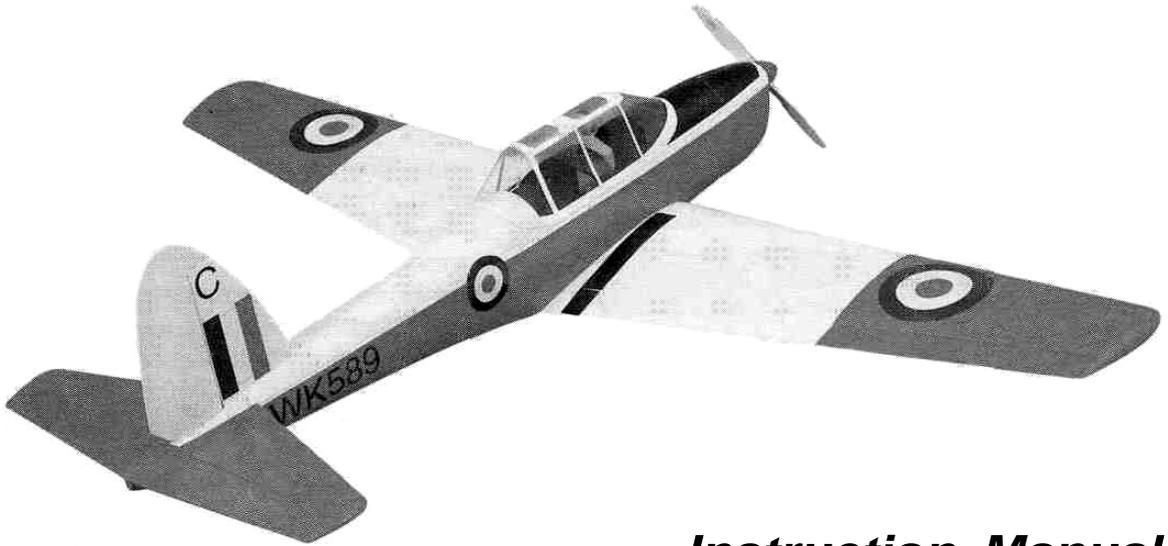


Dynaflite™

de Havilland
CHIPMUNK™

- **BUILDS QUICKLY**
- **REALISTIC FUN SCALE® MODEL**
- **HUGE, 89" WINGSPAN (IMAA Legal)**

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



Instruction Manual

WARRANTY

Dynaflite guarantees this kit to be free from 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 Dynaflite's liability exceed the original cost of the purchased kit. Further, Dynaflite reserves the right to change or modify this warranty without notice. In that Dynaflite 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, return this kit immediately in new and unused condition to the place of purchase.



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INTRODUCTION

Congratulations on your choice of this kit for your next project. The Chipmunk is a Fun Scale® model of a true classic aircraft. It has the presence that only a big model can carry off.

At Dynaflite we take pride in offering kits that are simple and straightforward to build and provide value for your modeling dollar. Because of the size and cost of this model we assume you have built several models and have a general working knowledge of modeling and its terms. If you **HAVE NOT** built and flown several kits, do yourself a favor - back up and get some experience before beginning this kit.

PRECAUTIONS

1. You must build the plane **according to the plan and instructions**. Do not alter or modify the model, as doing so may result in an unsafe or unflyable model. **In a few cases the plan and instructions may differ slightly from the photos. In those instances the plan and written instructions are correct.**

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

3. You must use a proper **R/C radio** that is in first class condition, the correct size of **engine** and correct **components** (fuel tank, wheels, etc.) throughout your building process.

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

5. You must **test** the operation of the model before every flight to insure that all equipment is operating and you must make certain that the model has remained structurally sound.

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

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

**PROTECT YOUR MODEL,
YOURSELF & OTHERS...
FOLLOW THIS IMPORTANT
SAFETY PRECAUTION**

Your Chipmunk is not a toy, but a sophisticated working model that functions very much like an actual airplane. Because of its realistic performance, if you do not assemble and operate your Chipmunk correctly, you could possibly injure yourself or spectators and damage property.

Your Dynaflyte Chipmunk is intended for scale and general sport flying including mild aerobatics such as chandelles, stall turns, loops and rolls. Its structure is designed to withstand such stresses. If you intend to use your Chipmunk for more rigorous types of flying such as aggressive aerobatics or flying from rough fields, it is your responsibility to reinforce areas of the model that will be subjected to the resulting unusually high stresses.

Note: We, as the kit manufacturer, provide you with a quality kit and great instructions, but ultimately the quality and flyability of your finished model depends on how you assembled 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.

Please inspect all parts carefully before you start to build! If any parts are missing, broken or defective, or if you have any questions about building or flying this model, please call us at (217) 398-8970. You can also reach us by e-mail at:

productsupport@dyna flite. com

If you are calling for replacement parts, please look up the part numbers and the kit identification number (stamped on the end of the carton) and have them ready when you call.

To make your R/C modeling experience totally enjoyable, get assistance with assembly and your first flights from an experienced, knowledgeable modeler. You'll learn faster and avoid risking your model before you're truly ready to solo. Your local hobby shop has information about flying clubs in your area whose membership includes qualified instructors.

You can also contact the Academy of Model Aeronautics (AMA), which has more than 2,500 chartered clubs across the country. We recommend you join the AMA which will insure you at AMA club sites and events. AMA Membership is required at chartered club fields where qualified flight instructors are available.

Contact the AMA at the address or toll-free phone number below.



**Academy of Model
Aeronautics**

5151 East Memorial Drive
Muncie, IN 47302
(800) 435-9262
Fax (765) 741-0057
Internet address:
<http://www.modelaircraft.org>

PREPARATIONS

REQUIRED ACCESSORIES

These are the items "not included" with you kit, that you will need to purchase separately. Items in parentheses such as (GPMQ4107) are suggested part numbers recognized by distributors and hobby shops and are listed for your ordering

convenience. **GPM** is the Great Planes® brand, **TOP** is the Top Flite® brand and **HCA** is the Hobbico® brand.

- 4-6 Channel Radio with One Standard Servo (Three with Flaps) and Five HighTorque Servos.
- (2) "Y" Connectors (Ailerons, Flaps)
- (2) 12" Servo Extension Wires
- Engine - 1.08 to 1.5 2-stroke, 1.2 to 1.6 4-stroke or 25cc Gasoline
- Exhaust Header, In-cowl Muffler
- Fuel Filler Valve (GPMQ4160 Glow, GPMQ4161 Gas)
- 2-3/4" Spinner (GPMQ4527, Red)
- Engine Mount and Mounting Hardware
- 16 oz. Fuel Tank (GPMQ4107) (or Gasoline CompatibleTank)
- Standard Fuel Tubing (GPMQ4131) (or Gasoline CompatibleTubing)
- (2) 4" Main Wheels (ROBQ1537)
- (1) 1-1/2"Tail Wheel (GPMQ4243)
- (4) 1/4" Wheel Collars (DUBQ1200)
- (2) 1/8" Wheel Collars (GPMQ4304)
- Top Flite MonoKote® Covering Film (Approx. Four 6' Rolls)
- Paint for Fuelproofing and **Painting the** Engine Cowl and the Canopy
- (Dor (2) 1/5 Scale Pilot(s)
- 1/4" Latex Foam Rubber (HCAQ1000)
- (19) Heavy Duty Hinges (Twenty Seven with flaps) (ROBQ2510)
- All Pushrods and Control Hardware
- (4) Heavy Duty Control Horns (Six with Flaps) (DUBQ1985)
- (5) 4-40 Threaded Metal Clevis (Seven with Flaps) (GPMQ3794)

- (5) 4-40 Metal Solder Clevis (Seven with Flaps) (GPMQ3814)
- (5) 4-40 Hex Nuts (Seven with Flaps) (GPMQ3304)
- (2) 4-40 x 12" Wire Pushrod, Threaded One End (Four with Flaps) (GPMQ3752)
- (3) 4-40 x 48" Pushrods (GPMQ3718)
- (1) Throttle Pushrod (GPMQ3700)
- Throttle Hardware

OPTIONAL ACCESSORIES

- (2) Robart RoboStruts (Shock Absorbing) (ROBQ1600)

SUGGESTED SUPPLIES

- 4 oz. Thin CA Adhesive - (GPMR6004)
- 4 oz. Medium CA Adhesive - (GPMR6010)
- 2 oz. Thick CA Adhesive - (GPMR6015)
- CA Accelerator - (HCAR3750)
- CAApplicatorTips - (HCAR3780)
- 6-Minute Epoxy - (GPMR6045)
- 30-Minute Epoxy - (GPMR6047)
- 4 oz. Aliphatic Resin Glue (GPMR6161)
- Great Planes Plan Protector (GPMR6167)



A flat, durable, easy-to-handle sanding tool is a necessity for building model airplanes. Great .Planes makes a complete range of Easy-Touch" Bar Sanders and replaceable Easy-Touch adhesive-backed sandpaper. On our workbench, we have four 11" Easy-Touch Bar Sanders, equipped with #50, #80, #150 and #220-grit sandpaper. This setup is all that is required for almost any sanding task. Custom sanding blocks can be made from balsa for sanding hard-to-reach spots. We also keep some #320-grit wet-or-dry sandpaper for finish sanding before covering.

For future reference, here's a list of Easy-Touch Bar Sanders and adhesive-backed sandpaper:

- 5-1/2" Bar Sander (GPMR6169)
- 11" Bar Sander (GPMR6170)
- 22" Bar Sander (GPMR6172)

- 12' Roll of adhesive-backed sandpaper,
 - 80-grit (GPMR6180)
 - 150-grit (GPMR6183)
 - 220-grit (GPMR6185)

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

BUILDING NOTES

IMPORTANT: During construction you will be using a number of balsa sticks to frame various assemblies. Ample material is included but you should study the plans, then make an effort to cut the longest pieces you will need first. Label

the pieces as you cut them for later reference. By doing this now, you won't have to splice pieces together later.

ADHESIVES

This kit is built with three types of glue.

Cyanoacrylate: CA glues cure almost instantaneously and are moderately strong. There are different viscosities of CA's intended for different conditions you will encounter when you build. Thin CA is great for "tack-gluing," for glue joints that fit well and for parts that are already joined but need to be permanently bonded. Medium CA is used for general construction where you apply glue to one part, then join it to another part. Thick CA is great for glue joints that don't fit perfectly or parts that require a little time for positioning before the glue cures. You will encounter many other conditions that require one or the other types of CA.

Always use CA in a well ventilated area. Open some windows or place a fan in the room to circulate the air. Do not lean directly over your work when you use CA and look away while it cures or "sets off." CA can cure immediately upon contact with skin so if you accidentally bond your fingers, do not use vigorous motion to separate them. Use CA Debonder (GPMR6039) or acetone (nail polish remover) or soak your fingers in warm water for a few minutes.

Never point the tip of a CA bottle toward your face and be especially careful when you unclog a CA tip. Hobbico CA Applicator Tips (HCAR3780) are highly recommended and will help keep the bottle from clogging. Keep paper towels or tissues close by to immediately absorb excess CA dropped on your model or work area. Read all the warning labels on your CA bottle. CA Accelerator is a chemical that you can spray over uncured CA to make it cure immediately. A mist spray of accelerator will do the job. Do not inhale the vapors! Some modelers "preprime"

the parts to be glued with accelerator, join them, then add the CA. This way the CA is guaranteed to cure immediately. This prepriming is especially handy when you use thin CA because it will cure before all of the glue soaks into the wood away from the joint. We do not recommend you build your entire model with this method and use accelerator only when necessary. Often, overspray from accelerator used hours or even days earlier on nearby glue joints will cause the CA you use on the next step to cure prematurely and unexpectedly - so be careful!

Throughout the assembly of this model, THIN CA should be used unless the step calls for another type of adhesive.

Aliphatic Resin: Resin glues require that parts be pinned or clamped together while the glue dries; typically 15 - 30 minutes. Resin glues are very strong and work well with balsa and plywoods.

Epoxy: Epoxy glues are the strongest but require the most time to cure. Six-minute epoxy cures the fastest; it sets within six minutes but is not fully cured for one hour or more. Thirty-

minute epoxy is the strongest as it allows the epoxy to soak into the wood thoroughly. While it sets within 30 minutes, it is not fully cured for two or more hours.

COMMON ABBREVIATIONS

Fuse = Fuselage

Ply = Plywood

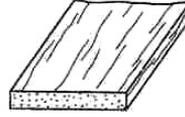
" = Inches

Stab = Horizontal Stabilizer

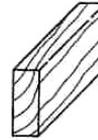
LE = Leading edge (front)

TE = Trailing edge (rear)

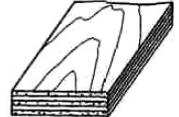
TYPES OF WOOD



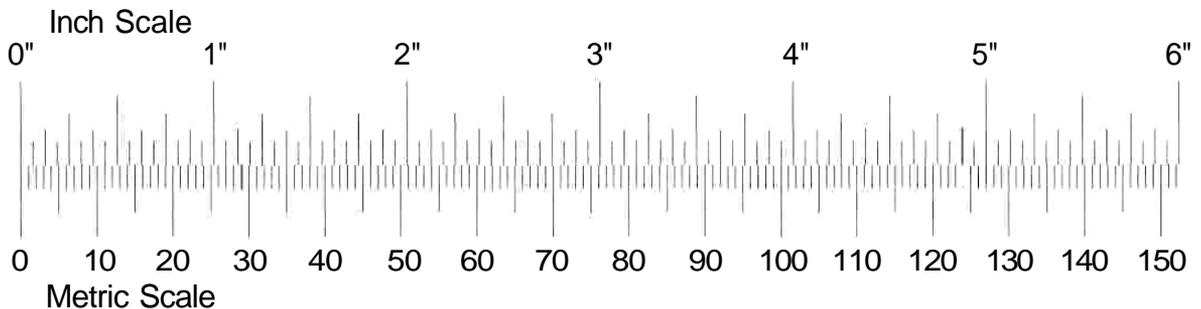
Balsa



Basswood



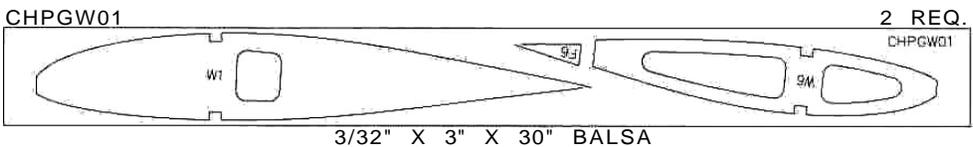
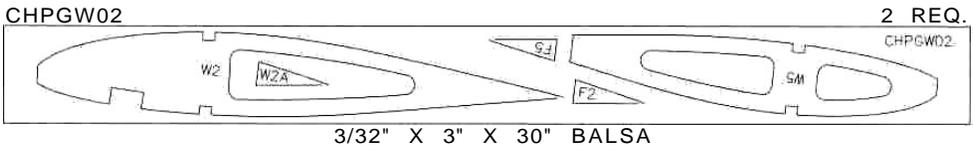
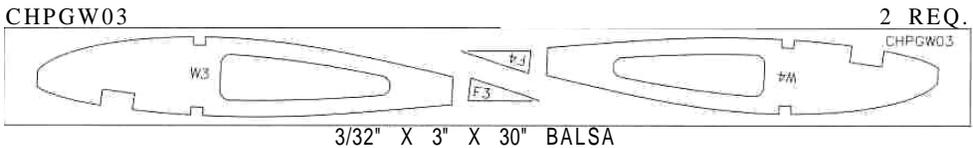
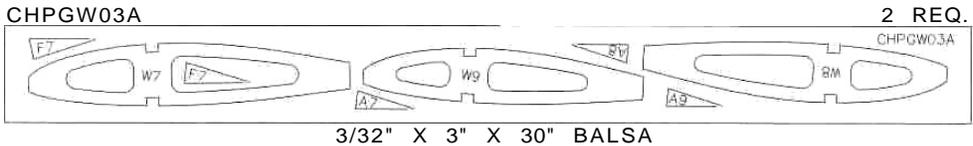
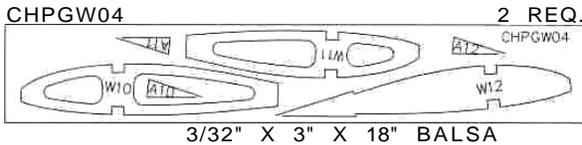
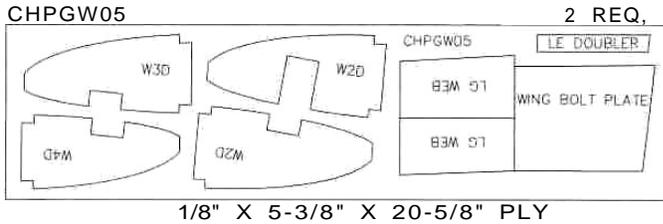
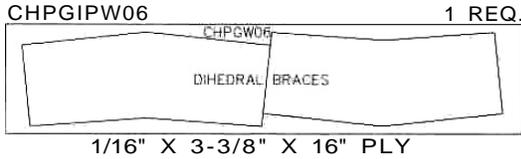
Plywood



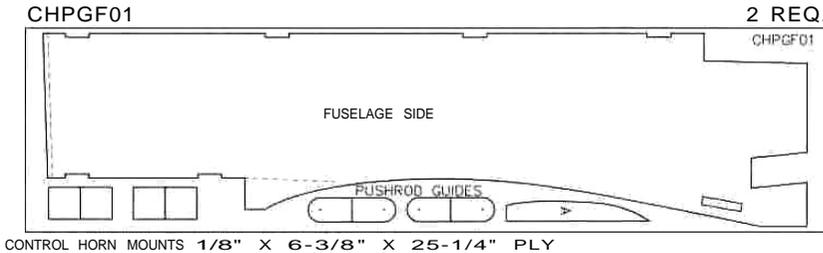
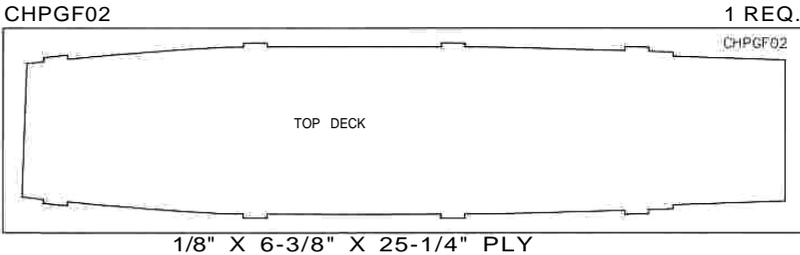
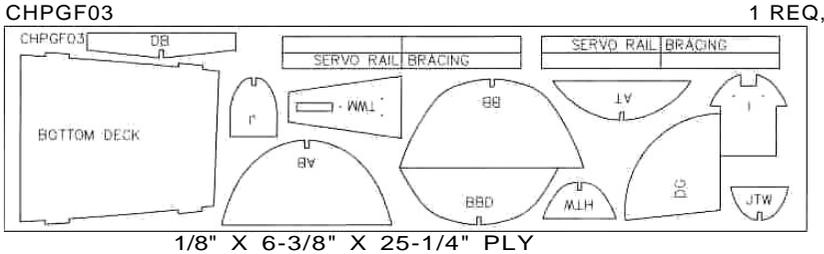
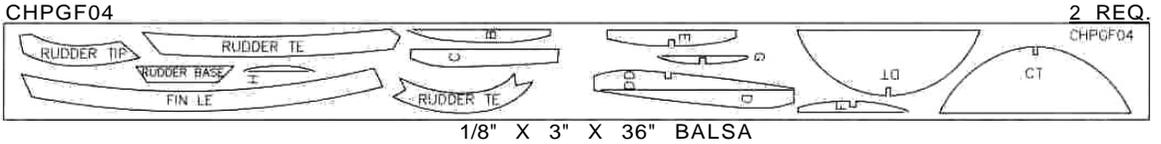
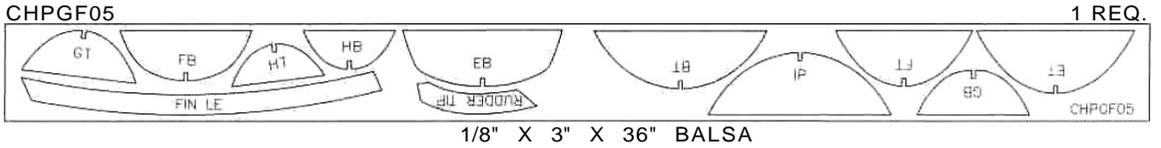
Die-Cut Pattern

Note: If you will be building functional flaps for your Chipmunk, glue in the lightening holes in ribs W4 and W5.

Note: This page shows the location of the die-cut parts for the wing. Not all parts are marked on the die sheets. Be sure to mark all parts with a ball point pen prior to removing them from the die sheets.



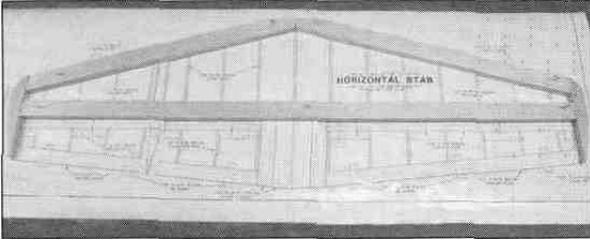
Die-Cut Pattern



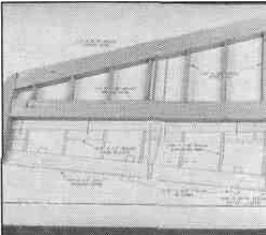
Note: This page shows the location of the die-cut parts for the fuselage. Not all parts are marked on the die sheets. Be sure to mark all parts with a ball point pen prior to removing them from the die sheets.

BUILD THE STABILIZER & ELEVATORS

- ❑ 1. Cut the stabilizer drawing from the fuselage plan and place it on your building board. Cover the plan with Great Planes Plan Protector.



- ❑ 2. Cut the trailing edge from 1/2" x 15/16" x 36" balsa and pin it in place over the plan.
- ❑ 3. Cut both leading edges from 1/2" x 15/16" x 36" balsa and pin them in place over the plan.
- ❑ 4. Cut and fit the ribs from 1/8" x 1/2" x 30" balsa. Cut the longer ribs first. When satisfied with the fit, glue them into position.

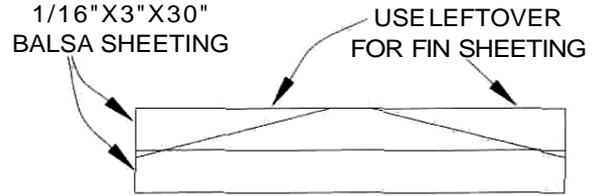


- ❑ 5. Cut and shape the tips from 1/2" x 3/4" x 12" balsa using the plans as a guide. Glue and pin them in place.

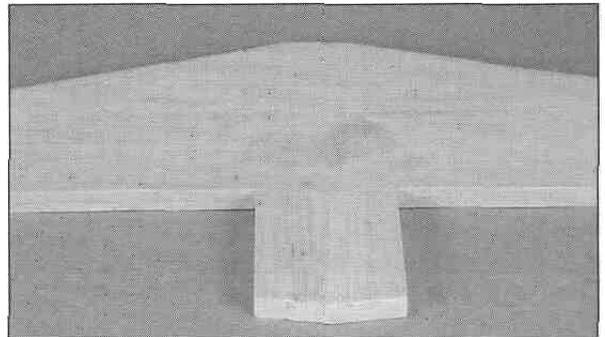
Note: It is important that the ribs fit the LE and TE well. It is **not** important that each rib fit the exact location shown on the plan.

- ❑ 6. Remove the stab from the plan. Sand the top and bottom surfaces flat and even. Use care not to gouge any of the ribs.

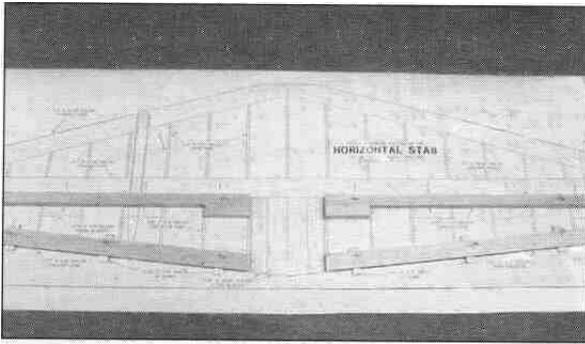
STAB SHEETING



- ❑ 7. Sheet the stab with 1/16" x 3" x 30" balsa on both the top and bottom. Do this with the stab flat on your building board and use care not to twist it as you glue the sheeting into place. Use pieces of leftover 1/16" balsa sheeting to sheet the stab tips.
- ❑ 8. Sand the trailing edge of the stab flat as shown on the cross-section of the plan. Rough sand the stab to the shape shown.
- ❑ 9. Mark the centerline on the rear edge of the TE along its entire length.



- ❑ 10. Cut the four stab filler blocks from 5/8" x 15/16" x 18" balsa and glue them to the center of the stab TE as shown on the plan and photo. Note that two of these blocks are cut to a width of 3/4".

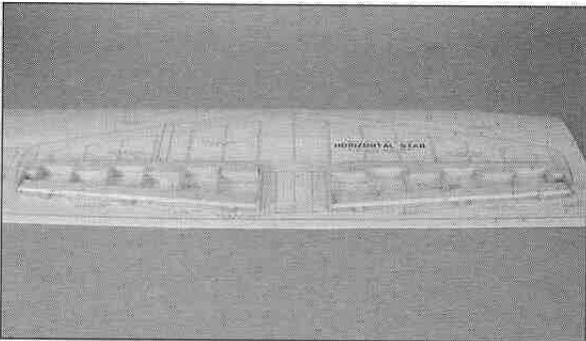


❑ 11. Build both elevators at the same time. Cut the leading edges from 5/8" x 1/2" x 30" balsa and pin them to the plan. The leftover 5/8" x 1/2" balsa will be used later for hinge blocks.

❑ 12. Cut some shims from 3/16" x 3/8" x 24" balsa and place them in position over the plan at the TE. The remainder of this stick will be used for the fin ribs so be sure to save at least 14".

❑ 13. Cut the trailing edges from 1/4" x 3/4" x 30" balsa. Pin them into position on top of the shims.

❑ 14. Cut and fit the eight elevator hinge blocks from 5/8" x 1/2" x 30" balsa. Glue them into position where shown on the plan.



❑ 15. Cut and fit the ribs from 1/8" x 5/8" x 36" balsa. Cut the longer ribs first. When satisfied with the fit, glue them into position. Note that the root and tip ribs extend full length. **Note:** It is important that the ribs fit the LE and TE well. It is not important that each rib fit the exact location shown on the plan.

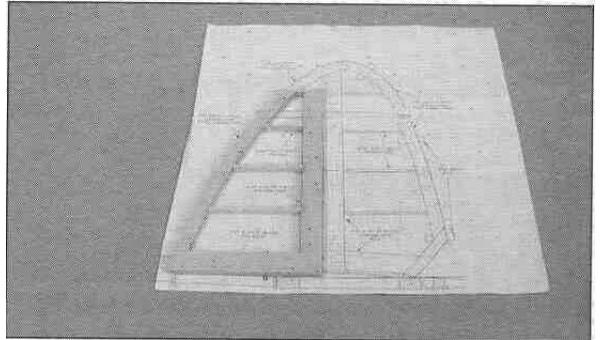
❑ 16. Notch the LE of both elevators where shown on the plan and fit and glue the die-cut 1/8" ply horn bases into place.

❑ 17. Remove the elevators from the plan and rough sand them to the shape shown in the cross-section. Use care not to gouge the ribs.

❑ 18. Mark the centerline of the elevator leading edges along their entire length. Using the cross-section on the plan as a reference, sand the leading edges to the "V" shape shown. Make sure the angle of the "V" is enough to allow for the full up and down movement of the elevators.

BUILD THE VERTICAL FIN & RUDDER

❑ 1. Cover the fin/rudder drawing with Plan Protector.



❑ 2. Glue the three die-cut 1/8" balsa fin leading edge pieces together to form a LE lamination. Pin this in place over the plan.

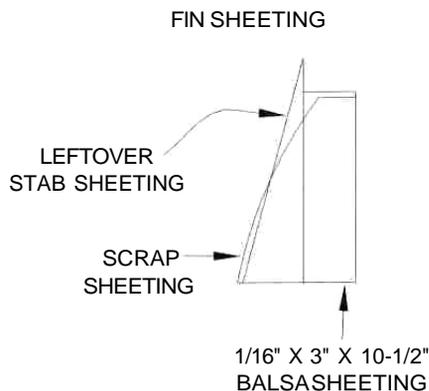
❑ 3. Cut the fin post (trailing edge) from 3/8" x 15/16" x 18" balsa and pin it in position.

❑ 4. Cut the fin base from the remaining 3/8" x 15/16" balsa and pin it into position. Glue all three pieces together.

❑ 5. Cut and fit the ribs from the remainder of the 3/16" x 3/8" x 24" balsa. Cut the longer ribs first. When satisfied with the fit, glue them into position.

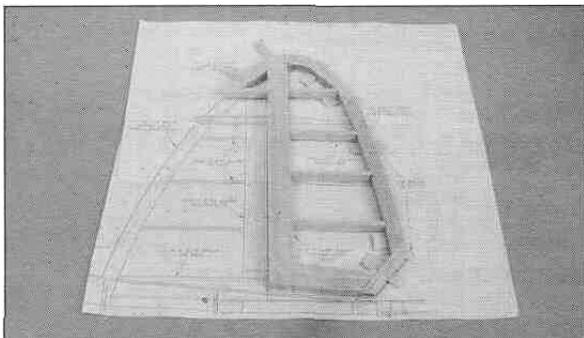
Note: It is important that the ribs fit the LE and TE well. It is not important that each rib fit the exact location shown on the plan.

❑ 6. Remove the fin from the plan. Sand the top and bottom surfaces flat and even. Use care not to gouge any of the ribs.



❑ 7. Sheet the fin with 1/16" x 3" x 30" balsa on both sides. Do this with the fin flat on your building board and use care not to twist it as you glue the sheeting into place.

❑ 8. Rough sand the fin to the shape shown in the cross-section.



❑ 9. Cut the rudder leading edge from 1/2" x 15/16" x 18" balsa and pin it to the plan.

❑ 10. Cut the rudder base from the rest of the 1/2" x 15/16" balsa. Glue and pin it into place.

❑ 11. The rudder tip leading edge is built up from three laminations of die-cut 1/8" balsa pieces, for a total thickness of 3/8". Glue the three pieces together and pin them in place on the plan, using some leftover 1/16" balsa shims where shown.

❑ 12. The rudder trailing edge is built from two laminations of die-cut 1/8" balsa pieces, for a total thickness of 1/4". Build two of these assemblies using the plan as a reference.

❑ 13. Cut some shims from leftover 1/8" balsa and place them in position over the plan at the TE where shown. Pin and glue the TE into position.

❑ 14. Cut and fit the ribs from 3/16" x 1/2" x 18" balsa. Cut the longer ribs first. When satisfied with the fit, glue them into position.

Note: It is important that the ribs fit the LE and TE well. It is not important that each rib fit the exact location shown on the plan.

❑ 15. Remove the rudder from the plan and rough sand it to the shape shown in the cross-section.

❑ 16. Tack glue the rudder to the fin.

❑ 17. Sand the assembly to its final shape.

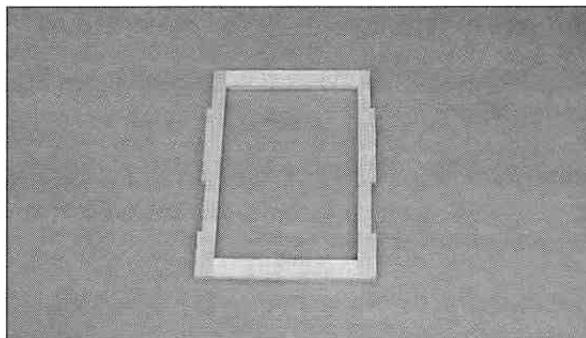
❑ 18. Separate the rudder from the fin. Sand the trailing edge of the fin flat as shown on the cross-section on the plan.

❑ 19. Mark the centerline of the fin trailing edge and rudder leading edge along their entire length. Using the cross-section on the plan as a reference, sand the **rudder leading edge** to the "V" shape shown. Make sure the angle of the "V" is enough to allow for the full left and right movement of the rudder.

BUILD THE FUSELAGE

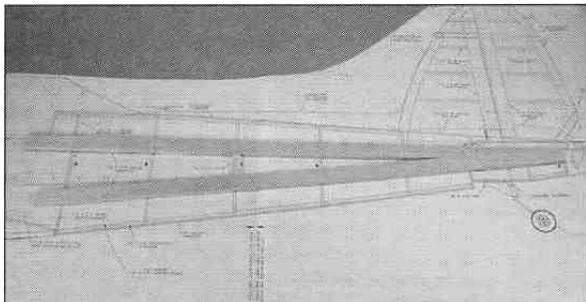
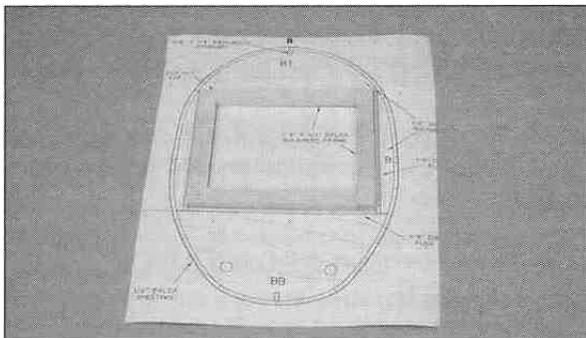
BUILD THE BULKHEADS

❑ 1. The fuselage plan is in two pieces. Cut the plan as indicated and tape the two parts together. Cut the fuselage top view from the plan. Cut the drawings for bulkheads B, C, D, F and H from the plan. Place the bulkhead drawings on your workbench and cover them with Plan Protector.



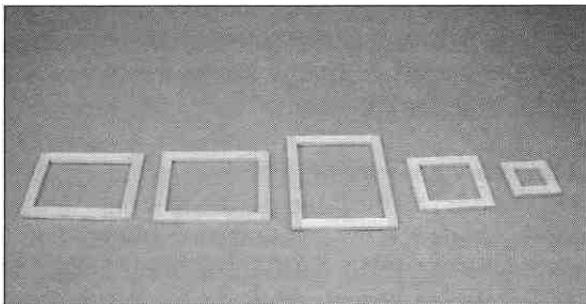
❑ 3. Inner bulkhead D has notches cut in the sides for the longerons and longeron doublers. These notches may be cut now or later when the inner bulkhead is fitted to the fuselage side.

❑ 4. Place the fuselage side plan on your workbench and cover it with Plan Protector from bulkhead D aft. Begin construction by building the right rear side structure.



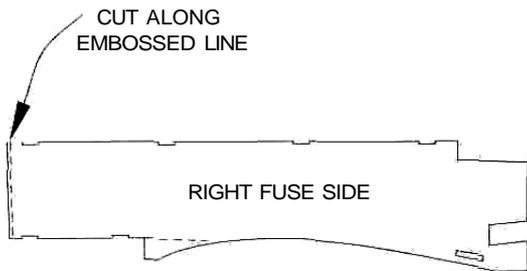
❑❑ 5. Using two $1/4" \times 15/16" \times 36"$ balsa sticks, cut and fit the rear side longerons. Pin and glue the parts into position.

Note: The top longeron ends at the leading edge of the stab. A separate $1/4" \times 15/16" \times 5-9/16"$ stab mount is glued to the rear of the top longeron, $1/8"$ below the top edge. The bottom longeron has an angled cut and notch that fit the top longeron and stab mount.

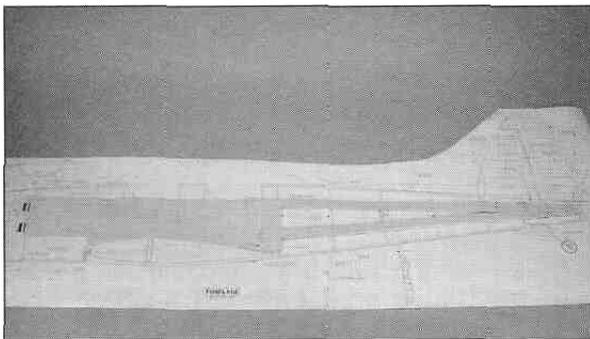


❑ 2. Build inner bulkheads B, C, D, F and H over the drawings using $1/4" \times 1/2" \times 24"$ balsa sticks.

❑❑ 6. Cut the upright at bulkhead F from $1/4" \times 1/2" \times 24"$ balsa and glue it into position.

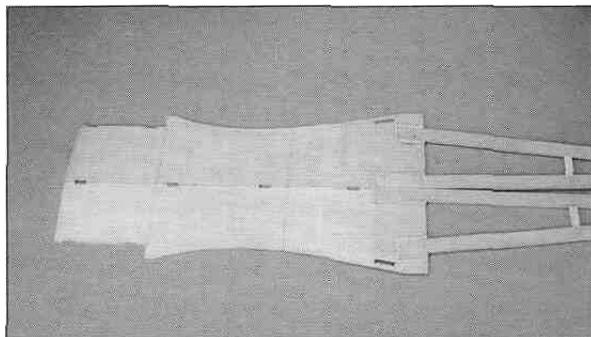


7. Locate **one** of the die-cut 1/8" ply forward fuselage sides. Cut off the front end of this side along the embossed line. This will establish two degrees of right thrust. **Note:** Only the right forward fuselage side has this cut made.

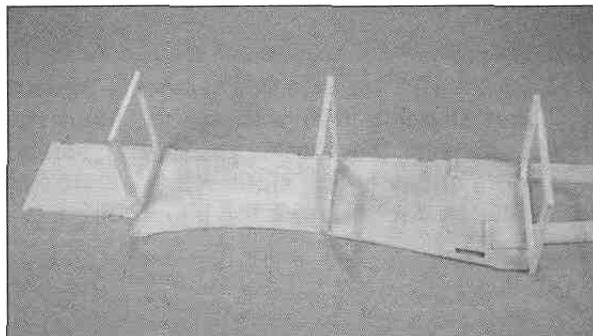


8. Fit this ply fuselage front to the fuse rear. Cut doublers for the two joints from 1/8" x 1/4" x 30" balsa. When satisfied with the fit, glue the ply front and doublers to the fuse rear with 6-minute epoxy.

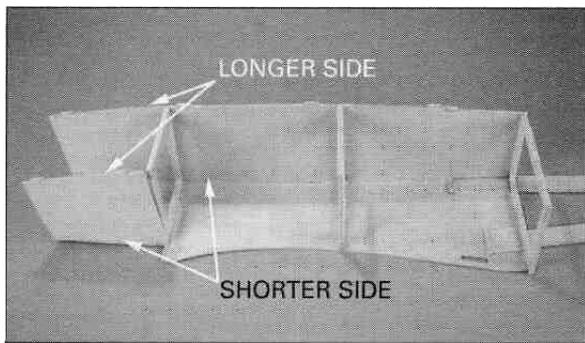
9. The left fuselage side is built over the right side. Remove the right side from your building board and turn it over. Use the leftover 1/8" x 1/4" stick to shim the forward ply side. Cover the side with Plan Protector. Follow steps 5, 6 and 8 to build the left side, aligning the parts over the right side. **Do not cut the front end of the left forward ply side.**



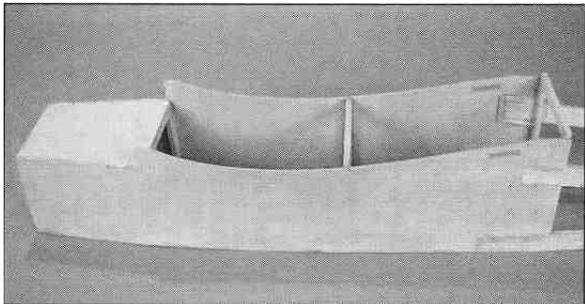
10. Place the right fuselage side over the plan and mark the locations of bulkheads B, C, D, E, F, G, H, HTW and I on the side. Place the left side over the right and transfer the marks to the left side. Next, mark each inner bulkhead at the center of the top edge. These marks and lines will be used to align the fuselage in the following steps.



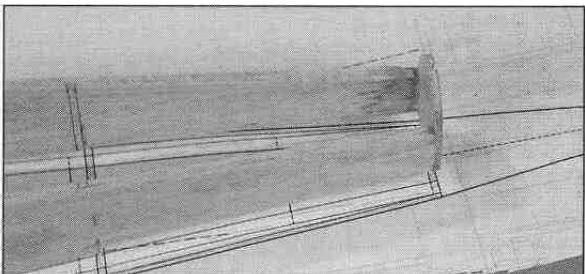
11. Glue inner bulkheads B, C and D to the right fuselage side using 6-minute epoxy. Be sure the bulkheads are at a 90° angle to the side. Epoxy will produce the strongest joint but you can use thin CA with accelerator if you are in a hurry. Inspect each joint for gaps and re-glue if necessary. **Note:** The top edge of each bulkhead is 1/8" below the top edge of the ply side.



❑ 12. Glue the die-cut 1/8" ply fuselage top and bottom decks to the right fuselage side. The parts interlock. Do not glue the bulkheads to the decks. **IMPORTANT:** Be absolutely certain that the shorter side of the top and bottom decks are glued to the right ply side. This establishes the proper amount of right thrust. The front of each deck should extend exactly to the front of the ply fuselage side.

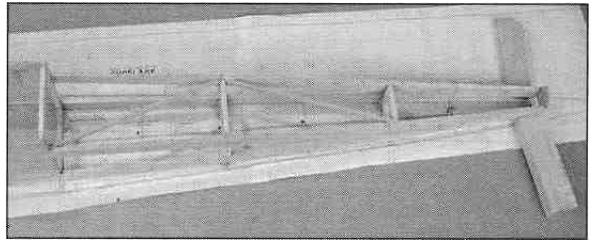


❑ 13. Glue the left fuselage side to inner bulkheads B, C and D using 6-minute epoxy. Align the bulkheads with the marks you made earlier. Before the epoxy cures, sight across the top of **both sides** to double check the alignment.



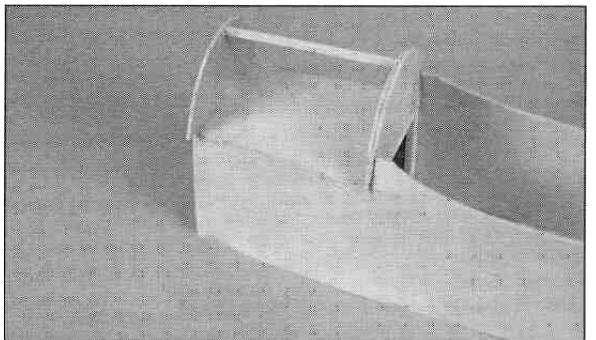
❑ 14. Pull the tail together and tack glue die-cut 1/8" ply bulkhead J to the rear of the longerons.

❑ 15. Lightly sand the sides of bulkheads F and H to match the slope of the sides. Install them in their proper locations in the fuselage sides and hold them in position with pins. Do **NOT** glue until later.



❑ 16. Place the fuselage upside-down over the top fuselage plan. Align the top deck with the plan and pin it into place. Use some blocks to hold the tail of the fuselage in place over the plan. Align the center mark on each bulkhead with the centerline on the plan. Sight down from above the fuselage to double check the alignment. When you are satisfied that everything is aligned properly, glue bulkheads F, H, and J to the fuselage sides.

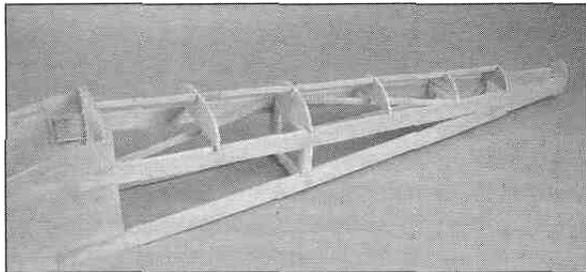
❑ 17. Use the 1/4" x 1/4" x30" balsa stick to glue a cross-brace between bulkhead D and F, and between F and H. This bracing will make the tail more rigid.



❑ 18. Glue the die-cut 1/8" ply bottom bulkhead formers AB and BB for bulkheads A and B into position. Glue doubler BBD to the **FRONT** of BB. **Note:** Make sure that AB follows the angle established for the firewall. Use side formers A and B to help in centering AB and BB.

❑ 19. Cut a stringer from 1/8" x 1/4" x 31" basswood to length and glue into place to the bottom of formers AB and BB. The remainder of this stringer will be used on the top formers.

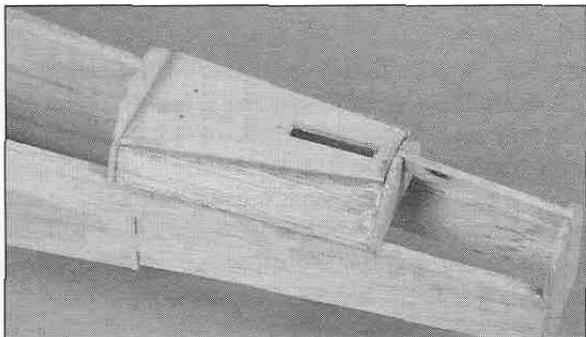
❑ 20. Bend the forward part of the wing saddle on the 1/8" ply fuselage side along the embossed cut line so that it conforms to BB. Glue it into position.



❑ 21. Glue the die-cut 1/8" balsa bottom bulkhead formers EB, FB, GB, HB and HTW into position.

❑ 22. Tack glue the die-cut 1/8" ply bulkhead former DB to the FRONT of bulkhead D. Glue another 1/8" x 1/4" x 31" basswood stringer to the bottom of formers DB, EB, FB, GB, HB and HTW.

Note: The exact position of DB will be determined when the wing is fitted to the fuselage. For now, just tack glue it so that the stringer is straight.

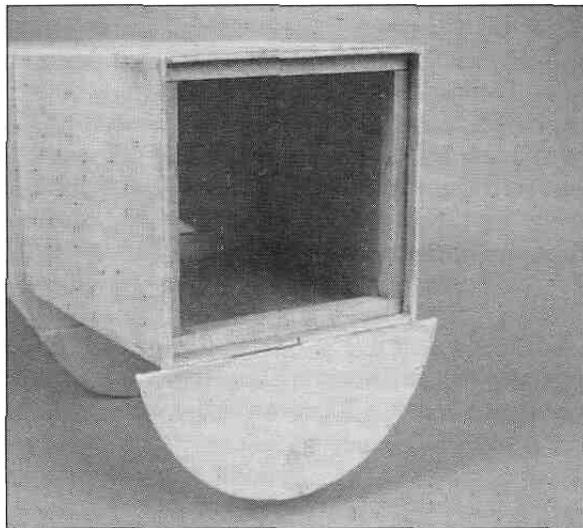


❑ 23. Cut and fit the tailwheel mount blocks from leftover 1/4" x 15/16" balsa using the

fuselage side view as a guide. These mount blocks are glued to the bottom longeron at an angle to conform to the curve on bottom formers HTW and JTW. Sand the blocks as needed for this angle and glue them to the bottom longeron.

❑ 24. Glue the die-cut 1/8" ply tailwheel mount into position on these blocks. Glue the die-cut 1/8" ply former JTW to the rear of this assembly. Glue a piece of 1/8" x 1/4" basswood stringer between JTW and J.

❑ 25. Remove the fuselage assembly from the building board.



❑ 26. Time to mount your engine. Before you glue the firewall into position, you should add some reinforcing sticks to the inside of the fuselage as shown in the above photo. Use the 1/4" x 3/8" x 36" basswood stick for this purpose (**DO NOT** use the longer basswood wing spars). Glue them into position with 30-minute epoxy. While you are waiting for the epoxy to cure you can mount your engine to the engine mount you have chosen. Position the mount on the plan at the firewall then locate the engine on the mount to fit the front of the cowl properly. Check the position on the model to be sure blind nuts and bolts will clear the structure. If

you will be using the Great Planes Isolation Mount™ you will need to reposition the Mounting Grommets as shown on the plan.

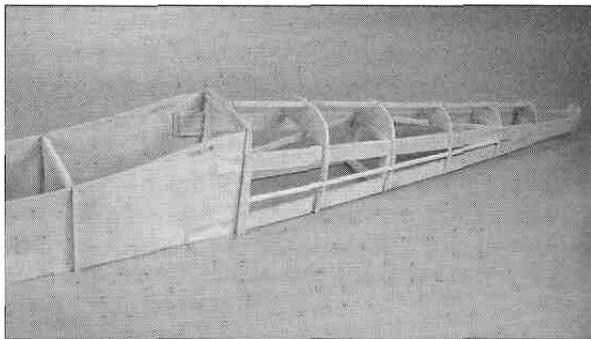
Note: Depending on the type of engine you are installing, you may need to add spacers between the engine mount and firewall. Layers of aircraft grade 1/4" plywood (not included) work well for this. The firewall location is designed so that a typical gasoline engine can be mounted on a Great Planes Isolation Mount (GPMA2000, not included).

Gasoline Engine Note: Gasoline engines mounted on an isolation mount, such as the Great Planes Large Engine Isolation Mount™, may need to be mounted on the centerline of the model. This is needed to obtain clearance between the mounting bolts of the isolation mount and the engine on the relatively narrow firewall. Shim the engine as needed to obtain 0° of right thrust (about 1/8").

Most engines will fit inside the cowl if the engine is mounted inverted. Be sure to allow for adequate cooling.

□ 27. Drill the 1/4" x 4-1/8" x 4-1/4" ply firewall as needed for your engine mount and install any required blind nuts. Glue the firewall to the fuselage with 30-minute epoxy. For added security you can pin the firewall to the fuselage if desired. Drill small holes through the sides of the fuselage into the firewall and epoxy in small dowels or toothpicks.

□ 28. Once the epoxy has cured, install any spacers needed for your engine mount. Be sure to install any blind nuts required to bolt your engine mount to the spacers.

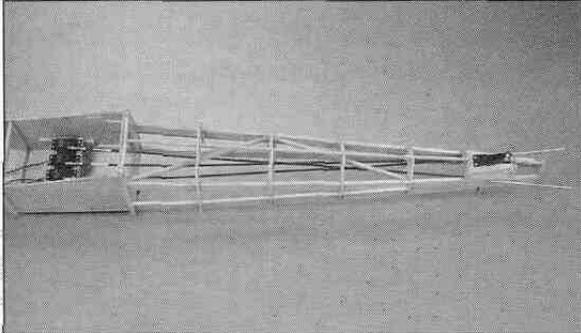


□ 29. Glue the die-cut 1/8" ply and balsa side bulkhead formers A, B, C, D, E, F, G and H into position on both sides of the fuselage. The flat end of A and B goes towards the bottom of the fuselage. The flat end of the rest of the formers goes towards the top of the fuselage (E and F can be glued on either way). The angled end of C goes towards the bottom. Glue side former DD to the rear of D. Note that DD is slightly wider than D and should protrude from D by about 1/32".

□ 30. Cut two 3/16" x 3/16" x 24" balsa stringers to length and glue them into place on side formers DD, E, F, G and H.

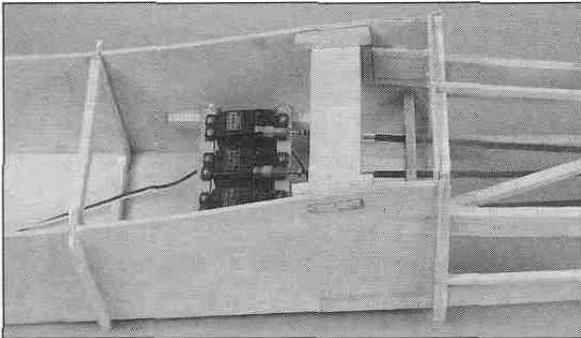
Now is a good time to install the servos and route the servo pushrods before any more formers and sheeting are glued into place. There are eight die-cut 1/8" ply pushrod guides provided for this purpose. You may also need some leftover 1/4" x 3/4" balsa sticks as well. The plan shows the servos mounted just forward of the TE of the wing. This is a good location if you will be using a lighter engine such as a 1.20 4-stroke engine. Our prototype model, with an O.S. FS-120 Surpass 4-stroke engine, balanced without any lead required with the servos positioned as shown on the plan. If you will be using a heavier gasoline engine you may want to mount the servos in the tail of the model. This can be done easily by notching the longerons for the servos, allowing them to protrude from the fuselage side. If you do this, use some leftover 1/4" x 3/8" basswood to reinforce the longerons.

Note: If you will be entering your Chipmunk in IMAA events you need to review their requirements for servo and control linkage sizes. They require high-torque servos on control surfaces and 4-40 size control linkages, with metal clevises.

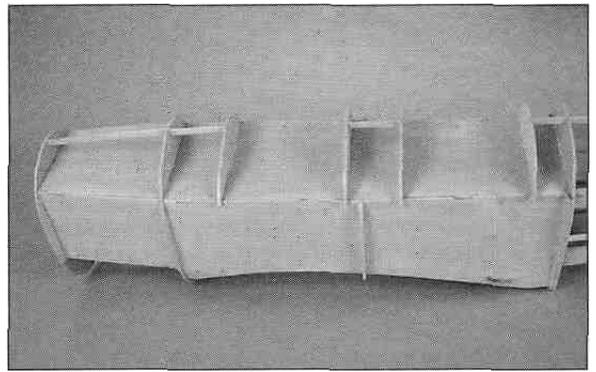


□ 31. Install the servos and route the pushrods for the servo installation you will be using.

Note: You will need to temporarily mount the tailwheel assembly. The lower side longeron will need to be carved out in the area where the pushrod clevis will connect to the rudder torque rod horn.



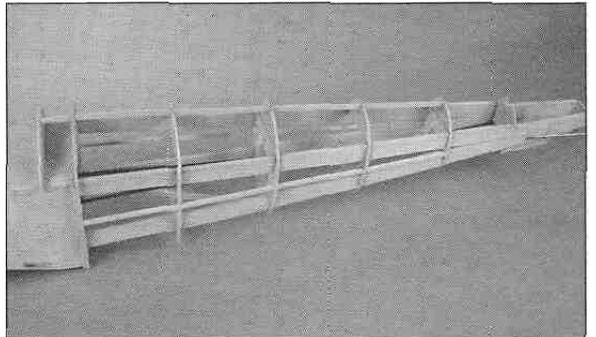
□ 32. Glue the 1/4" x 1-1/4" x 5-1/4" ply wing hold down block into the slots in the fuselage sides with 30-minute epoxy. Cut and glue some 1/4" x 3/8" reinforcing sticks into place using a leftover basswood stick.



□ 33. Glue the die-cut 1/8" ply and balsa top bulkhead formers AT, BT, IP, (2) CT and (2) DT into position.

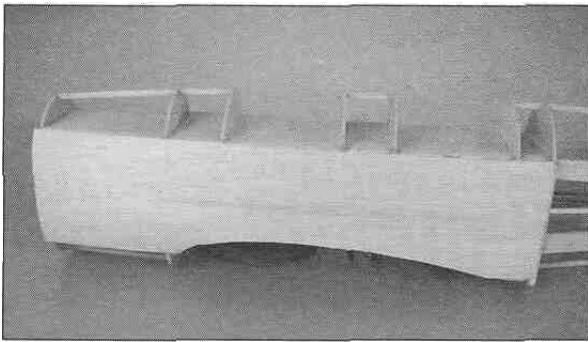
Note: Make sure that AT follows the angle established for the firewall.

□ 34. Cut a 1/8" x 1/4" x 31" basswood stringer to length and glue into place to top formers AT, BT and IP. Do the same for the two CT top formers. Use the remainder of the 1/8" x 1/4" x 31" stringer used on the bottom formers.



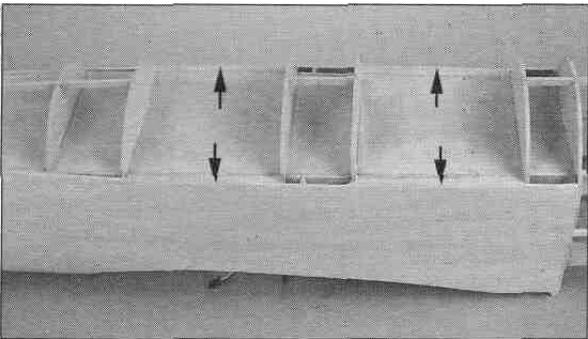
□ 35. Glue the die-cut 1/8" ply and balsa top bulkhead formers ET, FT, GT, HT and I into position.

□ 36. Cut a 1/8" x 1/4" x 31" basswood stringer to length and glue into place to top formers DT (both), ET, FT, GT and HT.

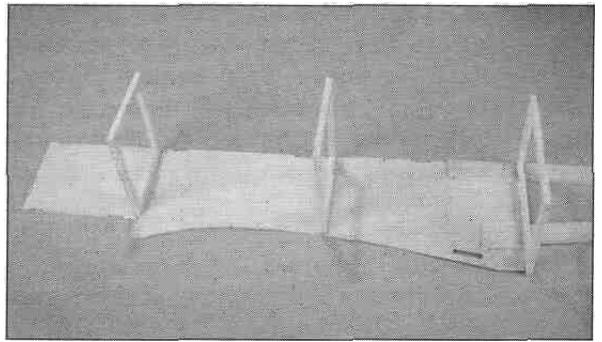


❑ 37. Glue two sheets of 1/8" x 3" x 24" balsa together to form a sheet 6" wide. Sand the outer side of this sheet flat and smooth. Cut, fit and glue this sheet into position to the left fuselage side between side formers A and D with the smooth side out. Align the top edge of the sheet even with the top of the top deck. **Note:** This sheet should extend only to former D and should not cover DD. Wet the sheeting as needed to allow it to bend better.

❑ 38. Make and glue a second balsa sheet to the right fuselage side.

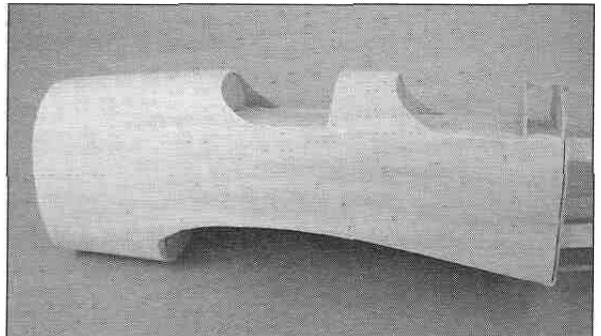


❑ 39. Using some leftover 1/8" balsa sheeting cut, fit and glue filler strips between the sheeting you just added and the fuselage top deck. You only need to do this in the area of the front and rear cockpits, between top formers IP and CT and between CT and DT.



❑ 40. Use some more leftover 1/8" balsa sheeting to cut, fit and glue filler strips between the side sheeting and the ply fuselage sides at the wing saddle area. Angle the strips slightly to conform to the 6° dihedral angle of the wing.

Note: There is a small section of sheeting that needs to be added at bulkhead D. This will be added later when the fuselage bottom is sheeted.



❑ 41. Use 1/8" x 3" x 30" balsa to sheet the top of the fuselage between AT and IP Also sheet the area between the front and rear CT's.

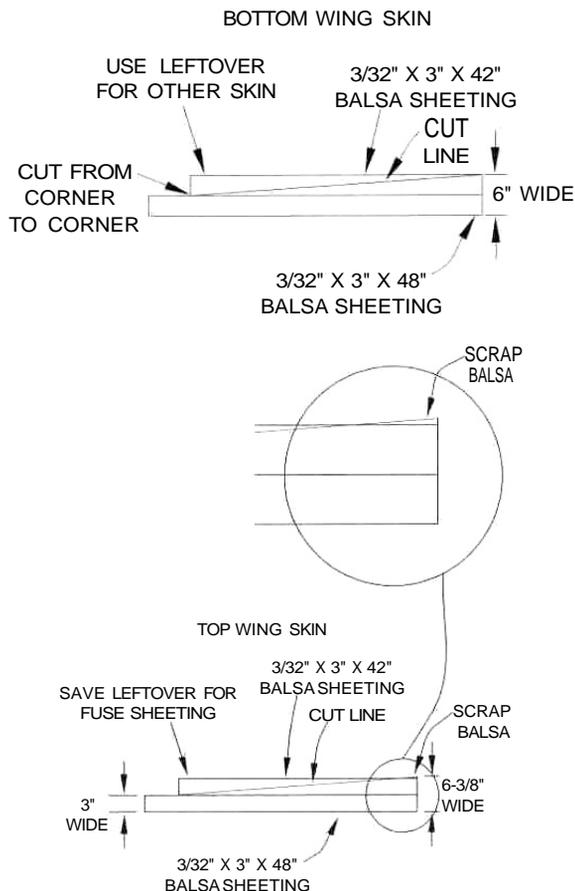
❑ 42. Use leftover 1/8" x 3" balsa sheeting to sheet the bottom of the fuselage between AB and BB.

Before the rear of the fuselage is sheeted the wing must be fitted to the fuselage. So, it's time to:

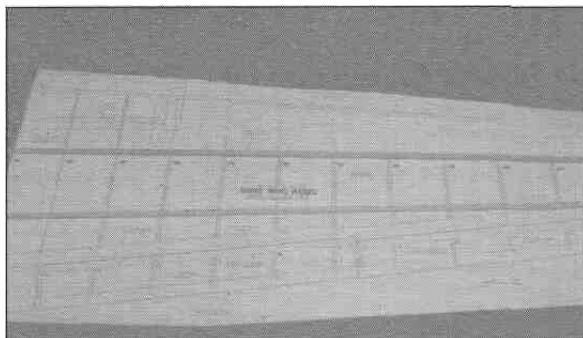
BUILD THE WING

- ☐☐ 1. Lay the right wing plan on your building board and cover it with Plan Protector.

Note: It will be easier if you prepare all four leading edge wing skins at the same time.



- ☐ 2. Prepare the four leading edge wing skins according to the sketches above. The skins for the top of the wing are 3/8" wider than those for the bottom. Glue the skins together using your favorite method (we use masking tape to form a hinge and then join them with aliphatic resin glue). Sand the best side smooth with 150-grit sandpaper.

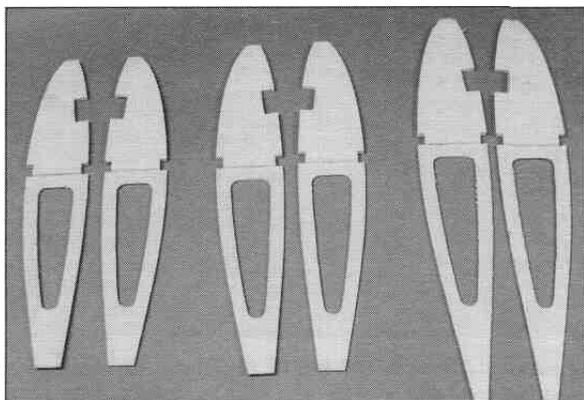


- ☐☐ 3. Pin the 1/4" x 3/8" x 44" basswood lower spar over the plan.

- ☐☐ 4. Pin a 1/4" x 3/8" x 44" basswood stick on the dashed lines called "shim stick." This will hold the rear of the ribs at the proper angle until there are enough pieces to hold the wing rigid. (Save the shim stick for later use.)

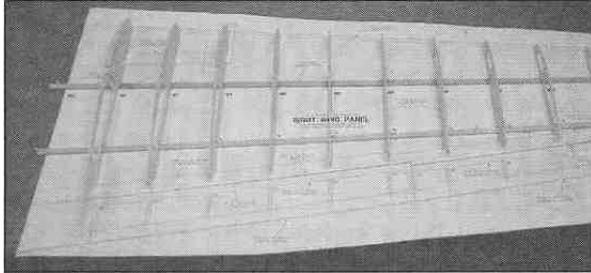
- ☐ 5. Punch the ribs from their die-cut sheets, sanding the backs of the sheets lightly if they do not come out easily. Number each rib as you do so; don't forget to number the aileron and flap ribs as well. Check the fit of the spar to the spar notches in each rib.

Note: If you will be building functional flaps for your Chipmunk, glue in the rear lightening holes in ribs W4 and W5.

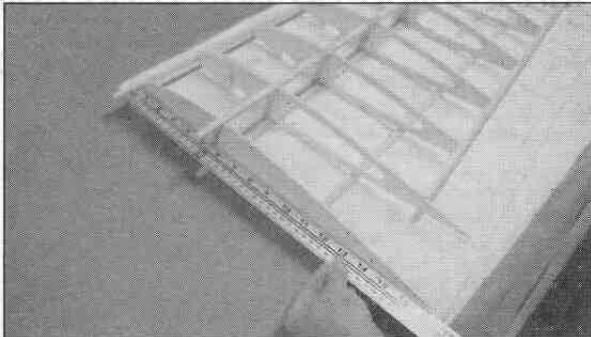
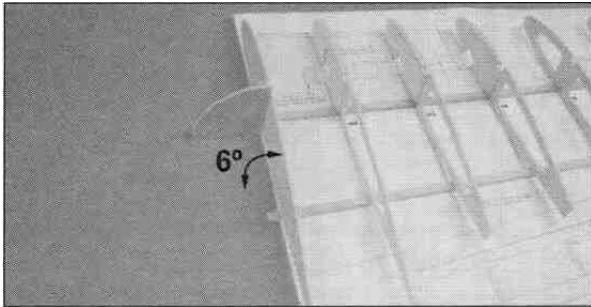


- ☐ 6. Glue the die-cut 1/8" ply landing gear doublersto ribs W2, W3 and W4 using 30-minute epoxy. Glue them to the sides shown on the

plan. There are two doublers for W2. The one with the long cutout is glued to the side facing the wing root. This cutout will lock in the landing gear stub (torque) block. Check the fit of the landing gear block and stub block in their cutouts. Make sure you make a set for the right and left wing panels.

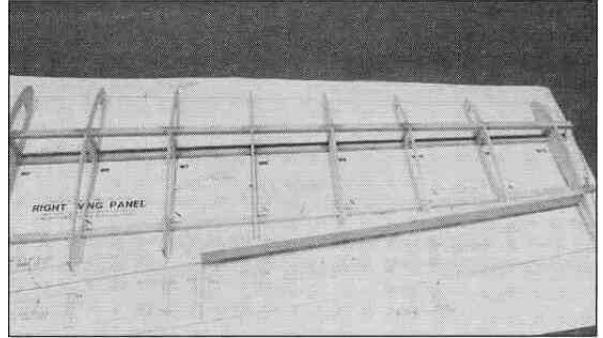


□ □ 7. Glue ribs W2 -W12 into place on the lower spar with a drop of CA, making sure they are vertical. Pin the rear of each rib to the shim stick.

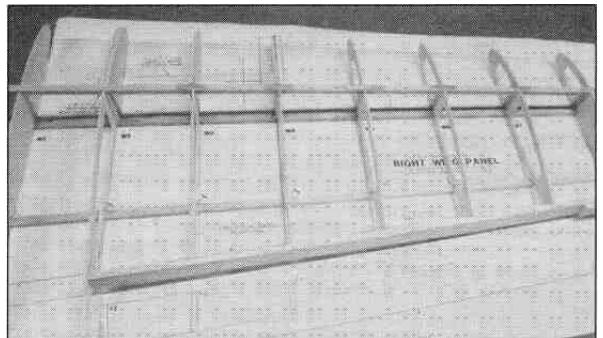


□ □ 8. Use the dihedral gauge to obtain the proper angle (six degrees) of W1. Glue W1 into place on the lower spar. Pin the rear of W1 to the shim stick. Use a long straightedge to insure that W1 is straight.

□ □ 9. Glue the 1/4" x 3/8" x 44" basswood top spar to the ribs.

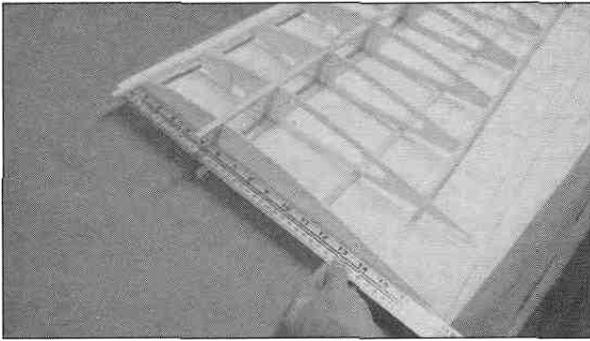


□ □ 10. Cut a 1/4" x 3/4" x 24" balsa stick to the correct length and glue it to the rear of W8 -W12. The tip end is glued to the side of W12. Glue the top flush with the top edges of the ribs. The stick extends midway between W7 and W8.



□ □ 11. Cut a 1/4" x 7/8" x 30" balsa stick to the correct length and glue it to the rear of W2 -W8. The root end is glued to the side of W2. The tip end glues to the side of W8 and the front of the outer TE.

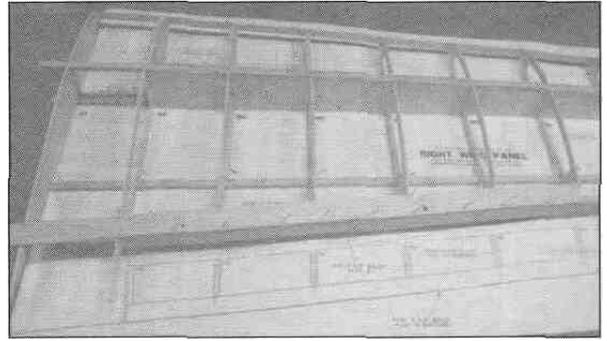
□ □ 12. Use the remainder of the 1/4" x 7/8" balsa stick to cut and fit a TE piece between W1 and W2.



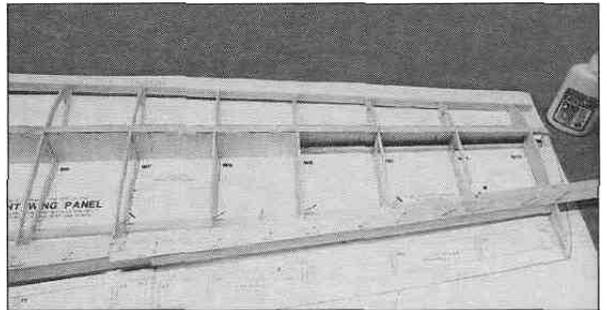
□ □ 13. Glue the 1/4" x 1/2" x 48" balsa leading edge stick to the front of the ribs. Align the top of the LE even with the tops of the ribs. Use a long metal straightedge to get the LE as straight as possible. **IMPORTANT:** Use a straightedge along the sides of W1 and W12 to insure that they are straight and flat.

□ □ 14. Use a 3/32" x 4" x 36" balsa sheet to prepare the spar webs. **Note:** The sheeting provided is ample to prepare all of the webs, but there is no extra material so work carefully. There is webbing from W2 to W12 glued to the front of the spars and from W2 to W9 glued to the rear of the spars. Start with the ribs that are spaced the widest first. Trim and sand the sheet to fit between the two ribs. Sand the bottom edge of the sheet to fit the angle of the lower spar, then mark and cut the sheet to the proper height. Continue cutting, trimming, sanding, and gluing the sheet for all of the webbing. Be sure to remove any pins that will be hidden by the webbing before gluing it into position.

□ □ 15. Prepare the TE that you installed in steps 10 and 11 for sheeting. Carve and sand the TE to blend with the top of ribs W1-W12. If you are not a careful sander you may want to put some masking tape on the tops of the ribs so that you won't alter their shape.

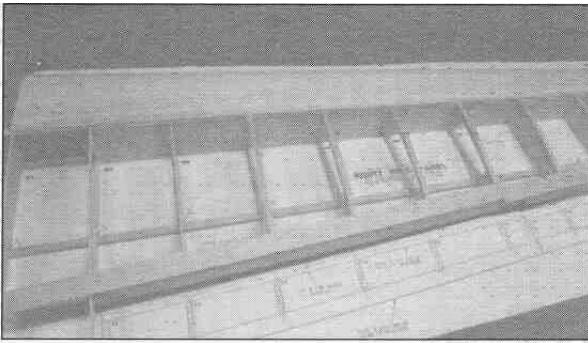


□ □ 16. Glue a 3/32" x 15/16" x 24" balsa TE sheet to the inner TE and ribs using aliphatic resin. Note that the sheeting extends from W1 to W7 and is trimmed at an angle. Use your long straightedge to keep WI straight.

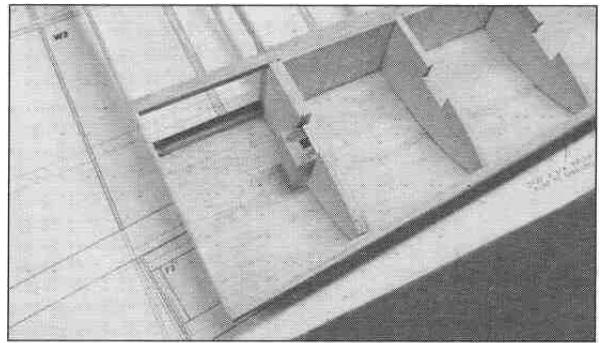


□ □ 17. Glue a 3/32" x 15/16" x 24" balsa TE sheet to the outer TE and ribs using aliphatic resin. Note that the sheeting extends from W7 to W12 and is trimmed at an angle. Study the plan to see how the sheeting is trimmed to fit the flap tip.

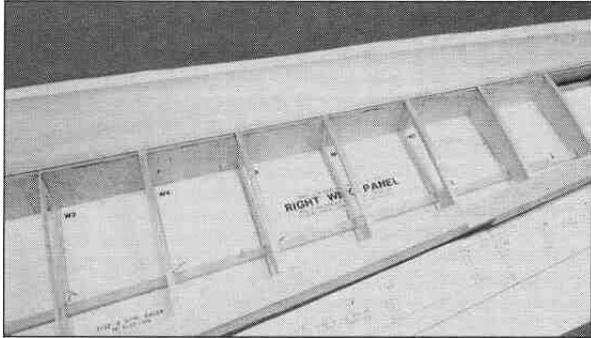
□ □ 18. Prepare the 1/4" x 1/2" balsa LE that you installed in step 13 for sheeting. Carve and sand the LE to blend with the tops of the ribs. Use masking tape on the ribs so that you don't alter their shape.



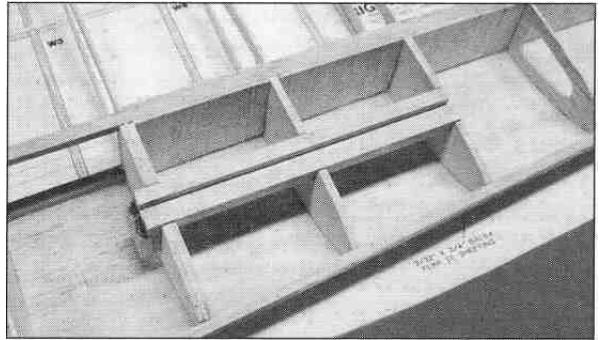
19. Glue the leading edge skin that you prepared in step 2 to the top spar, ribs and LE using aliphatic resin. The sheeting extends to the center of the spar.



24. Glue the landing gear's 5/8" x 1" x 1" maple stub block to W2 using 30-minute epoxy. The block fits into the long cutout in the 1/8" ply doubler. The groove faces W2.



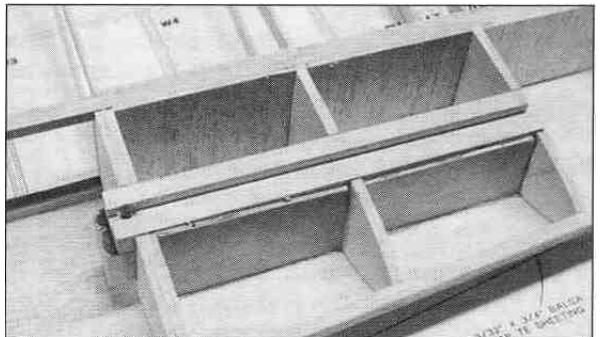
20. Using 3/32" x 1/4" x 30" balsa, cut, trim and glue cap strips on the tops of ribs W4 -W12. Cut the longer pieces first.



25. Check the fit of the 1/2" x 1" x 8-1/2" maple landing gear rail in ribs W2, W3 and W4. When satisfied with the fit, glue it in place with 30-minute epoxy.

21. After the glue has fully dried, remove the wing from the building board.

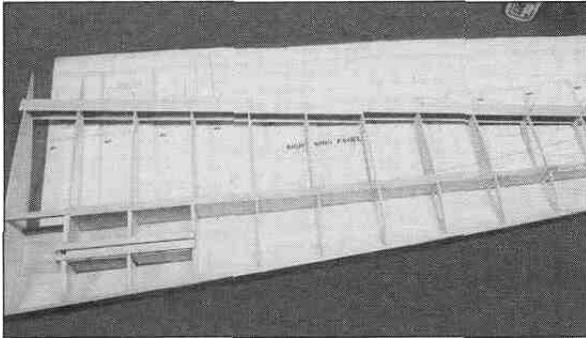
22. Carve and sand the TE and LE to blend with the bottom of the ribs as you did in steps 15 and 18.



26. Fit and glue the die-cut 1/8" ply webs to the front of the landing gear rail using 30-minute epoxy.

23. Trim the LE and TE sheeting and the spars even with ribs W1 and W12.

- □ 27. Using a 1/4" bit, drill a hole through the landing gear rail into the stub block. Radius the top of the hole to fit the bend in the 1/4" landing gear wire. (See the photo at step 26.)



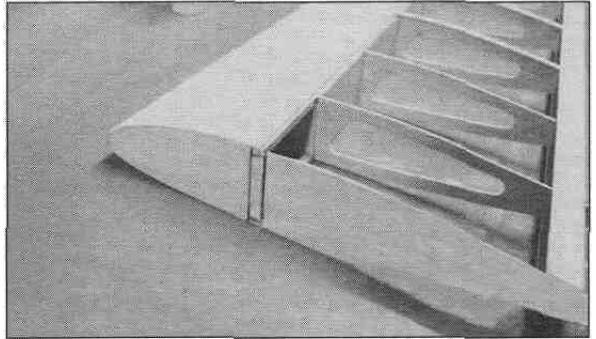
- □ 28. Glue a 3/32" x 15/16" x 24" balsa TE sheet to the bottom of the inner TE and ribs using aliphatic glue. Note that the sheeting extends from W1 to W7 and is trimmed at an angle. Use your straightedge to keep W1 straight.

- □ 29. Glue a 3/32" x 15/16" x 24" balsa TE sheet to the bottom of the outer TE and ribs using aliphatic glue. Note that the sheeting extends from W7 to W12 and is trimmed at an angle.

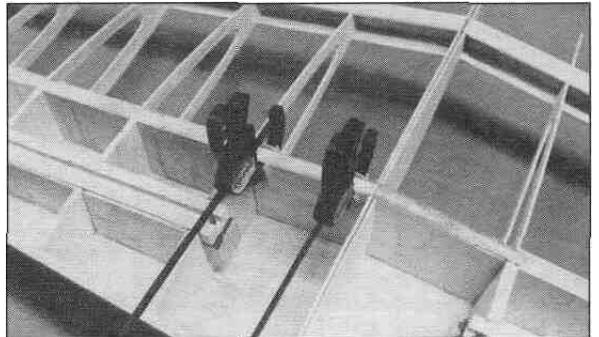
- □ 30. Trim the TE sheeting even with ribs W1 and W12.

- 31. Return to step one and assemble the left wing panel.

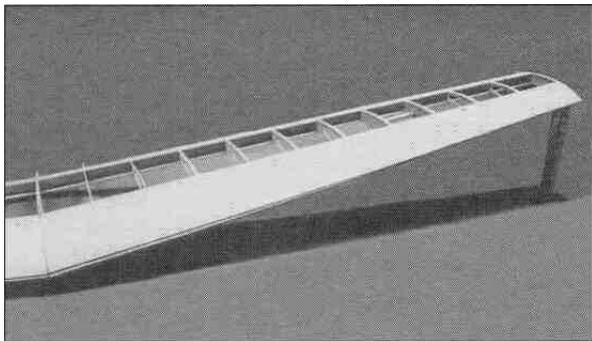
JOIN THE WING PANELS



- □ 1. Prepare the wing panels for joining by cutting a 1/16" wide slot in front of and behind the spars in W1 as shown in the photo.

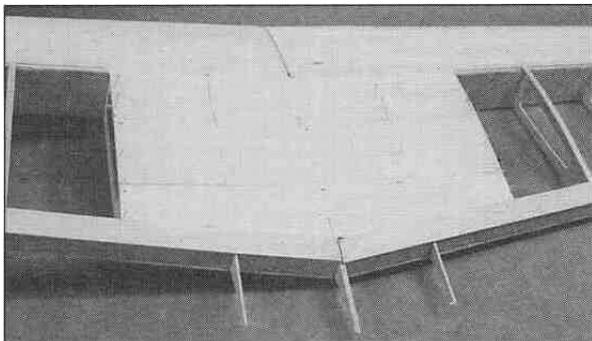


- 2. Test fit the die-cut 1/16" ply dihedral braces to the wing panels. The shorter ply brace goes on the forward side of the spars. When satisfied with the fit, glue the braces to left wing panel with 30-minute epoxy. Remove the right panel and clean off any epoxy that seeped out from the joint.



❑ 3. After the epoxy has cured, slide the right panel back into position. Position the right panel flat on your building board and prop the left tip off the building board. Don't you wish your surface was longer!!

❑ 4. Measure the distance under the left wing tip at the bottom of rib W12. If it is 8-3/4" you have exactly six degrees of dihedral in each panel. Don't be concerned if it is a little off as the dihedral angle is not at all critical. If it is off by more than 1/2" you might want to find out why, but you don't really need to fix it. When you are satisfied, glue the dihedral braces to the right wing panel with 30-minute epoxy. Use **epoxy** on the W1 ribs as well.



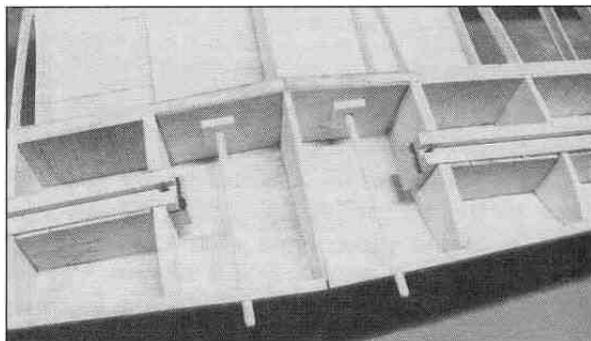
❑ 5. Using 3/32" x 3" x 36" balsa, sheet the top center of the wing from W3 to W3. The strength of the center section is important so we recommend that you use aliphatic resin glue. Note in the photo that we used one continuous piece across the entire center section rather than two pieces from W1 to W3 on each side. This greatly increases the strength of the joint,

but it is a bit harder to install this way. Do not sheet the bottom center section at this time.

❑ 6. Glue the die-cut 1/8" ply LE doublers to the rear of the LE between W1 and W2 on both wing panels.

❑ 7. Drill two 5/16" holes through the wing LE and doubler where shown on the plan and in the photo.

❑ 8. Cut two 1/4" x 7/8" x 7/8" balsa blocks from leftover sticks and drill a 5/16" hole in the center of both blocks.



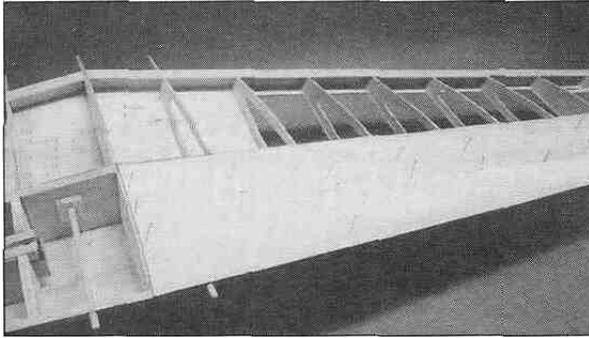
❑ 9. Slide the 5/16" x 6" wing dowels through the holes in the LE and put a block on the end of each dowel. Align the blocks on the 1/16" ply dihedral braces so that the dowels are parallel to the wing centerline. Glue the **BLOCKS ONLY** to the dihedral braces with 6-minute epoxy. Remove the dowels before the epoxy sets.

❑ 10. Fit the wing to the fuselage. Center the wing and mark the location of the dowels on bulkhead B. This is done by putting a pencil through the hole in the LE and marking the bulkhead.

❑ 11. Remove the wing and drill 5/16" holes into bulkhead B.

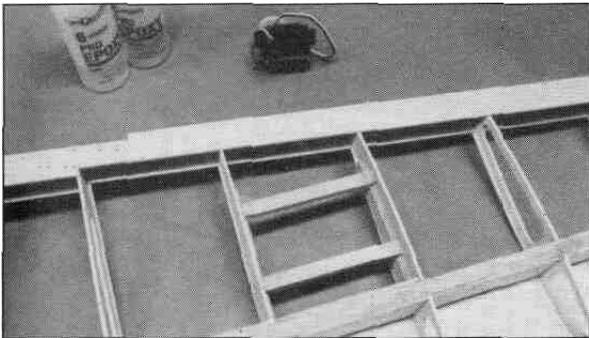
❑ 12. Put the dowels into the wing and fit the wing back onto the fuselage. Make any adjustments needed to get the dowels to fit properly into the holes in bulkhead B. When

satisfied with the fit, glue the dowels into the wing with 6-minute epoxy. Use caution not to get any epoxy on the fuselage.

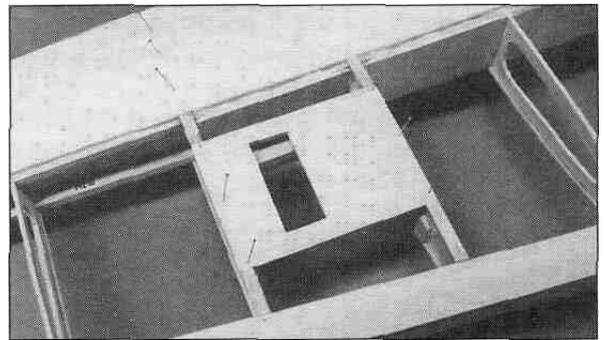


❑ 13. Using the leading edge wing skins you prepared earlier, sheet the bottom LE of both wing panels. We find it easiest to use aliphatic resin on the ribs and medium CA on the spar. Thin CA can then be used on the LE.

❑ 14. Using 3/32" x 3" x 36" balsa, sheet the bottom center of the wing from W3 to W3. Using one continuous piece across the entire center-section will increase the strength of the joint.



❑ 15. Working on the left wing panel, build the aileron servo mount between ribs W8 and W9. Cut two servo mount rails from the 1/4" x 3/8" x 44" basswood shim stick used earlier. Cut two 3-3/4" long bracing strips from die-cut 1/8" ply servo rail brace strip. Fit and glue these pieces into place, spacing the rails to fit the servo you will be using. Position the rails so the top of the servo will protrude below the wing the desired amount.



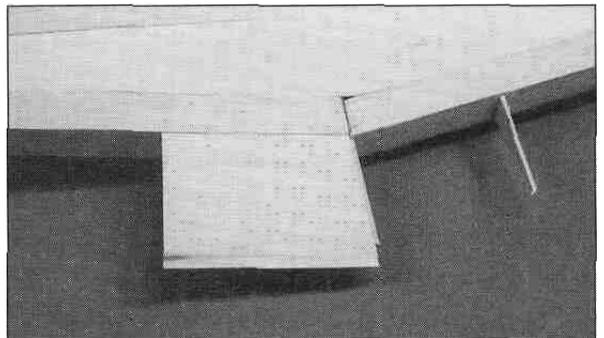
❑ 16. Sheet the area around the servo using leftover 3/32" x 3" balsa. This gives the covering a place to adhere to.

❑ 17. If you are installing flaps on your Chipmunk, build the flap servo mount between ribs W4 and W5 as you did above for the aileron servo. Sheet the area around the servo.

❑ 18. Using 3/32" x 1/4" x 30" balsa strips cut, fit and glue cap strips on the bottom of ribs W4-W7 and W10-W12.

❑ 19. Cap strip ribs W8 and W9 where there is no sheeting.

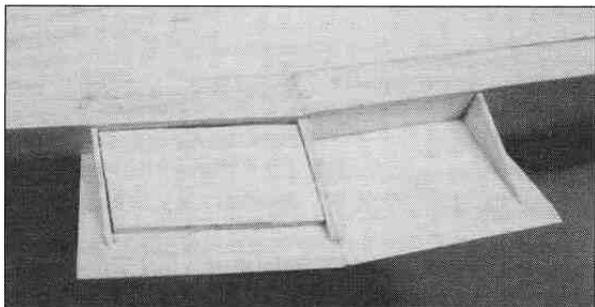
❑ 20. Locate a 1-1/2" x 1-5/8" x 9-1/2" balsa block. Shape the block to the outline of the wing tip using the plan as a guide. Glue the block onto tip rib W12. Rough carve and sand the wing tip block to shape.



❑ 21. Use some leftover 3/32" x 3" sheeting to cut a TE sheet to go between ribs W1, W2 and W2A (W2A is added in the next step). Use the

plan as a guide to cut the sheeting to the proper size. Glue this piece to the tops of the ribs.

□ □ 22. Glue W2A into position. Sand the TE of the sheeting on the bottom to match the contour of W1, W2 and W2A.



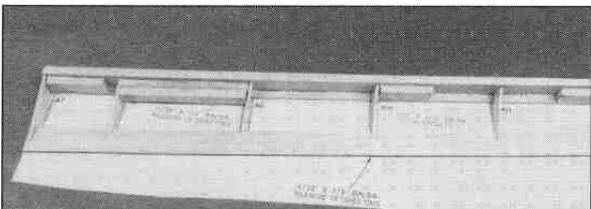
□ □ 23. Cut the 5/8" x 2" x 8-1/2" balsa filler block to fit between W1 and W2. Glue it into position. Sand the block to match the contour of the bottoms of W1 and W2. (W2A is not shown in the photo.)

□ □ 24. Cut another TE sheet to shape and glue it to W1, W2, W2A and the block.

□ 25. Return to step 15 for the other wing panel.

□ 26. Rough sand the entire wing.

BUILD THE AILERONS



□ □ 1. Cover the right wing panel with Plan Protector. Cut the bottom LE sheet from 3/32" x 1/2" x 24" balsa and pin it to the plan.

□ □ 2. Cut the bottom TE sheet from 3/32" x 3/4" x 24" balsa and pin it to the plan.

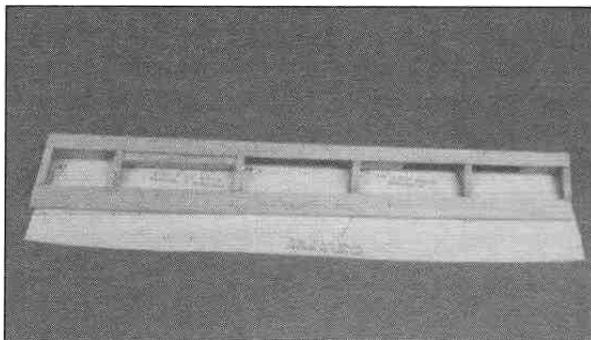
□ □ 3. Cut the LE from 1/4" x 3/4" x 24" balsa. Sand the bottom of the LE to match the angle of the aileron ribs at their LE. Glue and pin it to the 3/32" x 1/2" LE sheet.

□ □ 4. Glue ribs A7 -A12 into place.

□ □ 5. From a 1/4" x 1/2" x 36" balsa stick, cut and glue two horn reinforcement blocks where the aileron horn will mount.

□ □ 6. Cut and glue hinge blocks into position from the 1/4" x 1/2" balsa.

□ □ 7. Remove the aileron from the plan. Carve and sand the top of the LE to match the contour of the ribs. Taper the TE as well. Be careful as it is easy to sand into the ribs.



□ □ 8. Glue the top 3/32" x 1/2" LE sheet into position.

□ □ 9. Glue the top 3/32" x 3/4" TE sheet into position. Cut, fit and glue cap strips to the top and bottom of the aileron ribs using 3/32" x 1/4" x 30" balsa.

□ □ 10. Fit the die-cut 1/8" ply horn base where shown on the plan and glue it in place.

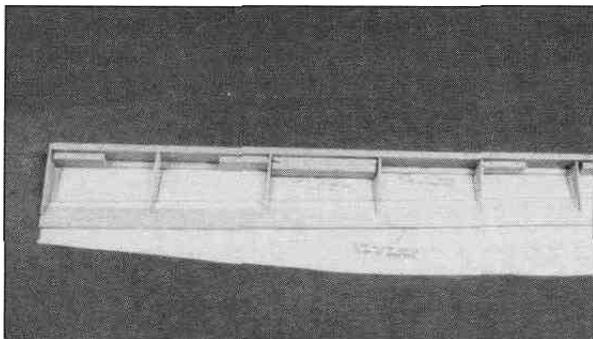
□ □ 11. Sand the Aileron to fit the wing. Mark the centerline of the aileron leading edge along its entire length. Using the cross-section on the plan as a reference, sand the leading edge to the "V" shape shown. Make sure the "V" is large enough to allow for the full up and down movement of the aileron.

❑❑12. Cut four additional hinge blocks from the 1/4" x 1/2" balsa. Glue these into position in the TE of the wing opposite the position of the blocks in the aileron.

❑ 13. Return to step one and build the left aileron.

BUILD THE FLAPS

Note: You must build the flaps even if you will not be installing working flaps. If you will not be installing working flaps, simply glue the flaps to the TE of the wing



❑❑1. Cover the right wing panel with Plan Protector. Cut the bottom LE sheet from 3/32" x 1/2" x 24" balsa and pin it to the plan.

❑❑2. Cut the bottom TE sheet from 3/32" x 3/4" x 24" balsa and pin it to the plan.

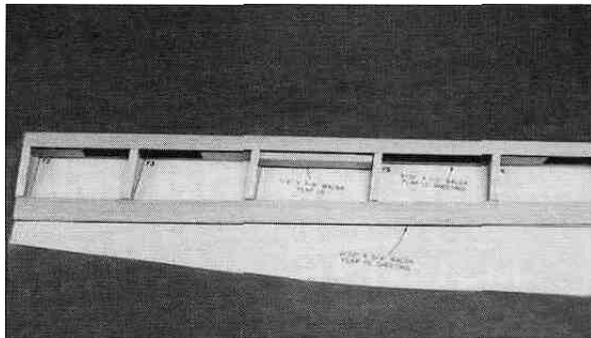
❑❑3. Cut the LE from 1/4" x 7/8" x 24" balsa. Sand the bottom of the LE to match the angle of the flap ribs at their LE. Glue and pin it to the 3/32" x 1/2" LE sheet.

❑❑4. Glue ribs F2 - F7 into place. Note that there are two F7 ribs.

❑❑5. From a 1/4" x 1/2" x 36" balsa stick, cut and glue two horn reinforcement blocks where the flap horn will mount.

❑❑6. Cut and glue hinge blocks into position from 1/4" x 1/2" balsa.

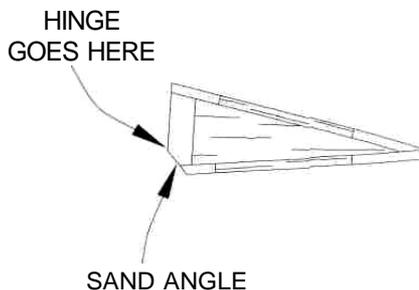
❑❑7. Remove the flap from the plan. Carve and sand the top of the LE to match the contour of the ribs. Taper the TE as well. Be careful as it is easy to sand into the ribs.



❑❑8. Glue the top 3/32" x 1/2" LE sheet into position.

❑❑9. Glue the top 3/32" x 3/4" TE sheet into place. Cut, fit and glue cap strips to the top and bottom of the flap ribs using 3/32" x 1/4" x 30" balsa.

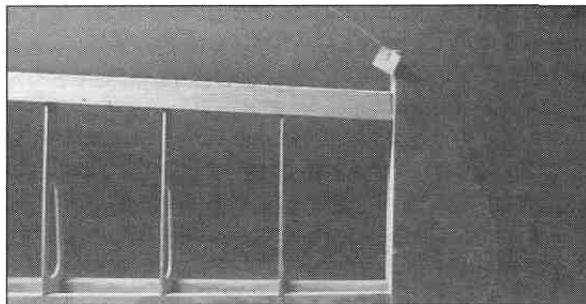
❑❑10. Fit the die-cut 1/8" ply horn base where shown on the plan and glue it in place.



❑❑11. Sand the flap to fit the wing. The flaps are hinged along the bottom of the flap, not along the centerline as the ailerons were. Sand an angle along the bottom 1/4" of the flap LE. Make sure the angle is large enough to allow for the full down movement of the flap.

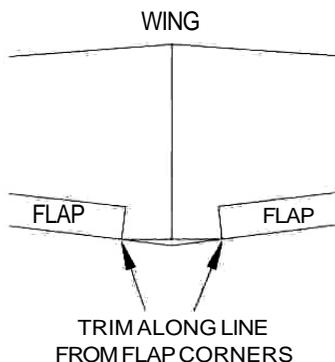
12. Cut four additional hinge blocks from the 1/4" x 1/2" balsa. Glue these into position in the TE of the wing opposite the position of the blocks in the flap.

13. Return to step one (1) and build the left flap.



2. Mark the location of the wing bolt plate on the outside of the fuselage. Mount the wing on the fuselage and align it squarely to the fuselage. This is easily done using a piece of string as a guide. Put a pin in the tail of the fuselage on the centerline. Tie a loop in one end of the string and place it over the pin. Move the other end of the string to one wing tip and put some masking tape around the string. Draw an arrow on the tape where it reaches the wing tip. Now swing the string over to the other wing tip. If the tip aligns with the arrow the wing is properly aligned. If not, adjust the wing's position and try again. Continue to adjust the wing until both wing tips are aligned with the arrow on the tape. Secure the wing exactly in this position.

MOUNT THE WING TO THE FUSELAGE



1. Mount and align the wing with the fuselage (see step 2). The center TE sheeting that was added earlier will need to be trimmed where it extends past bulkhead DB. Lightly mark the outline of the fuselage on the top of the wing. Now mark the location of the front of former DB on the wing. Remove the wing from the fuselage. Draw a line on the top of the wing connecting the aft most corners of the flaps. Compare this line to the marks you made for the front edge of former DB. If the line connecting the corners of the flaps is even with the marks for former DB, then you are all set. Trim the wing along this line. If the line does not line up as above you will need to adjust where you trim the wing.

3. Drill two pilot holes for the 1/4-20 wing bolts using a 13/64" bit. Drill the holes through the wing and into the ply wing bolt plate so that the holes will be centered fore/aft in the wing bolt plate.

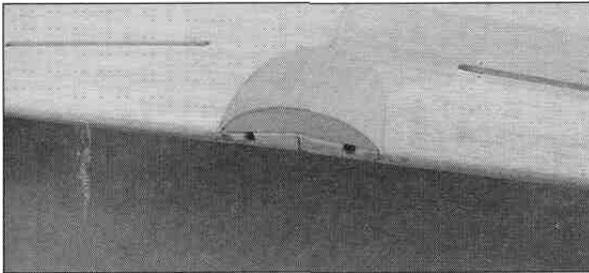
4. Remove the wing from the fuselage. Tap the holes in the ply plate with a 1/4-20 tap. Apply a couple of drops of thin CA to the threads to harden them. After the CA has cured, run the tap through the threads to clean them up.

5. Fit the two die-cut 1/8" ply wing bolt plates for the wing bolt holes onto the bottom of the wing. Glue these into position over the holes with 6-minute epoxy.

6. Enlarge the wing bolt holes in only the wing with a 17/64" bit, drilling through the 1/8" ply plates as well.

7. Fiberglass both sides of the center of the wing with 3" tape (included). Put a small patch around the wing dowels as well.

8. After the fiberglass has dried, put some Plan Protector on the center of the wing at the leading and trailing edges where they will touch the fuselage. Bolt the wing to the fuselage with the 1/4-20 nylon bolts.



9. Use leftover 1/8" ply to make a bulkhead for where the leading edge of the wing meets the fuselage. First fit it to the bottom surface of the wing, then use a pencil to draw the outline where it meets the fuselage. Now trim this bulkhead to shape allowing for the 3/32" sheeting that will be used to fair the wing with the fuselage.

Note: The above photo shows how the wing should look after you finish step 11.

10. Position the bulkhead back on the wing. When satisfied with the fit, glue it to the **WING ONLY**.

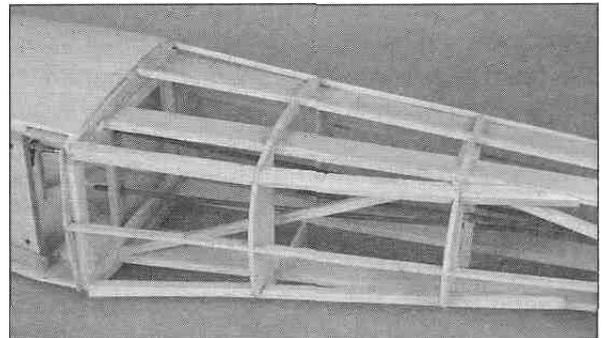
11. Cut and fit 3/32" balsa from leftover wing sheeting to smoothly fair the wing with the fuselage. Glue the sheeting to the former and wing.

12. Glue doubler DB to the front of bulkhead D. Align DB 3/32" above (towards the top of the fuselage) the TE of the wing to allow for the 3/32" balsa sheeting that will be added to the bottom of the fuselage.

13. Remove the wing from the fuselage. Make any adjustments needed to the trailing edge of the wing where it fits to DB.

FINISH THE FUSELAGE

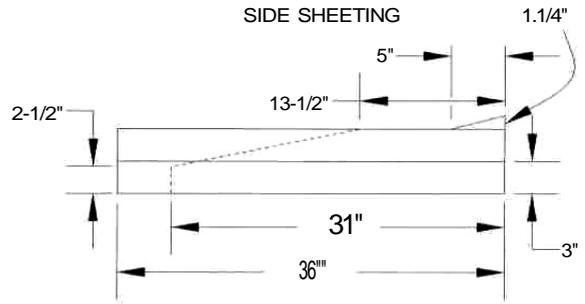
CAUTION: Read and study steps 1 - 5 before doing anything!



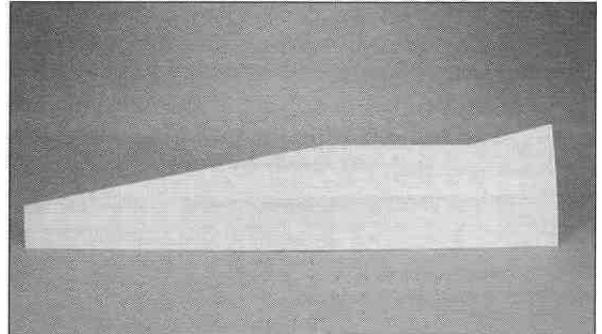
1. Use the 3/8" x 3/8" x 30" balsa stick to cut, fit and glue filler strips between formers DB and EB, EB and FB and between former FB and the lower longeron on both sides of the fuselage as shown in the photo. These strips are used as a place to glue the side sheeting to and also form a filler block for sanding to shape where the bottom sheeting meets the side sheeting.



□ 2. Add a stringer to the fuselage from former DT to HT. Use the supplied 3/16" x 3/16" x 24" balsa sticks. Cut notches in top formers DT, ET, FT, GT and HT, and add a stringer to each side as shown in the photo above. This will provide a gluing surface where the top sheeting meets the side sheeting.

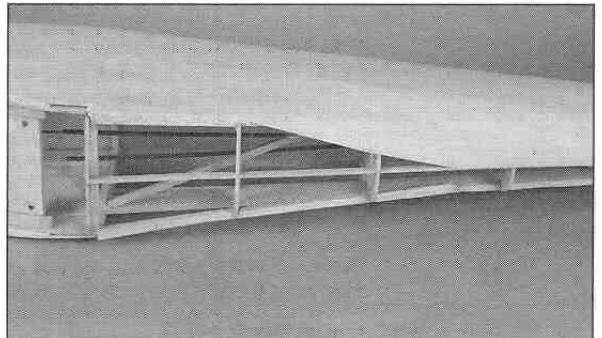


Before sheeting the rear of the fuselage you should decide what technique you would like to use. Some modelers prefer to add sheeting in strips, going from stringer to stringer, one strip at a time. This requires considerable sanding once the sheeting has been glued into place.



□ 4. If you will be making skins to do the sheeting, cut and fit the individual pieces from 3/32" x 3" x 36" balsa sheets. Glue them together and sand them flat and smooth. Make two skins, one for each side.

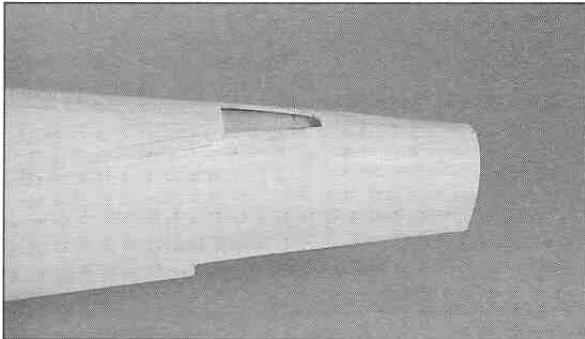
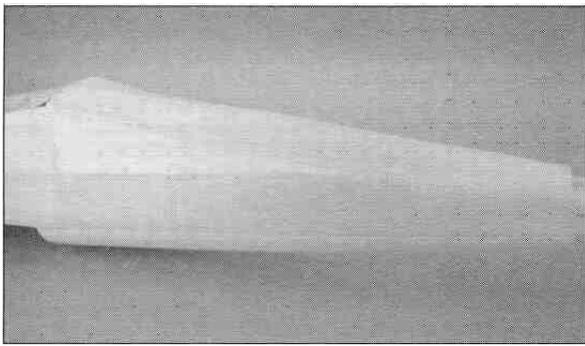
Our favorite technique is to fit the individual sheets and then glue them together flat on your building board to form a "skin." You can then sand the skin flat and smooth before it is glued into position. This requires a bit of finesse when gluing the skin into place. Use a mix of water and rubbing alcohol to allow the skin to bend and conform to the curves more easily. This technique will give a more consistent shape and smoother finish.



□ 5. Glue the skin to the fuselage side. Wet the balsa sheeting with water and alcohol to allow it to conform to the shape of the sides and bottom. See the note at step 7.

□ 3. If you will be sheeting the fuselage one sheet at a time, sheet the fuselage sides using the 3/32" x 3" x 36" balsa sheets. Then skip to step 6.

□ 6. Using some leftover 1/8" sheeting, glue the small piece of side sheeting into place at bulkhead D.



❑ 7. Sand the side sheeting flat across the 3/8" x 3/8" filler strips from DB to EB. Sheet the bottom of the fuselage using 3/32" x 3" x 30" balsa sheets.

Note: Notice how the sheeting at the tailwheel has been cut out to fit the tailwheel bracket.

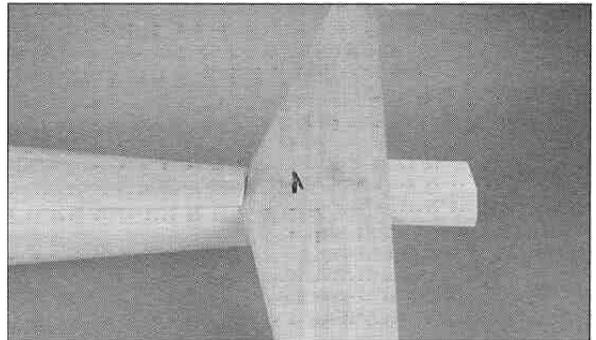
❑ 8. Sheet the top of the fuselage using 3/32" x 3" x 30" balsa sheets. The sheeting extends from the front most former DT to former I.

❑ 9. Mount the tailwheel bracket with the wire tailwheel assembly to the ply tailwheel mount with #4 x 3/8" sheet metal screws.

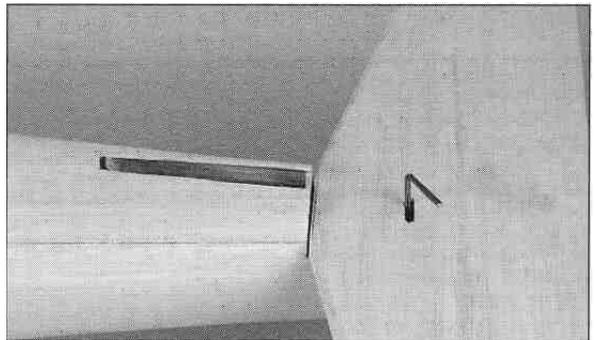
❑ 10. From the top of the fuselage, install and connect the rudder pushrod between the rudder horn and servo. Make sure you install a clevis retainer and have the linkage properly adjusted as there is no access to this area after you finish this section. (Refer to the plans for the proper installation of the rudder linkage.)

Note: Our prototype model used a 4-40 solid wire pushrod (GPMQ3718), a 4-40 metal solder

clevis (GPMQ3814) at the rudder end and a 4-40 metal threaded clevis (GPMQ3794) at the servo end with a 4-40 hex nut.



❑ 11. Fit the horizontal stab to the fuselage. To do this you will need to cut a slot in the stab for the rudder torque rod. Cut this slot spanwise as shown in the photo above. Fit the stab into position centered on the fuselage centerline. Pin it into position temporarily.

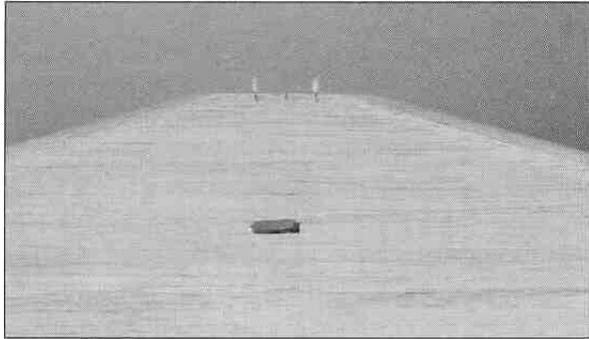


❑ 12. Fit the vertical fin to the fuselage. You will need to cut a slot in the fuselage from former I forward to former H. Notch former H for the fin to fit into it.

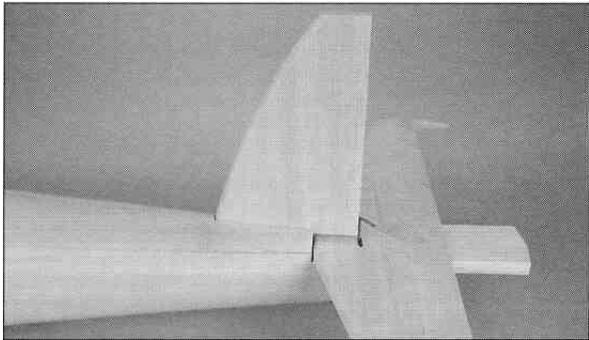
❑ 13. When you are satisfied with the fit of the stab and fin, remove them from the fuselage. Glue some leftover 1/4" x 1/2" balsa to the inside of the top longerons where the stab will be glued to the fuselage to provide some additional gluing area.

❑ 14. Bolt the wing to the fuselage and set the assembled wing and fuse on your table. My, my big isn't it! Maybe you can use the dining

room table for the next steps. Just make sure to cover the table so you don't scratch it or get glue on it, lest - well, you get the idea.



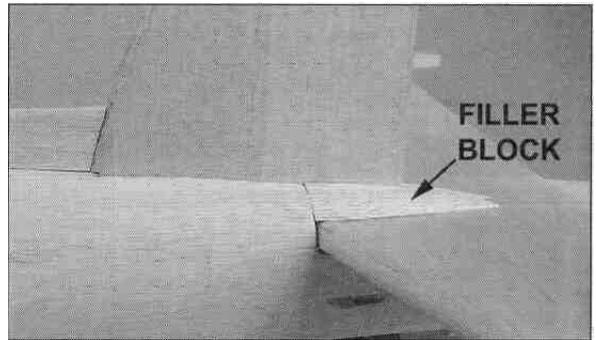
❑ 15. Next, you will mount the stab to the fuselage, but before doing so you need to look more closely at it. As this is a large model, you should not depend on glue alone to hold the stab in place. The plan shows 1/8" dowels that are keyed into former I. You could also use some leftover 1/4" x 3/8" basswood glued to the top of the stab and to former I.



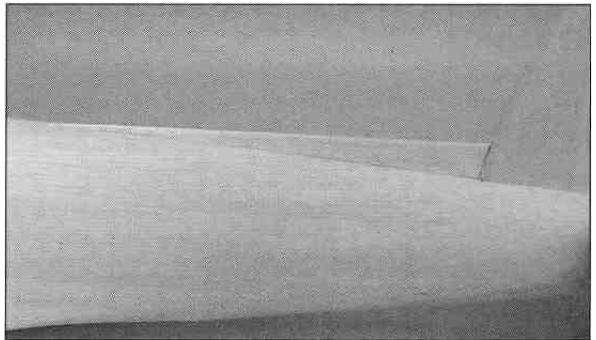
❑ 16. Fit the stab into position and adjust the stab mount as needed to make the stab parallel with the wing. Be careful not to change the incidence angle of the stab. Put a pin in the nose of the fuselage on the centerline. Use your string to align the stab just as you did for the wing. When satisfied with the alignment, glue the stab in position with 30-minute epoxy.

❑ 17. Glue the fin into the fuselage and the top of the stab with 30-minute epoxy. Be sure the fin is vertical to the stab and aligned with the fuselage centerline.

❑ 18. When the epoxy has cured remove the wing. Bring the model back to your workbench with thanks for the use of the table.



❑ 19. Using the 5/8" x 15/16" x 12" balsa block, carve and fit a filler block to each side of the fin. This filler block extends from former I aft and blends with the bottom of the rudder. Glue it into position, and then, fill in and blend any areas that need it with leftover wood and hobby filler.



❑ 20. Use the 3/16" x 1-1/2" x 18" balsa sheeting to make a dorsal fin as shown on the plan. Glue it into position and use filler as needed to blend it with the fin.

❑ 21. Using the 1-5/8" x 2" x 4-3/4" balsa block, roughly carve and sand the tailcone to shape. Then, glue it into position.

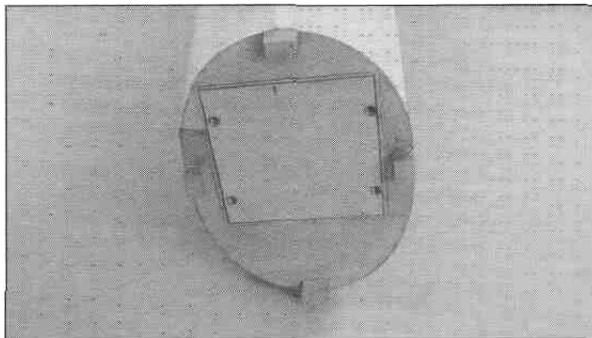
Now for the final details.

FINAL ASSEMBLY

❑ 1. Finish the cockpits. The cockpit area was designed to be structure free so you can add as much detail as desired. The simplest is to glue a couple of Williams Brothers pilots to the top deck. The kit includes two instrument panel decals which can be positioned on the front instrument panel and rear former CT, or you can fashion separate instrument panels. Details in the cockpit area will really dress up the appearance of your model.

❑ 2. Install your engine and mount on the firewall. You should shim your mount as needed to obtain three degrees of down thrust and two degrees of right thrust.

❑ 3. Fit the cowl. The plastic cowl comes in halves and needs to be glued together. Before gluing them, trim them to the proper width. The kit includes a strip of plastic that is used to reinforce the joint on the inside. Thin CA works well for this. When you have glued the cowl together, cut a small hole where the prop shaft needs to exit the front. Slip the cowl onto the fuselage and enlarge the hole as needed to clear the engine thrust washer. As you continue to fit the cowl to the fuselage and engine, you may need to remove and reinstall the engine several times. We have found that using a piece of cardboard taped to the side of the fuselage is the easiest way to locate the cutout for the engine. Tape the cardboard to the fuselage and cut an opening in it to fit your engine. Remove the engine, install the cowl and transfer the cutout to the cowl. If you go slowly and remove a little material each time from the cowl, you will be rewarded with a good looking cowl.



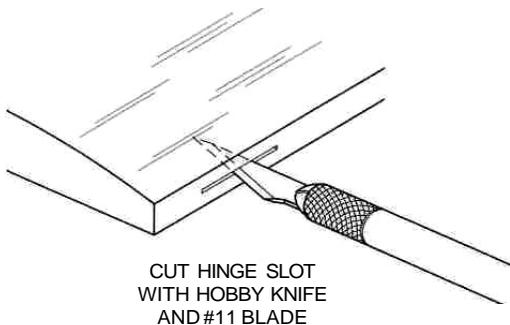
❑ 4. When you are satisfied with the fit of the cowl, remove it and glue the four 1/2" x 1/2" x 3/4" hardwood blocks into place on the firewall. Sand them to blend to the curve of the cowl.

❑ 5. To drill the mounting holes in the cowl use the cardboard technique again. Tape some cardboard to the fuselage side and mark the center of the mounting blocks. Slip the cowl into position and mark the location of the holes, Drill the holes and mount the cowl with #6 x 1/2" sheet metal screws and washers.

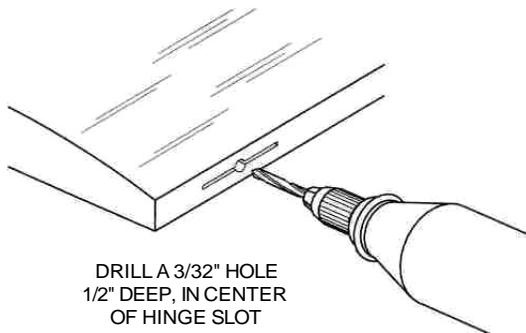
Note: The following describes installing the hinges for the elevators, ailerons, rudder and flaps (if installed). It is highly recommended that you obtain a Great Planes Slot Machine™ (GPMR4010) as it will greatly simplify the process and make for a better installation.

❑ 6. Hinge the control surfaces. The kit includes a hinge strip from which you can cut CA hinges, or you can use other hinges of your choice. The following general guidelines will discuss hinging. We will discuss hinging the elevator but the same process is used to hinge the rudder, ailerons and flaps.

- A. If you have not already done so, mark the centerline of the TE of the stab.
- B. The LE of the elevators has already been sanded to a "V," so this will be used as the centerline.
- C. Using the plan as a reference, mark the locations of the hinges to be installed.



CUT HINGE SLOT
WITH HOBBY KNIFE
AND #11 BLADE



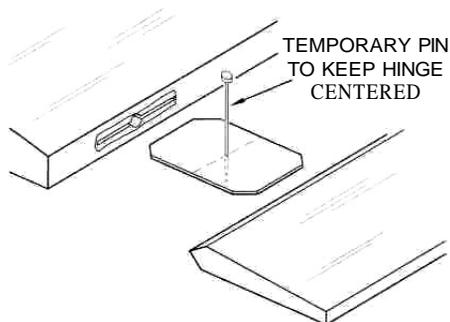
DRILL A 3/32" HOLE
1/2" DEEP, IN CENTER
OF HINGE SLOT

D. Use a hobby knife with a #11 blade to make the hinge slots. The first cut should be a **shallow** slit to establish the hinge slot location. After the first cut make several more cuts, going slightly deeper each time. Move the knife from side to side and widen the slot as you cut.

B. Drill a 3/32" hole in the center of all the hinge slots to allow the CA to fully penetrate. This is best done with a high-speed tool such as a powered hand tool. If you use a drill, remove slivers of balsa wood from the hinge slots with a hobby knife after you drill the holes.

E. Test join the elevators to the stab with the hinges in place. **DO NOT** glue until later.

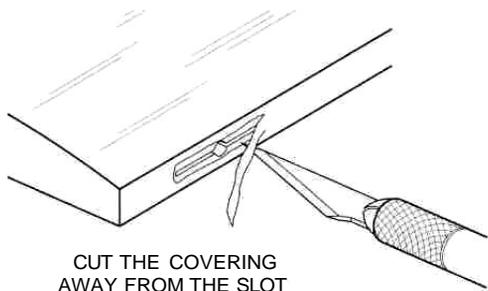
R Perform the same process for the rudder ailerons and flaps.



TEMPORARY PIN
TO KEEP HINGE
CENTERED

AFTER you have completely covered and finished you model, perform the following:

C. Join the elevator to the stab with the hinges. If the hinges will not stay centered, insert a pin through the center of the hinge, then join the surfaces and remove the pins.



CUT THE COVERING
AWAY FROM THE SLOT

D. Confirm that the ends of the elevator align with the ends of the stab, that the hinges are centered and there is approximately a 1/32" gap between the TE of the stab and the LE of the elevator. A small gap is desirable so you do not inadvertently glue the elevator to the stab with residual CA.

A. Use your hobby knife and a sharp #11 blade to remove a small strip of covering from the hinge slots to expose them.

E. Carefully apply 6 drops of thin CA to each side of all the hinges. Keep a tissue handy

to wipe away excess CA. If you spill a few drops of CA on the MonoKote® film you can use CA Debonder (GPMR6039) to remove it. Or wait until the CA fully cures, then carefully lift it off with a hobby knife blade.

Do not use accelerator on any of the hinges. Do not glue the hinges with anything other than thin CA and do not attempt to glue one half of the hinge at a time with medium or thick CA. They will not be secure and the control surfaces could separate while the model is flying.

F. Let the CA fully cure, then flex the elevator several times to check the movement.

G. Use the same procedure to hinge the rudder, ailerons and flaps.

FINISHING

1. You may cover and finish your model now if you desire. We prefer to install the radio before finishing so we don't add any hanger rash to our finished model. You may also want to remove the engine.

Our radio installation consisted of the following:

A. One high torque servo for each aileron.

B. One standard size servo for each flap.

C. One high torque servo for each elevator, with a separate pushrod for each.

D. One high torque servo for the rudder.

E. One standard size servo for the throttle.

F. We used a 1200 mAh battery pack to allow for the additional servo drain.

While this is a large aircraft, it does not fly very fast. We have found that the above installation has worked very well.

2. If you have not done so already, fuelproof the engine and tank areas. Final sand the model.

3. Cover the model. We used Top Flite Super MonoKote on the prototype model. For the primary white color (TOPQ0204) we used two six foot rolls for the wing and one six foot roll for the fuselage. We used one can of Top Flite LustreKote® Missile Red (TOPR7201) paint sprayed directly on the white MonoKote. For the black anti-glare area in front of the canopy we used some flat black (TOPQ0508) we had leftover from an earlier project.

4. After you have finished covering, finish the hinge installation as covered previously.

5. Finish the cockpit area and install your pilots.

6. Fit the canopy to the fuselage. The canopy is supplied in two parts; a short front windscreen area and a larger aft section. On the full-size aircraft this large aft section would slide aft for the pilots to enter. To install your canopy, cut and fit the sections to the fuselage. Trim and fit the area where the front and aft sections fit together. Carefully cut the covering where they will be glued to the fuselage so that the canopy can be adhered to the wood. Use tape or paint to detail the frame lines. We used RC-56 glue to glue the completed canopy to the fuselage.

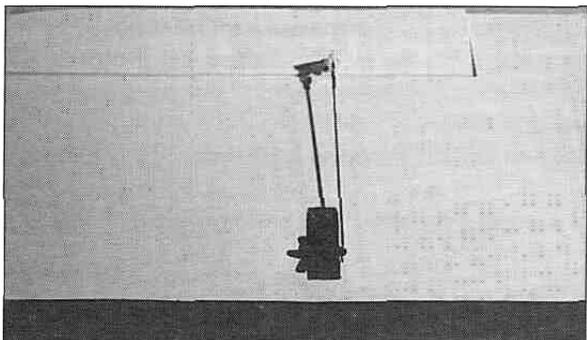
7. Install your fuel system. We used a 16 oz. tank (GPMQ4107) and a refueling valve (GPMQ4160). If you are installing a gasoline engine be sure to use a gasoline compatible tank, refueling valve and fuel line. We mounted our tank to the bottom deck on a layer of 1/4" foam (HCAAIOOO). The tank is held in position with some leftover 1/4" x 3/8" basswood sticks.

8. Paint the cowl. We used Top Flite LustreKote white (TOPR7204), missile red (TOPR7201) and flat black (TOPR7209).

9. Mount the landing gear and 4" wheels (ROBQ1537).

Note: Optional landing gear struts are available from Robart that fit this model. These struts not only add a nice touch to the model but help absorb landing stresses as well. Complete instructions from Robart are included.

10. Mount the control horns to the ailerons, flaps, elevators and rudder.



11. Finish the installation of the control linkages.

12. Install the throttle servo and connect the linkage to the engine.

13. Final hookups and checks:

A. Take the servo arms off your servos, turn on your radio and center all of the trims. Reinstall all the servo arms and secure them with screws.

B. Make sure that all clevises have a silicone retainer installed.

C. Make sure that the control surfaces move in the proper direction.

14. 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.

SET THE CONTROL THROWS

Measure the throws at the widest part of the trailing edge of the rudder, elevator, flaps and ailerons. After a few flights you may change the throws to suit your flying style.

We recommend the following control surface throws:

	High Rate	Low Rate
Elevator	1/2" Up 1/2" Down	3/8" Up 3/8" Down
Rudder	2-1/8" Left 2-1/8" Right	1-3/4" Left 1-3/4" Right
Ailerons	11/16" Up 9/16" Down	1/2" Up 7/16" Down
Flaps	1-1/8" Down	

Note: We used a Great Planes Accu-Throw™ Deflection Gauge (GPMR2405) to check the control throws.

Throttle: Set the throttle so that at "high stick" the carburetor barrel is fully open and at "low stick," with full to half throttle trim, the carburetor barrel is nearly closed. At this position the engine should run reliably at a low RPM (idle). To shut the engine off, decrease the throttle trim tab.

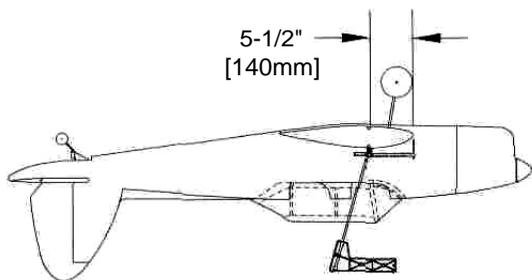
BALANCE YOUR MODEL

This section is **IMPORTANT** and **MUST NOT** be omitted. A model that is not properly balanced will be unstable and possibly unflyable.

1. Check the balance point with all components installed in the model and the fuel tank empty. Attach the wing to the fuselage, then accurately mark the balance point on top of both wing

halves next to the fuselage. The balance point is shown on the plan and is 5-1/2" (140mm) aft of the leading edge.

❑ 2. This is the balance point at which your model should be balanced for your first flights. Later, you may experiment by shifting the balance point up to 1/2" (12mm) forward or back to change the flying characteristics.



❑ 3. Lift the upside-down model with your fingers at the balance point or use the Great Planes C.G. Machine™ (GPMR2400). If the tail drops, shift the receiver and/or battery pack forward (if possible) to balance the model. If the nose drops, shift the receiver and/or battery pack aft. If possible, arrange the battery pack and receiver to achieve balance but make sure they remain secure in the fuselage so they cannot shift during flight or a rough landing. If you must add additional weight to the nose or tail of the Chipmunk to achieve balance, use Great Planes Self Adhesive Lead Weights (GPMQ4485). An alternative to self adhesive weights (if your model is tail heavy) is a Great Planes Brass Spinner Weight (GPMQ4646).

BALANCE THE MODEL LATERALLY

Do not confuse this procedure with "checking the C.G"

Now that the model is covered and nearly completed, this is the time to balance it laterally (side-to-side). Here's how:

❑ 1. With the wing level and attached to the model (and the engine and muffler installed), lift the model by the propeller shaft and the fin. this may require an assistant. Do this several times.

❑ 2. The wing that consistently drops indicates the heavy side. Balance the model by adding weight to the other wing tip.

An airplane that is laterally balanced will track better during aerobatic maneuvers.

PREFLIGHT

ATHOME

Balance your Propellers

Balancing the propeller seems like one of those things that you can skip, but many problems are the result of vibration caused by an unbalanced propeller. Nuts and bolts can vibrate loose and vibration can damage delicate radio components inside your receiver and servos. Vibration can even damage the glow plug element which could result in an engine that is difficult or impossible to start. We use a Top Flite Precision Magnetic Balancer™ (TOPQ5700) in the workshop and keep a Great Planes Fingertip Prop Balancer (GPMQ5000) in our flight box.

Charge Your Batteries

Follow the battery charging instructions in the instruction manual that came with your radio control system. You should always charge your batteries the night before you fly.

Ground Check Your Radio

Inspect all nuts, screws and wheel collars. Make sure you install the screw that holds the servo

arm onto the servos and the servo cords are securely connected to the receiver. If you are not thoroughly familiar with R/C models, ask an experienced modeler to inspect your radio installation and make sure the control surfaces respond correctly.

The engine must be "broken-in" according to the engine manufacturer's recommendations for break-in. Refer to the Engine Safety Precautions on the next page before you start your engine. After you run the engine on the model make sure all screws remain tight, the hinges are secure and the prop is on tight.

AT THE FLYING SITE

Range Check Your Radio

Check the operational range of the radio before the first flight of each day. Before you turn your radio on, the first thing you always must do is make sure no one else is on your frequency (channel). Most model flying fields utilize frequency control so familiarize yourself with their system. Collapse your transmitter antenna and turn on the transmitter first, then the receiver (preferably the receiver should never be on by itself). You should be able to walk at least 100 feet away from the model and still have control. Have an assistant stand by your model and tell you what the control surfaces are doing while you operate them from the transmitter.

Repeat this test with an assistant holding the model and the engine running at various speeds. If the control surfaces do not always respond correctly, do not fly! Find and correct the problem first. Look for loose servo connections or corrosion, loose fasteners that may cause vibration, a defective on/off switch, low battery voltage or a defective cell, a damaged receiver antenna or a receiver crystal that may have been damaged from a previous crash.

ENGINE SAFETY PRECAUTIONS

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

Store model fuel in a safe place away from high heat, sparks or flames. Do not smoke near the engine or fuel as it is very flammable. Engine exhaust gives off a great deal of deadly carbon monoxide so do not run the engine in a closed room or garage.

Get help from an experienced modeler when you learn to operate engines.

Use safety glasses when **you** operate model engines.

Do not run the engine near loose gravel or sand; the propeller may throw loose material in your face or eyes.

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

Always be aware and very conscious of hand movements and be deliberate in your reach for the needle valve, glow plug clip, or other items near a spinning propeller.

Keep loose clothing, shirt sleeves, ties, scarfs, long hair or loose objects away from the prop. Be conscious of pencils, screwdrivers or other objects that may fall out of your shirt or jacket **pockets**.

Use a "chicken stick" or electric starter and follow the instructions to start your engine.

Make certain the glow plug clip or connector is secure so that it will not pop off or get into the running propeller.

Ask an assistant to hold the model from the rear while you start the engine and operate the controls.

Make all engine adjustments from behind the rotating propeller.

The engine gets hot! Do not touch the engine during or immediately after you operate it. Make sure fuel lines are in good condition so fuel will not leak onto a hot engine and cause a fire.

To stop the engine, close the carburetor barrel (rotor) or pinch the fuel line to discontinue the fuel flow. Do not use your hands, fingers **or any** body part to stop the engine. Never throw anything into the prop of a running engine.

AMA SAFETY CODE (excerpt)

Read and abide by 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 to and avoid flying in the proximity of full-scale aircraft. Where necessary an observer shall be used 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 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.

FLYING

FIND A SAFE PLACE TO FLY

The best place to fly your R/C model is an AMA (Academy of Model Aeronautics) chartered club field. Ask your hobby shop dealer if there is such a club in your area and join. Club fields are set up for R/C flying which makes your outing safer and more enjoyable. The AMA can also tell you the name of a club in your area. We recommend that you join the AMA and a local club so you can have a safe place to fly and also have insurance to cover you in case of a flying accident. (The AMA address is listed on page 3 of this instruction book.)

If a club and its flying site are not available, you need to find a large, grassy area at least 6 miles away from any other R/C radio operation and away from houses, buildings and streets. A schoolyard may look inviting but it is usually

too close to people, power lines and possible radio interference. If you are a beginner, you are busy enough concentrating on your model without having to answer lots of questions and performing crowd control.

We highly recommend that you get an experienced modeler to assist you with your flight training. An experienced modeler can take your Chipmunk up for the first time and make sure it performs correctly, then give you valuable flight instruction. He can hand you the transmitter when the Chipmunk has climbed to a safe altitude or connect your transmitter to his if both of your systems have trainer cord or "buddy box" capability. Assistance from an experienced modeler will make your modeling "career" progress faster (and cheaper). We do, however, realize that some modelers are determined to learn on their own or are not in a location where an instructor or flying club is available. Therefore, we have provided the following information to give you an idea of what to expect on your first flight with your Chipmunk. Both flyers who plan to set out on their own **and** fliers who will have the help of an instructor should carefully read the following information.

TAKEOFF

First flight attempts should be reserved for calm days when the wind speed is less than five mph. Always takeoff (and land) into the wind. Check the operation of all controls just before takeoff. This will eliminate the possibility of overlooking reversed or disconnected controls (it happens). Your Chipmunk is a model of the full-size aircraft, used mainly as a training aircraft. The full-scale aircraft is a low powered, gentle and forgiving aircraft. Your model flies much like the aircraft it is modeled after. It performs in a very scale-like manner with the recommended engines. Do not expect it to fly like sport models you may have previously flown. As you apply power on takeoff you will need to apply a slight amount of right rudder to

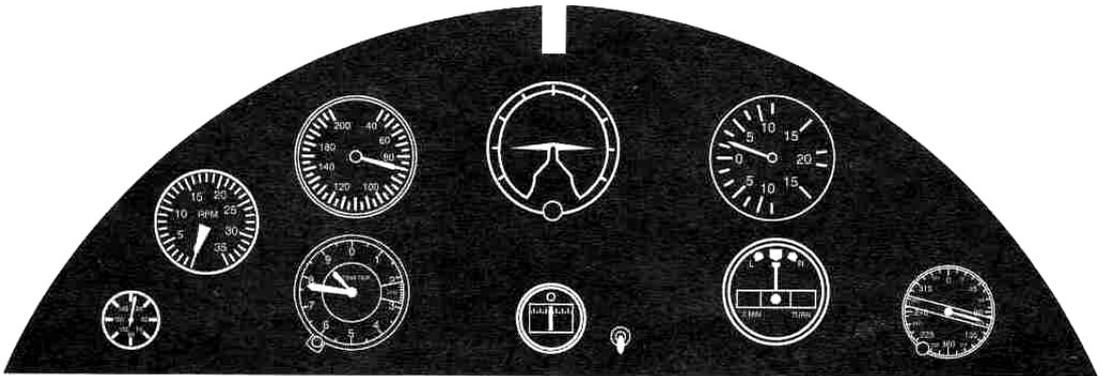
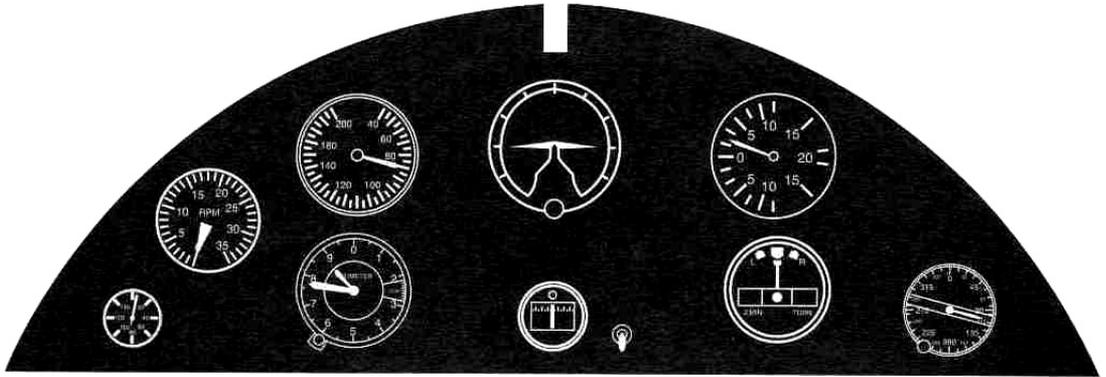
compensate for engine torque and propeller "P" effect. The tail will rise almost immediately, indicating that the tail surfaces have gained effectiveness. Allow the model to continue to accelerate until it has reached flying speed. Use as much of the available runway as you can. Then, gently apply some up elevator. Your Chipmunk should slowly lift from the runway. Continue straight ahead until you have accelerated to a safe flying speed. Make your first turn away from the spectator and pit area.

FLIGHT

The full-size Chipmunk was designed to teach takeoffs, landings, turns, stalls, spins and gentle aerobatics. Being relatively low powered, **it** does not have a high rate of climb and has poor vertical performance. To gain airspeed for a loop it was necessary to dive for a brief period. Barrel rolls were slow, teaching roll coordination. If you fly your model in the same manner you will be very pleased with its performance.

Before attempting your first landing you should first try some slow flight and stalls to become familiar with the Chipmunk's slow speed characteristics. You will probably find the model slows down quicker and requires more power than you are used to. Expect to carry some power on final approach, especially if you are using flaps. The model will quickly lose speed with a nose high attitude on final approach. Remember that aircraft of the Chipmunk's era had limited low speed control effectiveness, especially for the ailerons. The rudder is very effective, however. Continue to carry power and speed until you initiate the flare, then reduce power and allow the model to gently settle to the ground. If you must go around, add power and accelerate straight ahead. Do not attempt to climb, turn or raise the flaps until you have accelerated to a safe flying speed.

We hope you enjoy the realistic looks and performance of your Chipmunk.



TWO VIEW DRAWING
Use copies of this page to plan your trim scheme

