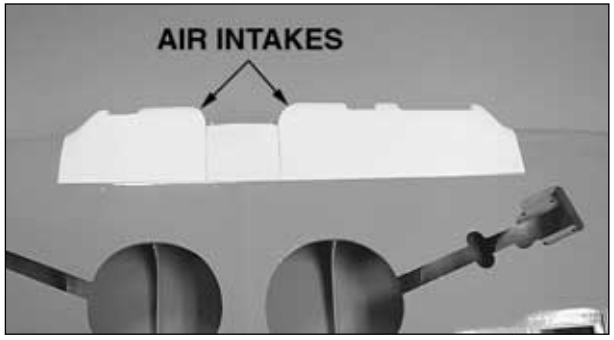
I. Iron the invasion stripes into position.

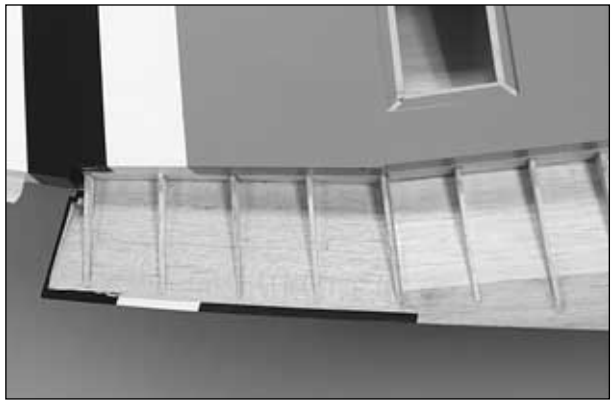
❑ 6. Cover the protruding portions of former F5B with flat black or black MonoKote. Also cover the top portion of the air passage fairings as shown in the photo.

❑ 7. Cover the remainder of the fuse in the following suggested order:

Bottom
Wing fillets
Fuse sides aft of F5B
The exhaust outlet (use chrome MonoKote - *see* preceding photo)
Fuse sides forward of F5B
Top
Elevators and rudder

Note: The dove gray covering was applied first, followed by the insignia blue top. Do not attempt to cover large areas of the fuse with one piece. Use as many pieces as necessary to eliminate wrinkles and make the job easier–seams are preferable to wrinkles!





❑ 8. Cover the wing beginning with the invasion stripes. For simplicity, straight invasion stripes may be cut on the workbench using a straightedge and a hobby knife. Cover the rest of the bottom of the wing with dove gray followed by the top of the wing with insignia blue. It's easiest to cover each panel (center, left outer, right outer) separately. Before applying the covering to the center section, first cut the covering to accurately fit up to the molded ABS air intakes. When you get to the trailing edge, wrap the covering around the bottom and seal it inside the top skin as shown in the photo.

❑ 9. Cover the ailerons and flaps.

Arresting hook

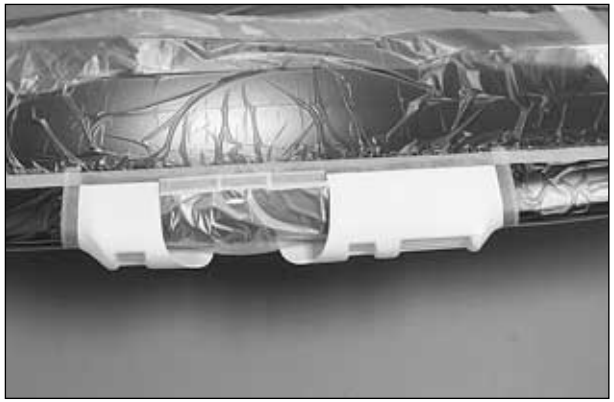
Though the trim scheme featured on the kit box model is of a racing plane that doesn't have an arresting hook, we made one anyway (for illustration purposes should you decide to make one–especially if doing a military trim scheme). The hook was carved from basswood, then glued into a 3/16" [4.8mm] aluminum tube. The other end of the tube was glued to a pinned hinge (the same kind of hinge used to hinge the flaps). Drill a hole in the end of the fuse to accommodate the hinge. The rest of the bracketry was made from a 2-56 screw and nut and parts of a nylon Faslink. For security and durability, a small pin was used to secure the arresting hook to the rudder after the model was covered and the hook was painted (though no such pin exists on the real plane).

Painting

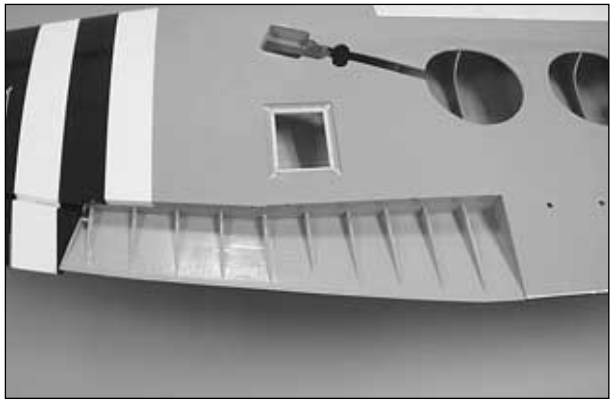
With the exception of the canopy frame, all of the parts on the model that were painted were painted with Top Flite LustreKote (see instructions for painting the canopy later in the manual). For small parts where light coats of paint are required (such as the air intakes already glued to the wing and the machine gun blisters), painting with an airbrush is desired. Though LustreKote is available only in spray cans, there is a way to apply LustreKote with an airbrush. Here's how:

❑ 1. Spray the paint through a tube into a cup. Spraying the paint through a tube keeps most of it from becoming airborne. Allow the paint to stabilize for about an hour before transferring it to the airbrush jar. Stir thoroughly.

❏ 2. Thin as necessary. K & B thinner or Midwest Aero Gloss thinner for fuel proof dope may be used. Other thinners may work, but should be tested for compatibility. Now the LustreKote is ready to spray through the airbrush.

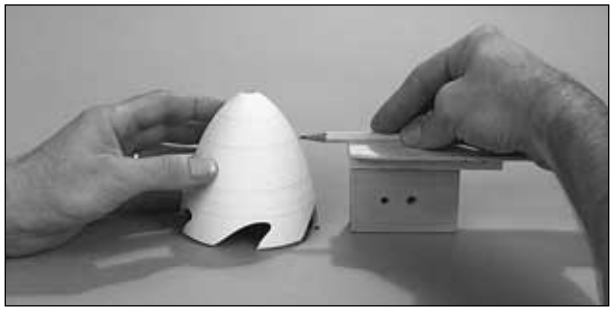


❏ 3. Mask the wing, then paint the air intakes. This will take three steps starting with primer, followed by the gray, then blue.



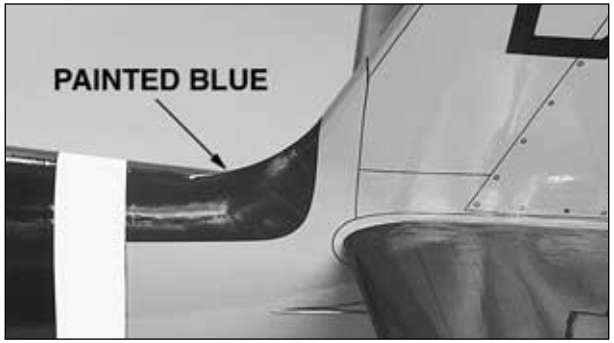
❏ 4. Paint the underside of the top wing sheeting in the flap area gray. Airbrushing is also recommended for this as the paint can be applied in light coats for even, uniform coverage in all the “nooks” and “crannies.”

❏ 5. Paint the cowl with primer, followed by gray, then blue. After the paint has dried, wet-sand the entire cowl, then apply a coat of crystal clear to make it just as smooth and shiny as the model on the box.



❏ 6. To paint the stripes on the spinner, use blocks of wood to prop up a pencil to the correct height. Turn the spinner around the pencil to mark the guidelines for the masking tape. Mask the lines, then paint.

❏ 7. Use epoxy or fuelproof paint to coat the engine compartment area and the engine baffle. Flat black was used on the prototype.



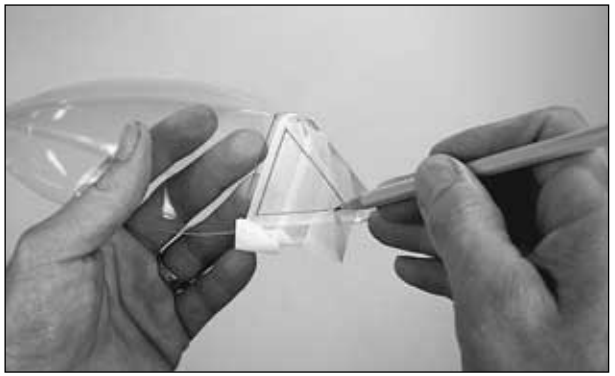
❏ 8. For simplicity, the top of the fuse aft of the invasion stripes and the wing fillets may be painted insignia blue directly over the gray MonoKote.

❏ 9. Cut out the machine gun blisters, then paint to match the trim scheme. To mount the blisters to the wing, hold each one in position and draw a line around it directly onto the wing using a ballpoint pen. Poke several pinholes in the covering just inside the lines you marked. Wipe away ink from the pen with a tissue dampened with alcohol. Carefully glue the blisters into position with a small amount of thin or medium CA.

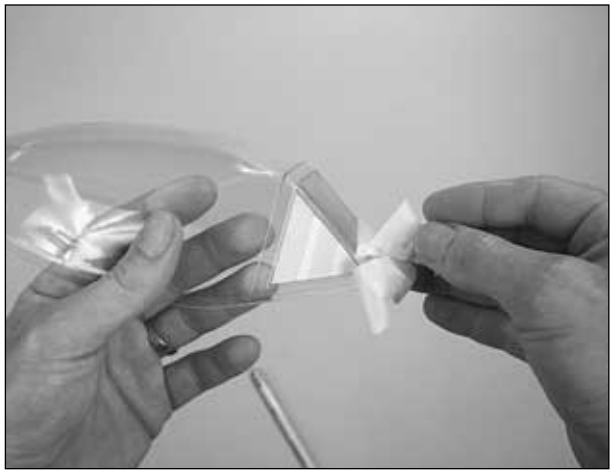
According to last-known records, of the 866 units built, there are currently twenty-two Sea Furies still flying today.

Paint the canopy

Do not paint the canopy with LustreKote. Over time, LustreKote will curl the plastic. Use a paint compatible with butyrate such as Midwest Formula U (#20140 Insignia Blue was used on the prototype) or Chevron Insignia Blue.

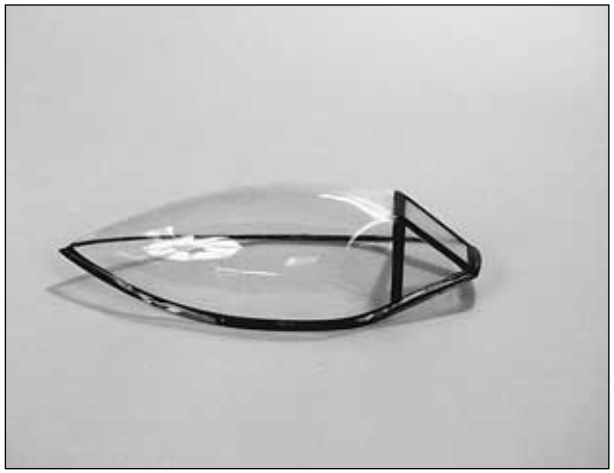


❏ 1. Apply masking tape over one of the front windows. Using the framework as a guide, mark the edges of the window with a pencil while simultaneously pressing the tape down into the corners.



❏ 2. Use a hobby knife with a #11 blade to lightly cut along the pencil lines. Peel the excess tape from the canopy.

❏ 3. Mask the rest of the canopy the same way.



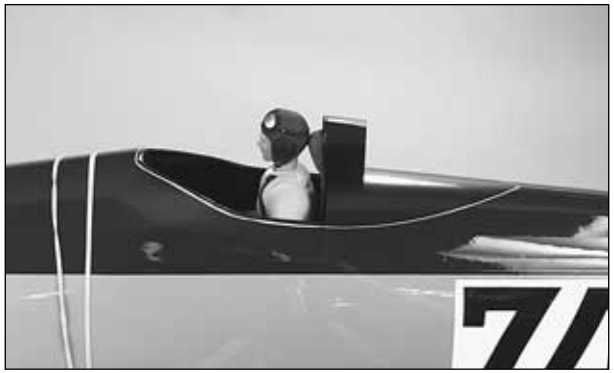
❏ 4. Paint the canopy to match the selected trim scheme.

FINAL ASSEMBLY

Mount the canopy

❏ 1. If not already done, install the cockpit kit (if you've built one) following the instructions that came with it. Install the pilot.

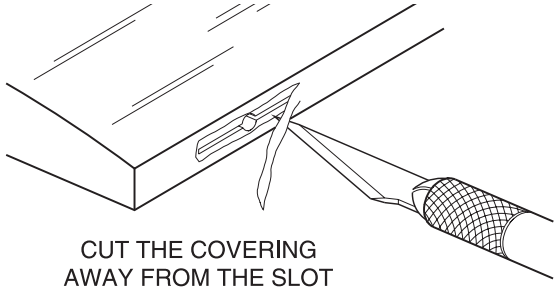
❏ 2. Position the canopy on the fuse. Use a ballpoint pen to trace its outline onto the covering.



❏ 3. Use a hobby knife with a sharp #11 blade to carefully cut a 1/16" [1.6mm] strip of covering from the fuse about 1/16" [1.6mm] inside the lines marked. Remove the covering, exposing the bare balsa.

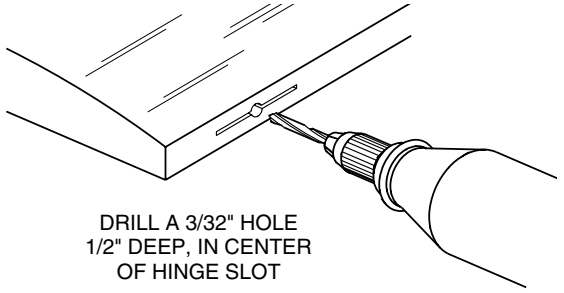
❏ 4. Securely glue the canopy to the fuse using *canopy glue* such as J & Z Products *Z RC/56* (JOZR5007). Use rubber bands or masking tape to hold the canopy in position until the glue dries.

Join the control surfaces



CUT THE COVERING
AWAY FROM THE SLOT

❏ 1. Start with the stab and elevators. Remove a small strip of covering from each hinge slot.

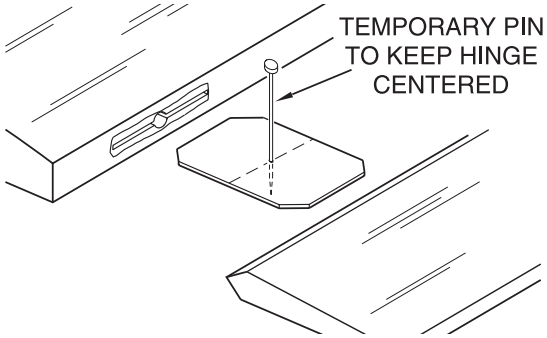


DRILL A 3/32" HOLE
1/2" DEEP, IN CENTER
OF HINGE SLOT

❏ 2. This step is not required if a Great Planes Slot Machine was used to cut the hinge slots. If the hinge slots were cut with a #11 hobby blade, drill a 3/32" [2.4mm] hole 1/2" [13mm] deep in the center of each hinge slot. A high speed Dremel Tool works best for this. If using a drill, clean out the hinge slots with a #11 blade.

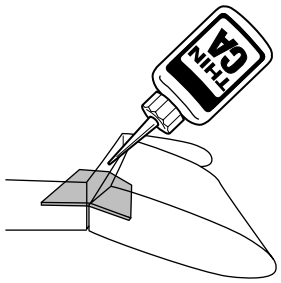
❏ 3. Without using any glue, insert the hinges into the stab. Fill the torque rod holes in the elevators with

30-minute epoxy. **Hint:** Tape strips of wax paper to the stab over the TE at the torque rods to protect the stab from excess epoxy.



❏ 4. Join the elevators to the stab and the joiner wire. Wipe away excess epoxy with a tissue dampened with alcohol. If the hinges don't remain centered, remove the elevators and insert a pin in the center of the hinges. Reinstall the elevators. Make sure there is a small gap between the elevators and the stab–just enough to slip a piece of paper through or to see light through.

Do not use CA accelerator on any of the hinges and do not glue the hinges with anything but thin CA. Do not attempt to glue one half of the hinge at a time. The hinges will not be properly secured and could come out while the model is in flight.



❏ 5. Cut a paper towel into several 2" [50mm] squares. Add six drops of thin CA to the center of the hinges on both the top and bottom. Use the paper towel squares to absorb excess CA from the hinge gap.

❏ 6. Use the same hinging method to join the rudder to the fin and the ailerons to the wing. Excess CA can be cleaned from the hinge gap with CA Debonder (GPMR6039).

Now hinge the flaps...

❏ 7. If you've built working flaps, use a toothpick to apply a small amount of petroleum jelly to the pivot points of the hinges to keep epoxy out.

❏ ❏ 8. Each set of flaps (the left and right) must be attached to the wing simultaneously (while joined with the joiner wire). Use a piece of wire or a toothpick to thoroughly coat the holes in one of the wing halves and the matching set of flaps with 30-minute epoxy. Apply epoxy to one end of the hinges and insert them into the flaps. Apply epoxy to the other end of the hinges with epoxy. Insert the joiner wire into both flaps and join them to the wing. Wipe away excess epoxy before it hardens. Move the flaps up and down several times to make certain all the hinges are in alignment. Allow the epoxy to fully harden.

❏ 9. Join the other set of flaps to the wing the same way. After the epoxy hardens, move the flaps up and down to check their movement and free them up from any residual epoxy that may have seeped into the hinges.

Hook up the controls

❏ 1. Reinstall the pushrods and install any hardware and other components not already in place such as the fuel tank and fuel lines, servos, on/off switch, engine, muffler, fuel filler valve, air filler valve, etc. Connect the flap and aileron servos to a Y-connector (HCAM2751 for Futaba® servos). One of the aileron servos may require a 6" [150mm] extension (HCAM2701) to reach the Y-connector. This will shift the Y-connector to one side of the wing, but there will still be enough of the wire coming out of the wing to connect to an extension on the receiver for connecting during field setup.

❏ 2. Secure connections inside the wing between servo leads and extension cords with tape, heat shrink tubing or special clips suitable for that purpose.

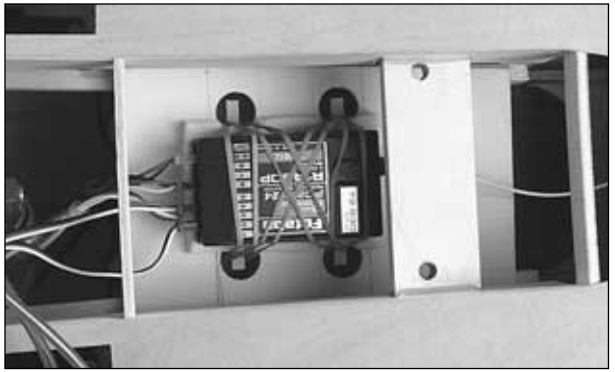
❏ 3. Slip the wheel collar over the rudder and tail wheel steering pushrods. Center the rudder and tail wheel, then securely tighten the set screw in the wheel collar with a small drop of thread locking compound.

❏ 4. If you've installed retracts, route the air lines through the wing. Connect the lines in the fuse to the control valve and the air tank in the fuse . Leave the lines long enough so they can be connected to the landing gear outside of the wing. Connect the air lines to the landing gear, then mount the gear. If you haven't already done so, secure the set screw that holds the axle to the strut and that holds the wheel collars to the axles with a drop of thread locking compound. Add a drop of oil to the axles.

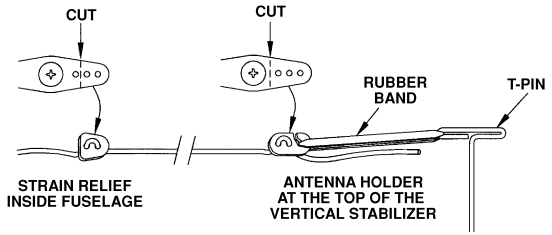
❏ 5. Mount the engine and muffler and hook up all the systems inside the cowl including the fuel lines, in-line fuel filler valve, etc.

❏ 6. The same as instructed for the servo extensions inside the wing, secure connections between the battery lead and the switch. Make certain none of the servo cords will interfere with the landing gear or other systems.

❏ 7. Mount the control horns to the control surfaces (remember that the flap horns are mounted "backwards"). Connect the servos to the receiver. Turn on the radio, center the trims on the transmitter, then center the arms on all the servos except the flap servos. The arms on the flap servos should hold the flaps up when the flap switch (or dial or slider) on the transmitter is in the "up" position.



❏ 8. Mount the receiver and battery pack. There are several ways and locations for mounting, but on the prototype the battery was wrapped in R/C foam and positioned below the fuel tank, then secured with a balsa stick glued between the fuse sides. For the receiver, a 1/8" [3.2mm] lite-ply tray was made and held in place with balsa sticks glued across the inner fuse sides. Before mounting, holes were drilled in the tray and sticks glued across the bottom for rubber bands to secure the receiver.



❏ 9. Make a strain relief and a hook as shown in the sketch from cut-off servo arms. Place the strain relief on the receiver antenna, then route the antenna out of the fuselage. Connect the other end of the antenna to the hook. Connect the hook to the fin via a rubber band and a T-pin.

❏ 10. Mount the on/off switch, external charging jack and air filler valve (if using retracts) in an accessible location that will not interfere with other components or systems inside the fuse.

Apply the decals

1. Make sure the model is clean and free from oily finger prints or other surface imperfections that may interfere with the decals.

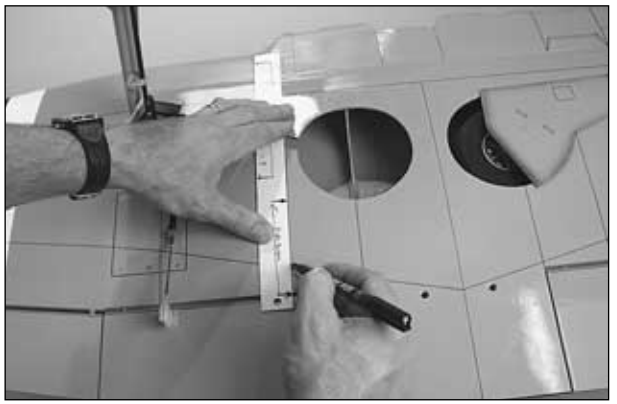
2. Cut out the decals with sharp, clean scissors or a sharp hobby knife. If possible, leave an approximately 1/16" [1.6mm] clear border around each decal.

3. For the best results and easier positioning, separate the decal from its backing while submerged in a container of warm water mixed with liquid dish washing soap (approximately 2 teaspoons of soap per gallon of water from the backing). While still wet, place the decal on the model and position.

4. Without moving the decal, use a paper towel to wipe away most of the water. Use a piece of soft 1/8" [3.2mm] or 3/32" [2.4mm] balsa to squeegee the rest of the water and air bubbles from beneath the decal.

5. Apply the rest of the decals the same way. Allow to dry overnight before flying.

Add panel lines



No warbird would be complete without panel lines. Panel lines give the model a finished, authentic appearance. They may be cut from MonoKote and ironed into position, or drawn directly on the covering with a Top Flite Panel Line pen. For straight lines drawn with a pen, use a thin straightedge such as a metal ruler or a plastic strip as a guide. Apply tape to the underside of the straightedge to raise it off the surface slightly so ink does not bleed underneath. Curved lines, hatches and panels can be drawn using home made templates from thin plastic or cardboard. Top Flite also offers a Scale Template for rivets (TOPR2187). Mistakes may be easily wiped away with a tissue moistened with denatured alcohol.

From handling, over time ink panel lines may fade and smudge in some areas, requiring occasional redrawing. Raw fuel will remove ink panel lines upon contact. When cleaning the model after flying, most window spray cleaners do not effect ink panel lines, but avoid using strong cleaners such as Formula 409.

GET THE MODEL READY TO FLY

Check the Control Directions

❏ 1. Turn on the transmitter and receiver. Center the trims on the transmitter. If necessary, adjust the pushrods so the control surfaces are centered.

❏ 2. Make certain that the control surfaces and the carburetor respond in the correct direction. Reverse the servos where necessary.

Set the Control Throws

Use a Great Planes AccuThrow (or a ruler) to accurately measure and set the control throw of each control surface as indicated in the chart that follows.

NOTE: The throws are measured at the widest part of the control surface.

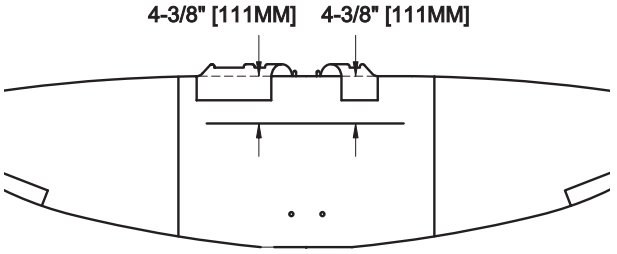
These are the recommend control surface throws:	High Rate	Low Rate
ELEVATOR	5/8" [16mm] up 5/8" [16mm] down	5/16" [8mm] up 5/16" [8mm] down
RUDDER	1-5/8" [41mm] right 1-5/8" [41mm] left	3/4" [19mm] right 3/4" [19mm] left
AILERONS	3/4" [19mm] up 3/4" [19mm] down	3/8" [9mm] up 3/8" [9mm] down
FLAPS	2" [50mm]	

IMPORTANT: The Sea Fury has been extensively flown and tested to determine the throws at which it flies best. Flying your model at these throws will provide you with the greatest chance for successful first flights. If, after you have become accustomed to the way the Sea Fury flies, you would like to change the throws to suit your taste, that is fine. However, too much control throw could make the model difficult to control, so remember, "more is not always better."

Balance the Model (C.G.)

More than any other factor, the C.G. (balance point) can have the greatest effect on how a model flies, and may determine whether or not the first flight will be successful. If you value this model and wish to enjoy it for many flights, **DO NOT OVERLOOK THIS IMPORTANT PROCEDURE.** A model that is not properly balanced will be unstable and possibly unflyable.

At this stage the model should be in ready-to-fly condition with all of the systems in place including the engine, landing gear, covering and paint, and the radio system.



❏ 1. Use a felt-tip pen or 1/8" [3.2mm]-wide tape to accurately mark the C.G. on the top of the wing on both sides of the fuselage. The C.G. is located **4-3/8"** [111mm] back from the leading edge of the center section of the wing. **Note:** This measurement is from the balsa leading edge, not from the molded plastic air intakes. The C.G. Machine may be used to balance the model as shown, but the distance between the plastic air intakes and the LE of the wing must be added to the 4-3/8" measurement of the C.G. location. Take accurate measurements directly from your model to get this distance.

This is where the model should balance for the first flights. Later, you may wish to experiment by shifting the C.G. up to 3/8" [9.5mm] forward or 1/4" [6mm] back to change the flying characteristics. Moving the C.G. forward may improve the smoothness and stability, but it may then require more speed for takeoff and make it more difficult to slow or flare for landing. Moving the C.G. aft makes the model more maneuverable, but could also cause it to become too difficult to control. In any case, start at the recommended location and do not at any time balance the model outside the recommended range.

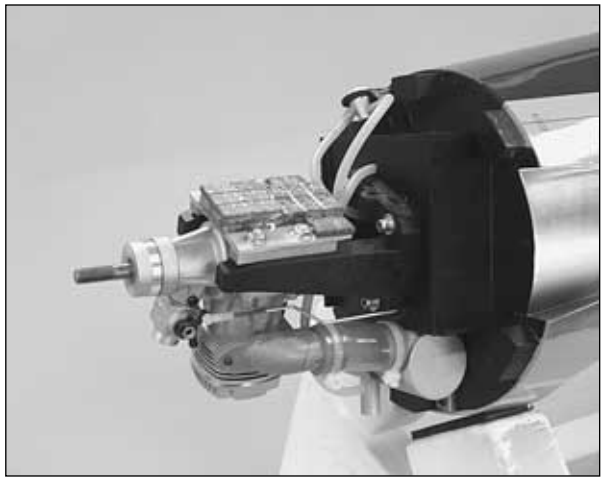
❏ 2. With the wing attached to the fuselage, the landing gear extended (if retracts are installed), all parts of the model installed (ready to fly) and an empty fuel tank, place the model upside-down on a Great Planes CG Machine, or lift it upside-down at the balance point marked on the top of the wing.

❏ 3. If the tail drops, the model is "tail heavy" and the battery pack and/or receiver must be shifted forward or weight must be added to the nose to balance. If the nose drops, the model is "nose heavy" and the battery pack and/or receiver must be shifted aft or weight must be added to the tail to balance. If possible, relocate the battery pack and receiver to minimize or eliminate any additional ballast required. If additional weight is required, nose weight may be easily added by using a "spinner weight" (GPMQ4645 for the 1 oz. weight, or GPMQ4646 for the 2 oz. weight). If spinner weight is not practical or is not enough, use Great Planes (GPMQ4485) "stick-on" lead. A good place to add stick-on nose weight is to the firewall or the engine mount. **Do not** attach weight to the cowl—it is not intended to support weight. Begin by placing incrementally increasing amounts of weight on the bottom of the fuse over the firewall until the model balances. Once the amount of weight required has been determined, permanently attach the weight. If required, tail weight may be added by cutting open the bottom of the fuse and gluing it permanently inside.

Note: Do not rely upon the adhesive on the back of the lead weight to permanently hold it in place. Over time, fuel and exhaust residue may soften the adhesive and cause the weight to fall off. Use #2 sheet metal screws, RTV silicone or epoxy to permanently hold the weight in place.

HOT TIP

How to add noseweight



To get the correct C.G., several strips of lead weight were required in the nose of this model (a total of 8-1/2 oz.). This is not uncommon for warbirds (and all the wonderful flight characteristics described in the front of this manual were performed with this weight). To minimize the amount of weight required, it is desirable to position the weight as far forward as possible. This can be done by making a ***platform*** from leftover basswood sticks and 1/8" [3.2mm] plywood. Using 8-32 x 1-1/2" [38mm] bolts to mount the engine would also be long enough to mount the platform. The platform should be fuelproofed and the lead should be permanently glued on with epoxy.

❏ 4. **IMPORTANT:** If you found it necessary to add any weight, recheck the C.G. after the weight has been installed.

Balance the airplane laterally

❏ 1. With the wing level, have an assistant help you lift the model by the engine propeller shaft and the bottom of the fuse under the TE of the fin. Do this several times.

❏ 2. If one wing always drops when you lift the model, it means that side is heavy. Balance the airplane by adding weight to the other wing tip. An airplane that has been laterally balanced will track better in loops and other maneuvers.

PREFLIGHT

Identify your model

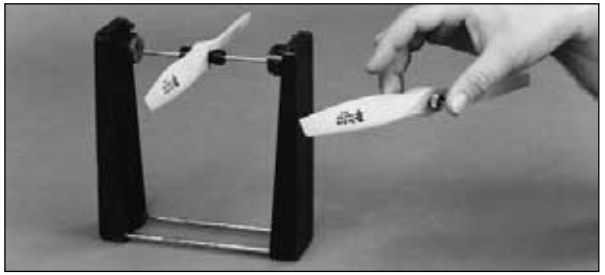
No matter if you fly at an AMA sanctioned R/C club site or if you fly somewhere on your own, you should always have your name, address, telephone number and AMA number on or inside your model. It is required at all AMA R/C club flying sites and AMA sanctioned flying events. Fill out the identification tag on the decal sheet and place it on or inside your model.

Charge the Batteries

Follow the battery charging instructions that came with your radio control system to charge the batteries. The transmitter and receiver batteries should always be charged the night before flying, and at other times as recommended by the radio manufacturer.

NOTE: Checking the condition of the receiver battery pack is highly recommended. All battery packs, whether it's a trusty pack you've taken out of another model, or a new battery pack, it should be cycled, noting the discharge capacity. Oftentimes, a weak battery pack can be identified (and a valuable model saved!) by comparing its actual capacity to its rated capacity. Refer to the instructions and recommendations that come with your cycler. If you don't own a battery cycler, perhaps a friend can cycle the battery pack for you and note its capacity.

Balance propellers



Carefully balance the propeller and spare propellers before flying. An unbalanced prop can be the single most significant cause of vibration that can damage your model. Not only will engine mounting screws and bolts loosen, possibly with disastrous effect, but vibration may also damage the radio receiver and battery. Vibration can also cause fuel to foam, which will, in turn, cause the engine to run hot or quit.

We use a Top Flite Precision Magnetic Prop Balancer™ (TOPQ5700) in the workshop and keep a Great Planes Fingertip Prop Balancer (GPMQ5000) in our flight box.

Ground inspection

If the engine is new, follow the engine manufacturer's instructions to break-in the engine. After break-in, confirm that the engine idles reliably, transitions smoothly and rapidly to full power and maintains full power—indefinitely. After running the engine on the model, inspect the model closely to make sure all screws remained tight, and the hinges, prop and all pushrods and connectors are secure.

Range check

Ground check the operational range of the radio before the first flight of the day. With the transmitter antenna collapsed and the receiver and transmitter on, you should be able to walk at least 100 feet away from the model and still have control. Have an assistant stand by the model and, while you work the controls, tell you what the control surfaces are doing. Repeat this test with the engine running at various speeds with an assistant holding the model, using hand signals to show you what is happening. If the control surfaces do not respond correctly, do not fly! Find and correct the problem first. Look for loose servo connections or broken wires, corroded wires on old servo connectors, poor solder joints in the battery pack or a defective cell, or a damaged receiver crystal from a previous crash.

ENGINE SAFETY PRECAUTIONS

Failure to follow these safety precautions may result in severe injury to yourself and others.

Keep all engine fuel in a safe place, away from high heat, sparks or flames, as fuel is very flammable. Do not smoke near the engine or fuel; and remember that engine exhaust gives off a great deal of deadly carbon monoxide. Therefore do not run the engine in a closed room or garage.

Get help from an experienced pilot when learning to operate engines.

Use safety glasses when starting or running engines.

Do not run the engine in an area of loose gravel or sand; the propeller may throw such material in your face or eyes.

Keep your face and body as well as all spectators away from the plane of rotation of the propeller as you start and run the engine.

Keep these items away from the prop: loose clothing, shirt sleeves, ties, scarfs, long hair or loose objects such as pencils or screwdrivers that may fall out of shirt or jacket pockets into the prop.

Use a "chicken stick" or electric starter to start the engine. Do not use your fingers to flip the propeller. Make certain the glow plug clip or connector is secure so that it will not pop off or otherwise get into the running propeller.

Make all engine adjustments from behind the rotating propeller.

The engine gets hot! Do not touch it during or right after operation. Make sure fuel lines are in good condition so fuel will not leak onto a hot engine, causing a fire.

To stop a glow engine, cut off the fuel supply by closing off the fuel line or following the engine manufacturer's recommendations. Do not use hands, fingers or any other body part to try to stop the engine. To stop a gasoline powered engine an on/off switch should be connected to the engine coil. Do not throw anything into the propeller of a running engine.

AMA SAFETY CODE (excerpts)

Read and abide the following Academy of Model Aeronautics Official Safety Code:

GENERAL

1. I will not fly my model aircraft in sanctioned events, air shows, or model flying demonstrations until it has been proven to be airworthy by having been previously, successfully flight tested.

2. I will not fly my model aircraft higher than approximately 400 feet within 3 miles of an airport without notifying the airport operator. I will give right-of-way and avoid flying in the proximity of full-scale aircraft. Where necessary, an observer shall be utilized to supervise flying to avoid having models fly in the proximity of full-scale aircraft.

3. Where established, I will abide by the safety rules for the flying site I use, and I will not willfully and deliberately fly my models in a careless, reckless and/or dangerous manner.

7. I will not fly my model unless it is identified with my name and address or AMA number, on or in the model.

9. I will not operate models with pyrotechnics (any device that explodes, burns, or propels a projectile of any kind).

RADIO CONTROL

1. I will have completed a successful radio equipment ground range check before the first flight of a new or repaired model.

2. I will not fly my model aircraft in the presence of spectators until I become a qualified flier, unless assisted by an experienced helper.

3. I will perform my initial turn after takeoff away from the pit or spectator areas, and I will not thereafter fly over pit or spectator areas, unless beyond my control.

4. I will operate my model using only radio control frequencies currently allowed by the Federal Communications Commission...

CHECK LIST

During the last few moments of preparation your mind may be elsewhere anticipating the excitement of the first flight. Because of this, you may be more likely to overlook certain checks and procedures that should be performed before the model is flown. To help avoid this, a checklist is provided to make sure these important areas are not overlooked. Many are covered in the instruction manual, so where appropriate, refer to the manual for complete instructions. Be sure to check the items off as they are completed (that's why it's called a *check list!*).

❏ 1. Fuelproof all areas exposed to fuel or exhaust residue such as the engine baffle in the cowl, cowl mounting blocks, the wing saddle area, etc.

❏ 2. Check the C.G. according to the measurements provided in the manual.

❏ 3. Be certain the battery and receiver are securely mounted in the fuse. Simply stuffing them into place with foam rubber is not sufficient.

❏ 4. Extend the receiver antenna and make sure it has a strain relief inside the fuselage to keep tension off the solder joint inside the receiver.

❏ 5. Balance the model *laterally* as explained in the instructions.

❏ 6. Use threadlocking compound to secure critical fasteners such as the set screws that hold the wheel axles to the struts, screws that hold the carburetor arm (if applicable), screw-lock pushrod connectors, etc.

❏ 7. Add a drop of oil to the axles so the wheels will turn freely.

❏ 8. Make sure all of the hinges are securely glued in place.

❏ 9. Reinforce holes for wood screws with thin CA where appropriate (servo mounting screws, cowl mounting screws, etc.).

❏ 10. Confirm that all controls operate in the correct direction and the throws are set up according to the manual.

❏ 11. Make sure there are silicone retainers on all the clevises and that all servo arms are secured to the servos with the screws included with your radio.

❏ 12. Secure connections between servo wires and Y-connectors or servo extensions, and the connection between the battery pack and the on/off switch with tape, heat shrink tubing or special clips suitable for that purpose.

❏ 13. Make sure servo extension cords do not interfere with other systems (servo arms, pushrods, etc.).

❏ 14. Secure the pressure tap (if used) to the muffler with high temp RTV silicone, thread locking compound or J.B. Weld.

❏ 15. Make sure the fuel lines are connected and are not kinked.

❏ 16. Use an incidence meter to check the wing for twists and attempt to correct before flying.

❏ 17. Balance the propeller (and spare propellers).

❏ 18. Tighten the propeller nut and spinner.

❏ 19. Place your name, address, AMA number and telephone number on or inside the model.

❏ 20. Cycle the receiver battery pack (if necessary) and make sure it is fully charged.

❏ 21. If you wish to photograph your model, do so before the first flight.

❏ 22. Range check the radio when you get to the flying field.

FLYING

The Sea Fury is a great-flying model that flies smoothly and predictably. The Sea Fury does not, however, possess the self-recovery characteristics of a primary R/C trainer and should be flown only by experienced R/C pilots.

Fuel Mixture Adjustment

A fully cowled engine may run at a higher temperature than an un-cowled engine. For this reason, the fuel mixture should be richened so the engine runs at about 200 rpm below peak speed. By running the engine slightly rich, you will help prevent dead-stick landings caused by overheating.

CAUTION (THIS APPLIES TO ALL R/C AIRPLANES): If, while flying, you notice any unusual sounds, such as a low-pitched "buzz," this may indicate control surface *flutter.* Because flutter can quickly destroy components of your airplane, any time you detect flutter you must immediately cut the throttle and land the airplane! Check all servo grommets for deterioration (this may indicate which surface fluttered), and make sure all pushrod linkages are secure and free of play. If the control surface fluttered once, it probably will flutter again under similar circumstances unless you can eliminate the free-play or flexing in the linkages. Here are some things which can cause flutter: Excessive hinge gap; Not mounting control horns solidly; Poor fit of clevis pin in horn; Side-play of pushrod in guide tube caused by tight bends; Poor fit of Z-bend in servo arm; Insufficient glue used when gluing in the elevator joiner wire; Excessive *play* or *backlash* in servo gears; and Insecure servo mounting.

Takeoff

Before getting ready to takeoff, see how the model handles on the ground by doing a few practice runs at low speeds on the runway. Hold “up” elevator to keep the tail wheel on the ground. If necessary, adjust the tail wheel so the model will roll straight down the runway. If you need to calm your nerves before the maiden flight, shut the engine down and bring the model back into the pits. Top off the fuel, then check all fasteners and control linkages for peace of mind.

Remember to takeoff into the wind. When ready, point the model straight down the runway, hold a bit of up elevator to keep the tail on the ground to maintain tail wheel steering, then gradually advance the throttle. As the model gains speed decrease up elevator allowing the tail to rise. One of the most important things to remember with a tail dragger is to always be ready to apply right rudder to counteract engine torque. Gain as much speed as the runway and flying site will practically allow before gently applying up elevator, lifting the model into the air. At this moment it is likely that more right rudder will be required to counteract engine torque. Be smooth on the elevator stick, allowing the model to establish a gentle climb to a safe altitude before turning into the traffic pattern.

Flight

For reassurance and to keep an eye on other traffic, it is a good idea to have an assistant on the flight line with you. Tell him to remind you to throttle back once the plane gets to a comfortable altitude. While full throttle is usually desirable for takeoff, most scale models fly well at reduced speeds.

Take it easy with the Sea Fury for the first few flights, gradually getting acquainted with it as you gain confidence. Adjust the trims to maintain straight and level flight. After flying around for a while, and while still at a safe altitude with plenty of fuel, practice slow flight and execute practice landing approaches by reducing the throttle to see how the model handles at slower speeds. While flying at reduced throttle settings, deploy the flaps so you know what to expect should you choose to land with flaps. Add power to see how she climbs as well. Continue to fly around, executing various maneuvers and making mental notes (or having your assistant write them down) of what trim or C.G. changes may be required to fine tune the model so it flies the way you like. Mind your fuel level, but use this first flight to become familiar with the model before landing.

Landing

Landings may be executed with or without flaps. Modelers unfamiliar with flaps usually make their first few landings without them, but learn to prefer landing with flaps (and making beautiful, slow fly-by’s) later on. If unsure, begin by landing with the flaps set to half of their full setting. A slight pitch-down will occur when flaps are extended, but this will help establish the descent. If preferred, up elevator could be mixed with flaps to maintain a level attitude. If landing without flaps, the nose of the model will pitch down slightly when the landing gear is extended. When ready to land with flaps, maintain an engine R.P.M. that is slightly higher than normal to overcome the additional drag. Flaps should be extended after the throttle and airspeed have been reduced and the model is on the downwind leg of the landing pattern.

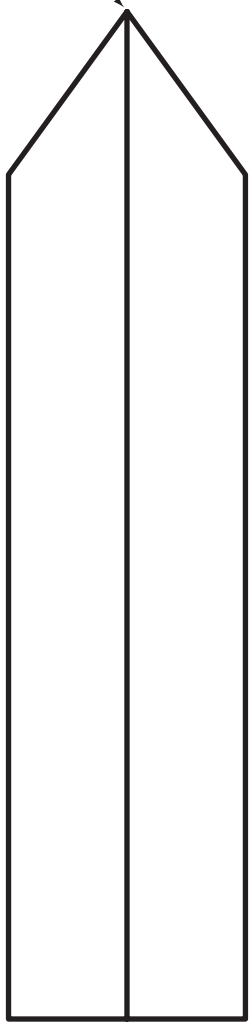
To initiate a landing approach, lower the throttle while on the downwind leg. Allow the nose of the model to pitch downward to gradually bleed off altitude. Continue to lose altitude, but maintain airspeed by keeping the nose down as you turn onto the crosswind leg. Make the final turn toward the runway (into the wind) keeping the nose down to maintain airspeed and control. Level the attitude when the model reaches the runway threshold, modulating the throttle as necessary to maintain the glide path and airspeed. If you are going to overshoot, smoothly advance the throttle (always ready with right rudder to counteract torque) and climb out to make another attempt. Retract the flaps *after* advancing the throttle. When ready to make the landing flare and the model is a foot or so off the deck, smoothly increase up elevator until it gently touches down. Once the model is on the runway and has lost flying speed, hold up elevator to place the tail on the ground, regaining tail wheel control.

One final note about flying the Sea Fury. Have a goal or flight plan in mind for every flight. This can be learning a new maneuver(s), improving a maneuver(s) you already know, or learning how the model behaves in certain conditions (such as on high or low rates). This is not necessarily to improve your skills (*though it is never a bad idea!)*, but more importantly so you do not surprise yourself by impulsively attempting a maneuver and suddenly finding that you’ve run out of time, altitude or airspeed. Every maneuver should be deliberate, not impulsive. For example, if you’re going to do a loop, check your altitude, mind the wind direction (anticipating rudder corrections that will be required to maintain heading), remember to throttle back at the top, and make certain you are on the desired rates (high/low rates). A flight plan greatly reduces the chances of crashing just because of poor planning and impulsive moves. Remember to think.

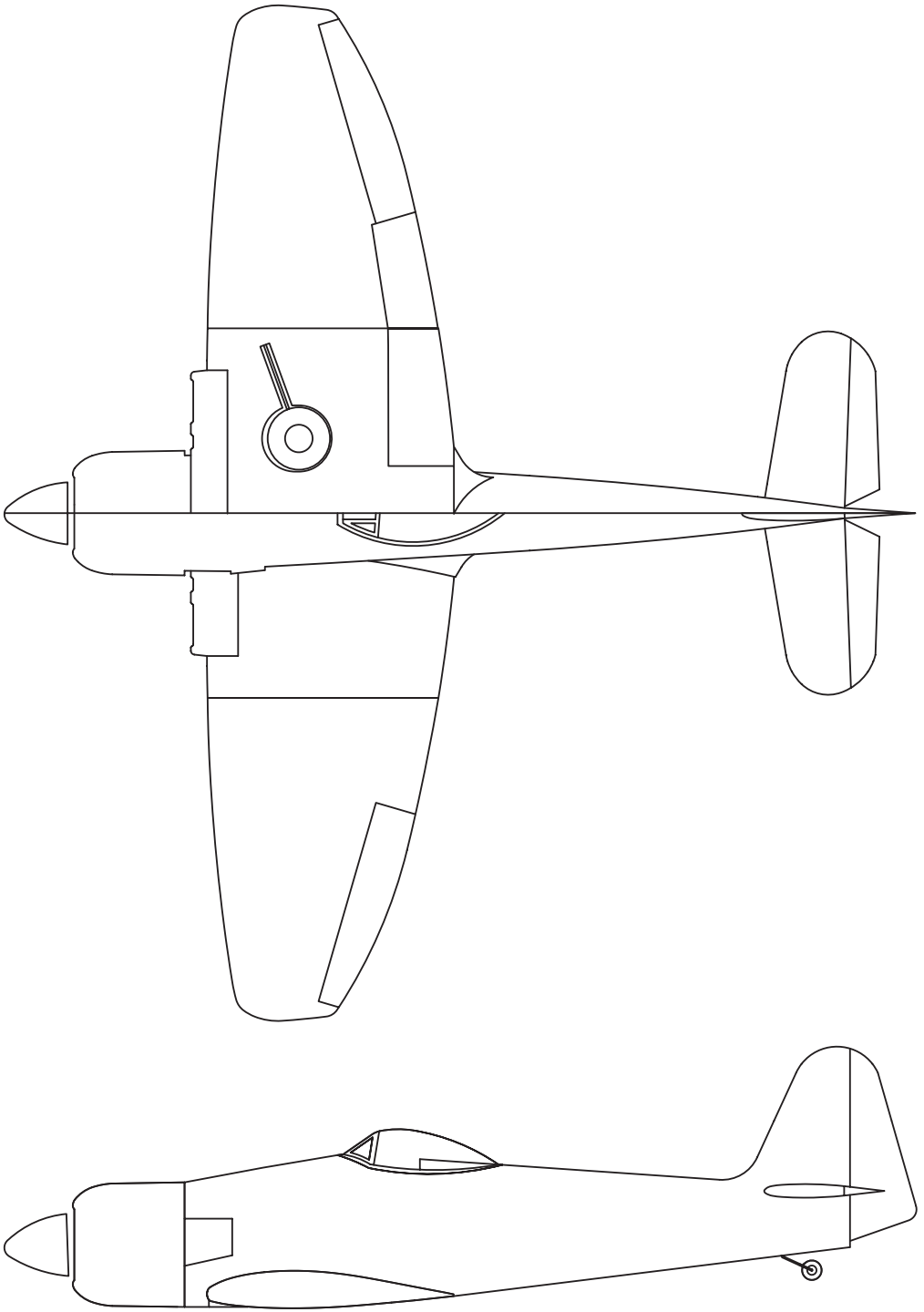
Have a ball! But always stay in control and fly in a safe manner.

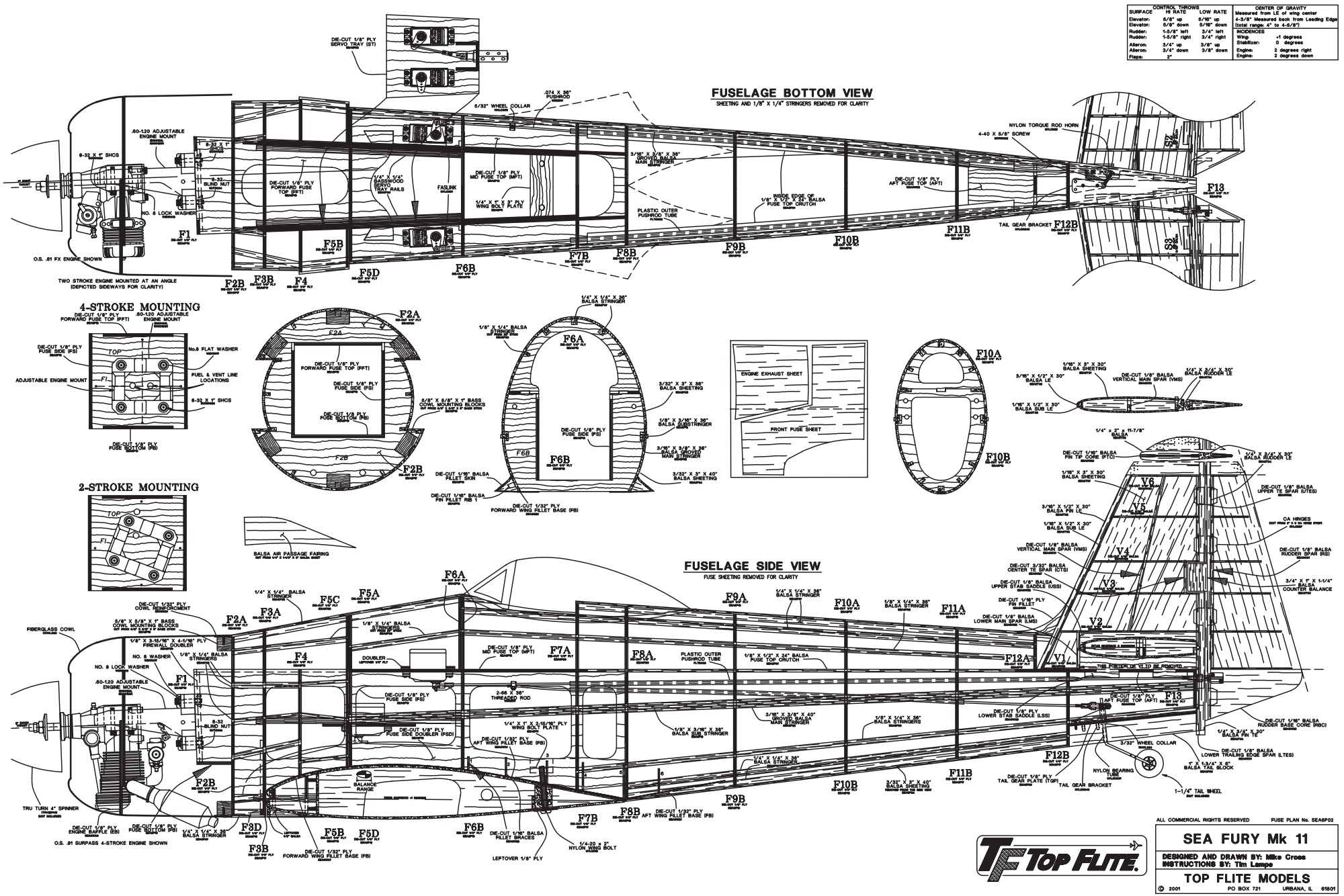
GOOD LUCK AND GREAT FLYING!

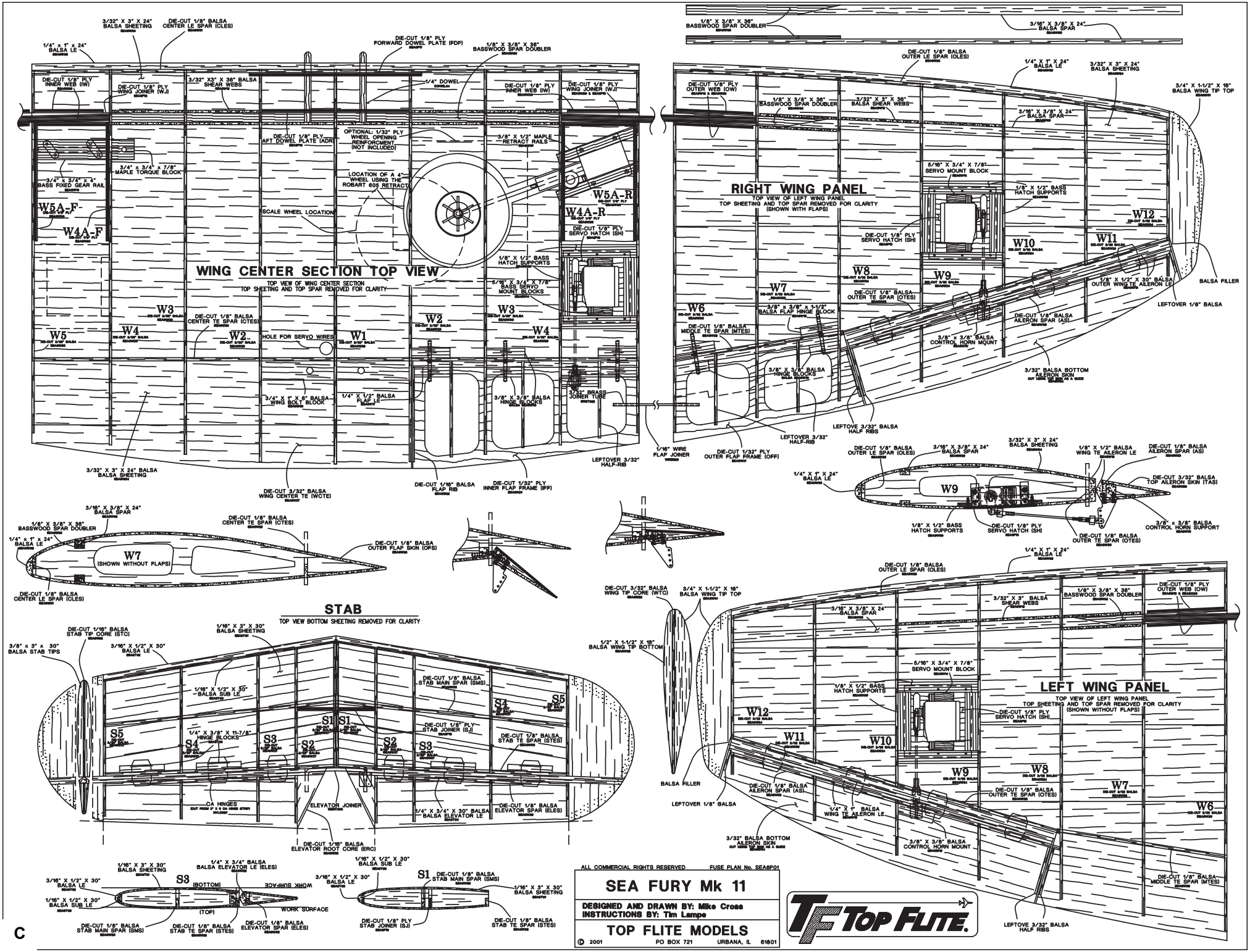
ALIGN WITH CENTER
OF HOLE IN PROP



DISPLAY PROP
ANGLE TEMPLATE




CONTROL THROWS
SURFACE | HI RATE | LOW RATE
Elevator: 5/8" up | 5/16" up
Elevator: 5/8" down | 5/16" down
Rudder: 1-5/8" left | 3/4" left
Rudder: 1-5/8" right | 3/4" right
Aileron: 3/4" up | 3/8" up
Aileron: 3/4" down | 3/8" down
Flaps: 2"
CENTER OF GRAVITY
Measured from LE of wing center
4-3/8" Measured back from Leading Edge
(total range: 4" to 4-5/8")
INCIDENCES
Wing: +1 degrees
Stabilizer: 0 degrees
Engine: 2 degrees right
Engine: 2 degrees down
FUSELAGE BOTTOM VIEW
SHEETING AND 1/8" X 1/4" STRINGERS REMOVED FOR CLARITY
4-STROKE MOUNTING
2-STROKE MOUNTING
FUSELAGE SIDE VIEW
FUSE SHEETING REMOVED FOR CLARITY
ENGINE EXHAUST SHEET
FRONT FUSE SHEET
BALSA AIR PASSAGE FAIRING
O.S. .81 FX ENGINE SHOWN
TWO STROKE ENGINE MOUNTED AT AN ANGLE (DEPICTED SIDEWAYS FOR CLARITY)
O.S. .91 SURPASS 4-STROKE ENGINE SHOWN
ALL COMMERCIAL RIGHTS RESERVED
FUSE PLAN No. SEA8P02
SEA FURY Mk 11
DESIGNED AND DRAWN BY: Mike Cross
INSTRUCTIONS BY: Tim Lampe
TOP FLITE MODELS
© 2001 PO BOX 721 URBANA, IL 61801


WING CENTER SECTION TOP VIEW
TOP VIEW OF WING CENTER SECTION
TOP SHEETING AND TOP SPAR REMOVED FOR CLARITY
RIGHT WING PANEL
TOP VIEW OF LEFT WING PANEL
TOP SHEETING AND TOP SPAR REMOVED FOR CLARITY
(SHOWN WITH FLAPS)
STAB
TOP VIEW BOTTOM SHEETING REMOVED FOR CLARITY
LEFT WING PANEL
TOP VIEW OF LEFT WING PANEL
TOP SHEETING AND TOP SPAR REMOVED FOR CLARITY
(SHOWN WITHOUT FLAPS)
W7
(SHOWN WITHOUT FLAPS)
W9
S3
(BOTTOM)
(TOP)
WORK SURFACE
1/4" X 1" X 24" BALSA LE
3/32" X 3" X 24" BALSA SHEETING
DIE-CUT 1/8" BALSA CENTER LE SPAR (CLES)
DIE-CUT 1/8" PLY FORWARD DOWEL PLATE (FDP)
1/8" X 3/8" X 36" BASSWOOD SPAR DOUBLER
DIE-CUT 1/8" PLY INNER WEB (IW)
DIE-CUT 1/8" PLY WING JOINER (WJ)
3/32" X3" X 36" BALSA SHEAR WEBS
1/4" DOWEL
DIE-CUT 1/8" PLY INNER WEB (IW)
DIE-CUT 1/8" PLY WING JOINER (WJ)
DIE-CUT 1/8" PLY AFT DOWEL PLATE (ADR)
OPTIONAL: 1/32" PLY WHEEL OPENING REINFORCMENT (NOT INCLUDED)
3/8" X 1/2" MAPLE RETRACT RAILS
3/4" X 3/4" X 7/8" MAPLE TORQUE BLOCK
LOCATION OF A 4" WHEEL USING THE ROBART 605 RETRACT
3/4" X 3/4" X 4" BASS FIXED GEAR RAIL
W5A-F
W4A-F
SCALE WHEEL LOCATION
W5A-R
W4A-R
DIE-CUT 1/8" PLY SERVO HATCH (SH)
1/8" X 1/2" BASS HATCH SUPPORTS
5/16" X 3/4" X 7/8" BASS SERVO MOUNT BLOCKS
W3
W5
W4
W2
W1
DIE-CUT 1/8" BALSA CENTER TE SPAR (CTES)
HOLE FOR SERVO WIRES
3/4" X 1" X 6" BALSA WING BOLT BLOCK
1/4" X 1/2" BALSA FLAP LE
3/8" X 3/8" BALSA HINGE BLOCKS
3/32" BRASS JOINER TUBE
3/32" X 3" X 24" BALSA SHEETING
DIE-CUT 3/32" BALSA WING CENTER TE (WCTE)
DIE-CUT 1/8" BALSA FLAP RIB
DIE-CUT 1/32" PLY INNER FLAP FRAME (IFF)
LEFTOVER 3/32" HALF-RIB
1/16" WIRE FLAP JOINER
DIE-CUT 1/32" PLY OUTER FLAP FRAME (OFF)
DIE-CUT 1/8" BALSA OUTER LE SPAR (OLES)
1/8" X 3/8" X 36" BASSWOOD SPAR DOUBLER
3/32" X 3" X 36" BALSA SHEAR WEBS
3/16" X 3/8" X 24" BALSA SPAR
3/4" X 1-1/2" X 18" BALSA WING TIP TOP
DIE-CUT 1/8" PLY OUTER WEB (OW)
5/16" X 3/4" X 7/8" SERVO MOUNT BLOCK
1/8" X 1/2" BASS HATCH SUPPORTS
W12
W11
W10
W8
W9
W7
W6
DIE-CUT 1/8" PLY SERVO HATCH (SH)
DIE-CUT 1/8" BALSA OUTER TE SPAR (OTES)
3/8" X 3/8" X 1-1/2" BALSA FLAP HINGE BLOCK
DIE-CUT 1/8" BALSA MIDDLE TE SPAR (MTES)
DIE-CUT 1/8" BALSA AILERON SPAR (AS)
3/8" X 3/8" BALSA CONTROL HORN MOUNT
3/8" X 3/4" BALSA HINGE BLOCKS
3/32" BALSA BOTTOM AILERON SKIN
1/8" X 1/2" BALSA OUTER WING TE AILERON LE
BALSA FILLER
LEFTOVER 1/8" BALSA
LEFTOVE 3/32" BALSA HALF RIBS
LEFTOVER 3/32" HALF-RIB
DIE-CUT 3/32" BALSA TOP AILERON SKIN (TAS)
3/8" X 3/8" BALSA CONTROL HORN SUPPORT
DIE-CUT 1/8" BALSA OUTER FLAP SKIN (OFS)
DIE-CUT 1/8" BALSA CENTER LE SPAR (CLES)
3/8" x 3" x 30" BALSA STAB TIPS
DIE-CUT 1/16" BALSA STAB TIP CORE (STC)
3/16" X 1/2" X 30" BALSA LE
1/16" X 3" X 30" BALSA SHEETING
1/16" X 1/2" X 30" BALSA SUB LE
DIE-CUT 1/8" BALSA STAB MAIN SPAR (SMS)
DIE-CUT 1/8" PLY STAB JOINER (SJ)
DIE-CUT 1/8" BALSA STAB TE SPAR (STES)
1/4" X 3/8" X 11-7/8" HINGE BLOCKS
S1
S2
S3
S4
S5
CA HINGES
ELEVATOR JOINER
1/4" X 3/4" X 30" BALSA ELEVATOR LE
DIE-CUT 1/8" BALSA ELEVATOR SPAR (ELES)
DIE-CUT 1/16" BALSA ELEVATOR ROOT CORE (ERC)
DIE-CUT 3/32" BALSA WING TIP CORE (WTC)
1/2" X 1-1/2" X 18" BALSA WING TIP BOTTOM
1/4" X 3/4" X BALSA WING TE AILERON LE
3/16" X 3/8" X 24" BALSA SPAR
DIE-CUT 1/8" BALSA OUTER LE SPAR (OLES)
1/8" X 1/2" BASS HATCH SUPPORTS
DIE-CUT 1/8" PLY SERVO HATCH (SH)
DIE-CUT 1/8" BALSA OUTER TE SPAR (OTES)
DIE-CUT 1/8" BALSA AILERON SPAR (AS)
3/8" X 3/8" BALSA CONTROL HORN MOUNT
3/32" BALSA BOTTOM AILERON SKIN
DIE-CUT 1/8" BALSA MIDDLE TE SPAR (MTES)
1/8" X 3/8" X 36" BASSWOOD SPAR DOUBLER
3/16" X 3/8" X 24" BALSA SPAR
1/4" X 1" X 24" BALSA LE
DIE-CUT 1/8" BALSA CENTER TE SPAR (CTES)
DIE-CUT 1/8" BALSA OUTER FLAP SKIN (OFS)
DIE-CUT 1/8" BALSA CENTER LE SPAR (CLES)
1/16" X 3" X 30" BALSA SHEETING
1/4" X 3/4" BALSA BALSA ELEVATOR LE (ELES)
3/16" X 1/2" X 30" BALSA LE
1/16" X 1/2" X 30" BALSA SUB LE
DIE-CUT 1/8" BALSA STAB MAIN SPAR (SMS)
DIE-CUT 1/8" BALSA STAB TE SPAR (STES)
DIE-CUT 1/8" BALSA ELEVATOR SPAR (ELES)
DIE-CUT 1/8" PLY STAB JOINER (SJ)
ALL COMMERCIAL RIGHTS RESERVED
FUSE PLAN No. SEA6P01
SEA FURY Mk 11
DESIGNED AND DRAWN BY: Mike Cross
INSTRUCTIONS BY: Tim Lampe
TOP FLITE MODELS
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C