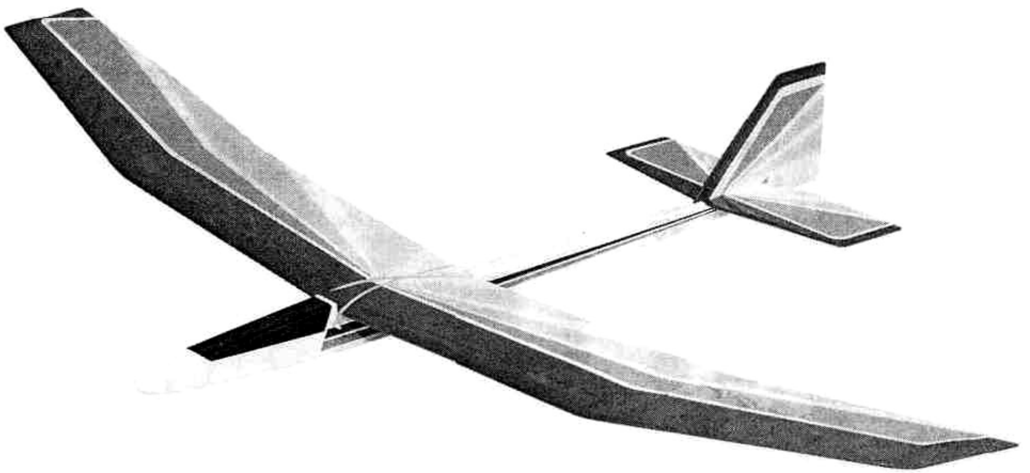
Dynaflite DAYDREAM

- *Simple Entry Level Construction*
- *Stable Flight Characteristics*
- *Excellent R/C Trainer*

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.

DDRMP03 Printed in USA

Congratulations on your choice of this kit for your project. If you are new to Radio Control Modeling, we would like to take a minute to give you some information on the Daydream.

The Daydream was designed to use a modern airfoil specifically designed for thermal gliders. The construction of the Daydream uses the minimum amount of materials to keep the overall weight down. The combination of these provides you with a model that will be able to catch and ride out the slightest thermal.

At Dynaflite we take pride in offering kits that are simple and straightforward to build and provide value for your modeling dollar.

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

To make your R/C modeling experience totally enjoyable, we recommend that you get assistance with your first flights from an experienced, knowledgeable modeler. You'll learn faster and avoid risk to 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 national Academy of Model Aeronautics (AMA), which has more than 2,500 chartered clubs across the country. We recommend you join the AMA, which will provide you with insurance coverage 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

PRECAUTIONS

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

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

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

4. You must test the operation of the model before the first and each successive flight to insure that all equipment operates correctly. You must also make certain that the model has remained structurally sound, especially after a rough landing.

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 inventory and inspect all parts carefully before starting 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 and we'll be glad to help. If you are calling for replacement parts, please look up the part numbers and have them ready when calling.

You may also e-mail us at:

productsupport@dynaflite. corn

PREPARATIONS

REQUIRED ITEMS

These are the items not included with your kit-you will need to purchase them separately. Items in parentheses such as (GPMQ4243) 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, **HCA** is the Hobbico® brand and **DYN** is the Dynaflite brand.

- ❑ *2* - 4 Channel Radio with two standard servos
- ❑ Top Flite MonoKote® (approximately 2 rolls)
- ❑ 1/4" Latex Foam Rubber Padding (HCAQ1050)
- ❑ Switch and Charge Jack (GPMM1000)
- ❑ 2 Meter Up-Start (DYNP8305) or Standard Hi-Start(DYNP8301)

SUGGESTED BUILDING SUPPLIES

*We recommend **Great Planes Pro** CA and Epoxy glue.*

- ❑ 2 oz. Pro CA (thin, GPMR6003)
- ❑ 2 oz. Pro CA+ (medium, GPMR6009)

- ❑ 6-Minute Pro Epoxy (GPMR6045)
- ❑ 30-Minute Pro Epoxy (GPMR6047)
- ❑ 4 oz. Pro Wood Glue (GPMR6161)
- ❑ Hand or Electric Drill
- ❑ Sealing Iron (TOPR2100)
- ❑ Hobby Saw
- ❑ Hobby Knife (HCAR0105)
- ❑ #11 Blades
- ❑ Pliers (common and needle nose)
- ❑ Screwdrivers (phillips)
- ❑ T-pins(HCAQ5150)
- ❑ 60" RetractableTape Measure (HCAR0478)
- ❑ Straightedge with scale
- ❑ MaskingTape (TOPR8018)
- ❑ Sandpaper (coarse, medium, fine grit)
- ❑ Easy-Touch"' Bar Sander (or similar)
- ❑ Plan Protector (GPMR6167)
- ❑ Lightweight Balsa Filler **such as** Hobbico HobbyLite"' (HCAR3400)
- ❑ Isopropyl Rubbing Alcohol (70%)
- ❑ Ballpoint Pen
- ❑ 90° Building Square
- ❑ Heavy Sewing Thread (any color)
- ❑ #64 Rubber Bands
- ❑ Drill bits: 1/16", 5/64", 3/32", 3/16", 1/4"

OPTIONAL BUILDING SUPPLIES

- ❑ CAApplicatorTips (HCAR3780)
- ❑ Epoxy Brushes (GPMR8060)
- ❑ Epoxy Mixing Sticks (GPMR8055)
- ❑ CA Debonder (GPMR6039)
- ❑ Hot Sock" (TOPR2175)
- ❑ Single-Edge Razor Blades (HCAR0312)
- ❑ Heat Gun (TOPR2000)
- ❑ Razor Plane (Master Airscrew®)

Great Planes **Easy-Touch Bar Sanders** are made from lightweight extruded aluminum and can be found at **most** hobby shops. They are available in five sizes - 5-1/2" (GPMR6169) for those tight, hard to reach spots; 11" (GPMR6170) for most general purpose sanding; and 22" (GPMR6172), 33" (GPMR6174) and 44" (GPMR6176) for long surfaces such as wing leading edges. **Easy-Touch Adhesive-Backed Sandpaper** comes in 2" x 12' rolls of 80-grit (GPMR6180), 150-grit (GPMR6183) and 220-grit (GPMR6185) and an assortment of 5-1/2" long strips (GPMR6189) for the short bar sander.The adhesive-backed sandpaper is easy to apply and remove from your sanding bar when it's time for replacement.

This setup is all that is required for almost any sanding task. Custom sanding blocks can be made from balsa or hardwood blocks and dowels for sanding difficult to reach spots.

BUILDING NOTES

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

- Whenever the instructions tell you to **glue** pieces together, thin CA should be used. When a **specific** type of glue is required, the instructions will state the type of glue that is **highly recommended. When** 30-minute epoxy is specified, it is highly recommended that you use only 30-minute (or slower) epoxy because you will need either the working time and/or the additional strength.

- **Do not throw away any leftover material** until after you have completed your model. Some small pieces of leftover balsa or plywood are used during construction.

ADHESIVES

This kit is built with three types of glue.

Cyanoacrylate - CA glues cure almost instantly and are moderately strong. There are three common types used: thin, medium and thick. Thin CA cures the fastest but will not span gaps between parts. Medium and thick CA are used where parts do not fit perfectly. CA glue does not bond well to most plywoods and hardwoods. CA glues are also brittle. When using CA glues we recommend keeping a bottle of CA debonder on your building table.

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

Epoxy - 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.

GLOSSARY OF TERMS USED IN THIS MANUAL & PLANS

Airfoil: A curved structure designed to create lift by the reaction to air moving over its surface.

C.G. (Center of Gravity): This is the point at which the model balances forward and aft and side-to-side.

Clevis: A small clip which is threaded onto the wire end of a pushrod and connects the pushrod to the control horn of a control surface. The threads allow fine adjustment of the pushrods' length.

Control Horn: The arm which is attached to a control surface at the hingeline and is connected to a pushrod.

Die-cut Parts: Precut parts stamped out of a sheet of wood. The parts require a minimum of preparation.

Dihedral: The V-shaped bend in the wing. Typically more dihedral causes more aerodynamic stability in an airplane, and causes the rudder to control both the roll and yaw axis.

Doubler: Part of the structure that is laminated to another part to increase its strength.

Elevator: The hinged control surface located at the trailing edge of the horizontal stabilizer, which provides control of the model about the pitch axis and causes the model to climb or dive. The correct direction of control is to pull the transmitter elevator control stick back, towards the bottom of the transmitter, to move the elevator upward, which causes the airplane to climb and vice versa to dive.

Foam Rubber: A soft foam material used to wrap the receiver and receiver battery for protection.

Gusset: A brace used to reinforce the joint between two parts.

High-start: A device used to launch a model glider like a slingshot. This device consists of a stake, an elastic tube, monofilament line (or string), a parachute or streamer and a ring for attaching the high-start to the glider.

Laminate: The process of gluing a multiple number of sheets face-to-face to increase strength.

Horizontal Stabilizer: The non-moving horizontal tail surface at the back of the fuselage which provides aerodynamic pitch stability.

Pitch Axis:The sailplane axis controlled by the elevator. Pitch is illustrated by holding the sailplane at each wingtip. Raising or lowering the nose is the pitch movement. This is how the climb or dive is controlled.

Pushrod: A rigid piece of steel, plastic or wood used to transfer movement from a servo to a control surface.

Receiver (RX):The radio unit in the sailplane which receives the transmitter signal and relays the control to the servos. This is somewhat similarto the radio you may have in yourfamily automobile, except the radio in the glider perceives commands from the transmitter and the radio in your car perceives music from the radio station.

Rudder: Hinged control surface located at the trailing edge of the vertical stabilizer, which provides control of the sailplane about the yaw axis and causes the sailplane to yaw left or right. Left rudder movement causes the sailplane to yaw left and right rudder movement causes it to yaw right.

Sailplane: An airplane which flies without an engine. Sailplanes are designed to ride on warm, rising air currents, called thermals. Sailplanes are launched by several methods: a giant sling shot called a high-start or a winch which pulls the sailplane up like a kite.

Servo: The electronic/mechanical device which moves the control surfaces of the sailplane according to the commands from the receiver. The radio device which does the physical work inside the sailplane.

Servo Arm:The removable arm or wheel which bolts to the output shaft of a servo and connects to the pushrod.

Tow Hook: A device used to connect the tow line to the sailplane during launch.

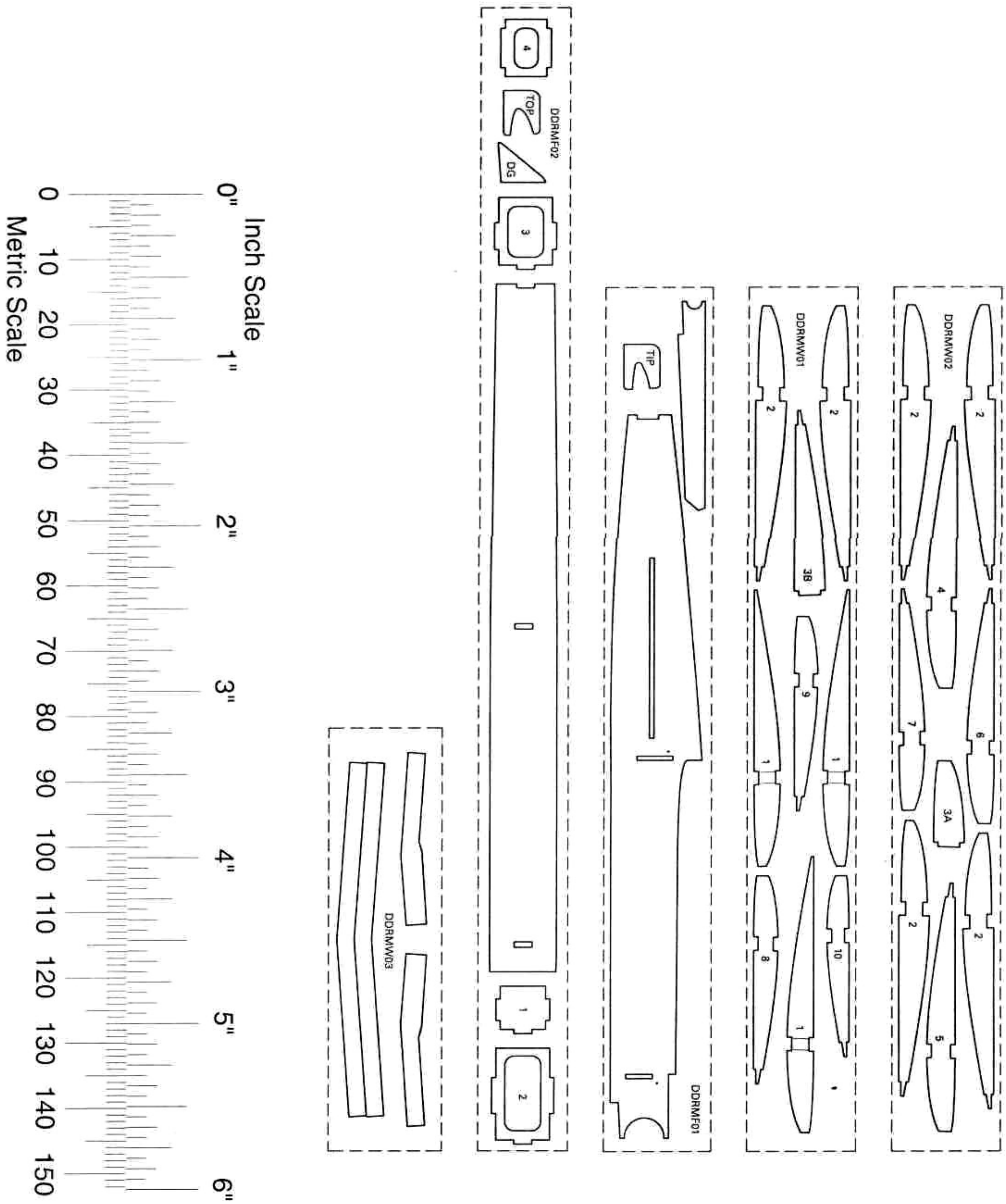
Transmitter: The hand-held radio controller. This is the unit that sends out the commands that you input.

Vertical Stabilizer: The non-moving surface that is perpendicular to the horizontal stabilizer, often referred to as the fin, providing lateral stability. The rudder attaches to this surface.

Wing:The main lifting surface of an airplane.

Yaw Axis: The glider axis controlled by the rudder. Yaw is illustrated by hanging the glider level by a wire located at the center of gravity. Left or right movement of the nose is the yaw movement. Many gliders are not equipped with ailerons and the roll and yaw axis are controlled by the rudder. This is due to the larger amount of dihedral in the wing and is why most sailplanes have a large amount of dihedral.

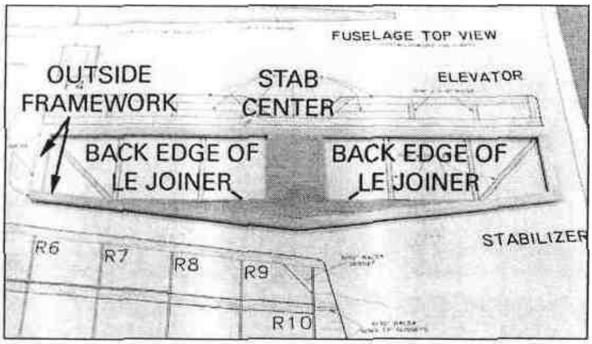
Die-Cut Pattern



BUILD THE STABILIZER & ELEVATOR

BUILD THE FORMERS

❑ 1. Unroll the plan. Re-roll the plan inside out to make it lie flat. Wax paper or **Great Planes Plan Protector"** placed over the plan will prevent glue from sticking to the plan.

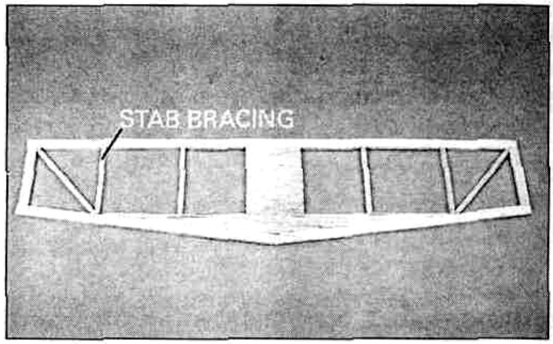


❑ 2. Place the 3/16" x 1" x 14" balsa stick over the portion of the plan marked **leading edge joiner,** and line up the back edge of the stick with the straight line. Draw two angled lines where you will cut this stick. There are two dashed lines on the plan to help in drawing the lines in the correct location. Remove the stick from the plan and cut the stick along the lines using a hobby knife or razor saw. Straighten and square the cut edges with a sanding block. Trim the ends slightly to match the length shown on the plan.

❑ 3. Pin the stab forward center into position on the plan. Test fit the 3/16" x 2" x 3" balsa **stab center** into place. There should be no gaps between the center and forward pieces. After fitting, pin and glue the center to the forward using medium CA.

❑ 4. Use two 3/16" x 3/8" x 36" balsa sticks to build the outside framework of the stabilizer. Start by cutting and placing the longest piece first, working until you are placing the shortest (end) pieces. Glue each piece together using medium CA as you proceed.

BUILDING HINT:



If you are unfamiliar with "Built-up" construction, we have found that the following method is very easy and accurate.

A. Position an **uncut** stick directly over the plan and pin it in place.

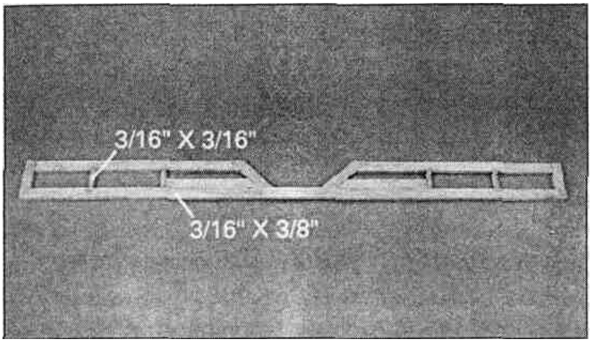
B. Mark each side of the stick where it ends or butts with another part.

C. Remove the stick from the building surface and **flip it over.** Draw a line between the marks you made previously using a straightedge.

D. Using a razor saw, cut as close to the line as possible. Then, with your sanding block, true-up the ends to the line. **Flip** the part over and pin back in place over the plan.

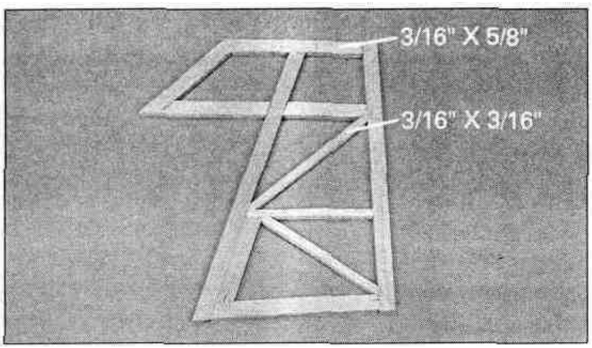
❑ 5. Cut and install the stab bracing using a 3/16" x 3/16" x 36" balsa stick. **Note:** It is best to start with the straight pieces, then go to the angled pieces. The alignment of each piece to the plan is not critical, just as long as it is close and fits snugly into position. Use the remaining wood from the stab forward center for the gussets in the corners.

❑ 6. Remove the stabilizer from your building surface. Examine and add thick CA glue to any open joints, then use your sanding block with medium (150-grit) sandpaper to sand both sides of the stabilizer framework smooth.



❑ 7 Build the elevator from the 3/16" x 3/16" x 36" balsa sticks and the 3/16" x 3/8" x 36" balsa sticks.

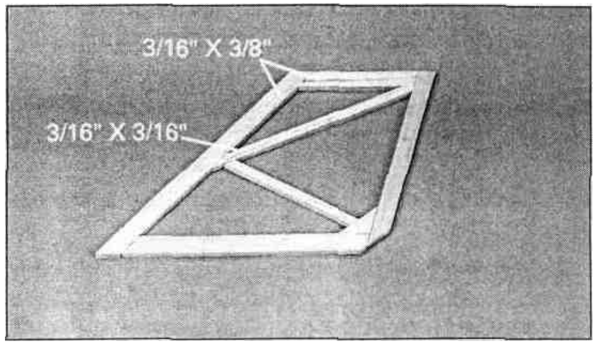
BUILD THE FIN & RUDDER



❑ 1. Position the plan on your work surface so the **rudder** and **fin** can be built directly on the plan. Wax paper or **Great Planes Plan Protector** placed over the plan will prevent glue from sticking to the plan. Build the outside frame of the **rudder** using the 3/16" x 3/8" x 36" balsa stick. Cut and install the corner gusset from the remaining 3/16" x 3/8" balsa.

❑ 2. Build the inner framework of the rudder using 3/16" x 3/8" x 36" and 3/16" x 3/16" x 36" balsa sticks.

❑ 3. Remove the rudder from your building surface. Examine and add thick CA glue to any open joints, then use your sanding block or bar sander with medium (150-grit) sandpaper to sand both sides of the rudder smooth.



❑ 4. Build the **fin** from the remaining 3/16" x 3/8" x 36" and 3/16" x 3/16" x 36" balsa sticks. Examine and add thick CA glue to any open joints, then use your sanding block or bar sander with medium (150-grit) sandpaper to sand both sides of the fin smooth.

❑ 5. Place the fin and rudder flat on your work surface and sand them flat using a sanding block or bar sander and 150-grit sandpaper. Don't forget to sand both sides smooth.

BEVEL THE FIN & RUDDER

❑ 1. Referring to the cross-sections on the plan, carefully block sand the elevator and rudder **leading edges** to the shape shown on the plan.

❑ 2. Using 180-grit sandpaper, round the leading edge and tips of both'the fin and stabilizer. Leave the trailing edges square. Round the trailing edges and tips of the rudder and elevator as shown on the plan using 180-grit-sandpaper.

CUTTING THE HINGE SLOTS

❑ 1. Lay the rudder and elevator on the plan sheet and mark the hinge locations. Place the rudder against the finTE and transfer the marks over to the fin. Place the elevator against the stabTE and transfer the marks on to the stab.

❑ **2. To cut the slots for the hinges, use the** following steps:

❑ A. Begin by carefully cutting a **very shallow siit** at the hinge position on the centerline.This first cut is to establish your cut in the right place, so concentrate on staying on the centerline and **don't cut too deep!**

❑ B. Make three or four more cuts in the same **line,** going slightly deeper each time. As you make these additional cuts, work on going straight into the wood. Continue the process while "wiggling" the knife handle forward and backward until the blade has reached the proper depth for the hinges.

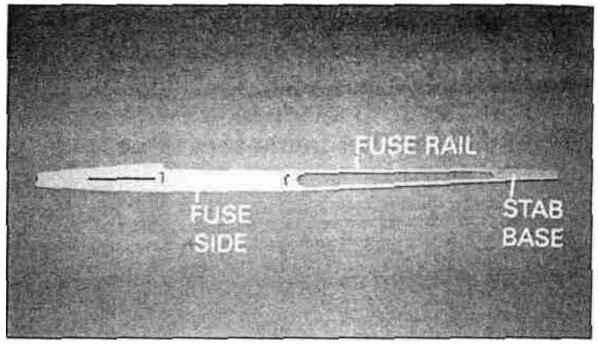
❑ C.Test fit the hinge into the slot. If the hinge is difficult to push in, re-insert the knife and move it back and forth in the slot a few times to enlarge the slot.

❑ 3. Insert the hinges into the slots and test fit the rudder and elevator to the fin and stabilizer. **Do not glue the hinges until after you have covered the model.**

BUILD THE FUSELAGE

FUSE SIDE CONSTRUCTION

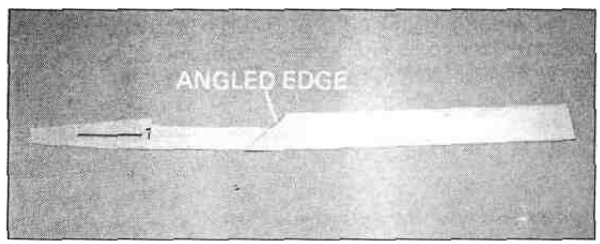
❑ 1. Locate the die-cut 1/8" balsa **stabilizer bases** and **fuse sides.** Drill two 1/4" holes in the fuselage sides at the punch marks. Pin one side and one base over their appropriate locations on the plan.

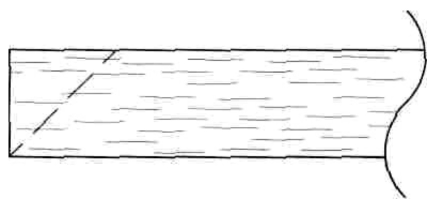


❑ 2. Use two of the 1/8"x 1/4" x 24" balsa sticks to make the **upper and lower fuse rails.** Use medium CA to glue them into position.Trim the excess extending past the **stabilizer base.**

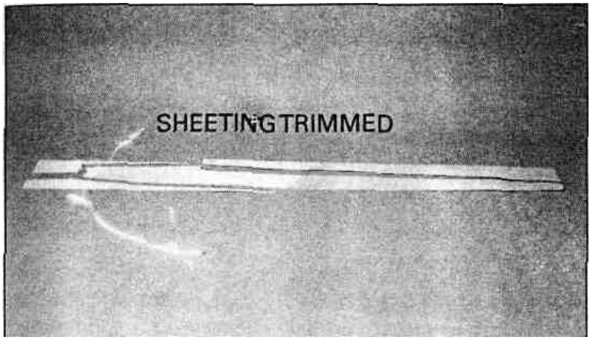
❑ 3. Once the glue sets, remove the **fuse side** from your building surface. Examine and add thick CA glue to any open joints, then use your sanding block or bar sander with medium (150-grit) sandpaper to sand both sides of the fuselage side smooth.

❑ 4. Repeat steps 1 through 3 to build another fuse side.



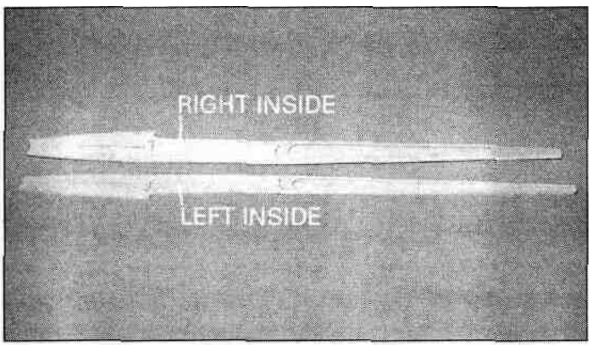


❑❑ 5. Select four of the **hardest** 1/16" x 3" x 24" balsa sheets to be used for the fuse sides. Cut a 45° on one of the 1/16" x 3" x 24" sheets. Use a straightedge to true up the longer edge of the sheet. Align the bottom fuse rail with the trued edge. Apply medium CA to the fuse side where the sheet will contact it. Place the sheet onto the fuse side.



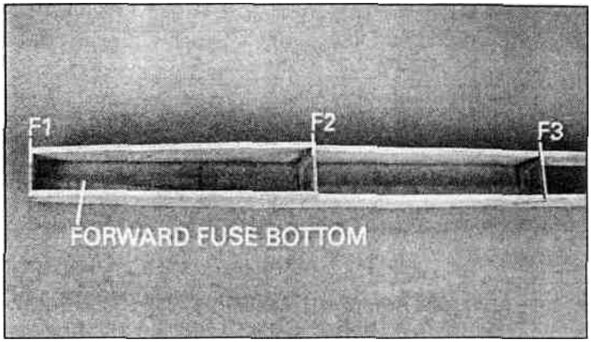
❑❑ 6. From another 1/16" x 3" x 24" balsa sheet, trim an angle on an end close to 45°, but not quite. Test fit the piece against the first, and make sure the sheet fully covers the forward fuse side. Glue the sheet to the fuse side using medium CA.

❑❑ 7. Trim the excess sheeting from around the fuse side. Drill the 1/4" holes made in the fuselage sides through the 1/16" sheeting. Use 150-grit sandpaper to sand the sheeting flush with the edges of the fuse side. Use your sanding block or bar sander with medium (150-grit) sandpaper to sand the sheeting smooth.



❑ 8. Repeat steps 5 through 7 for the remaining fuse side. **Make sure to make both a left and right side.**

FUSE STRUCTURE ASSEMBLY



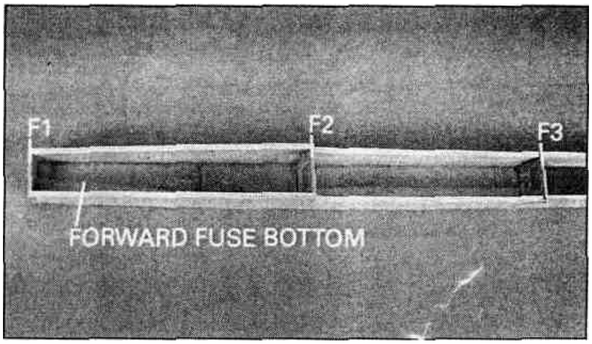
❑ 1. Test fit the die-cut 1/8" ply **former F2** in place on the **right fuse side.** Position the tab on the former so it faces the bottom of the fuselage. Press it down into its slot and use a 90° triangle to keep it perpendicular to the fuse side. Glue it in place with medium CA.

❑ 2. Test fit the die-cut 1/8" ply **former F3** in place on the right fuse side. Press it down into its slot and use a 90° triangle to keep it perpendicular to the fuse side. Glue it in place with medium CA.

❑ 3. Position the **left fuselage side** onto the formers. Use medium CA and glue the fuse side to the formers.

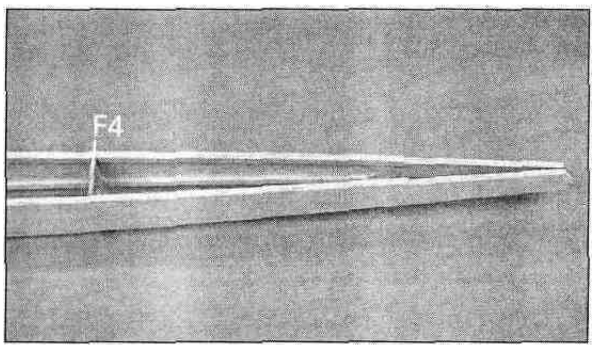
❑ 4. Tape a piece of wax paper or Plan Protector over the fuselage top view on the plan.

❑ 5. Test fit the die-cut 1/8" ply **former F1** in place at the front of the fuse sides. After checking the alignment of the fuselage to the plan, glue former F1 to the fuse sides using medium CA.



❑ 6. Locate the die-cut 1/8" ply **forward fuse bottom.** Place the forward fuse bottom onto the fuselage. Set the fuselage assembly upright (in its normal position) on the waxed paper. With everything in its proper place, apply thin CA glue to all the joints, around the formers and along the bottom. Keep checking the parts fit and alignment as you glue. Wait a minute for the glue to set, then apply thick CA to the joints to make sure a good bond exists, especially in the joints that do not fit perfectly. **Note:The** use of CA accelerator will be helpful when using thick CA to fill any large gaps.

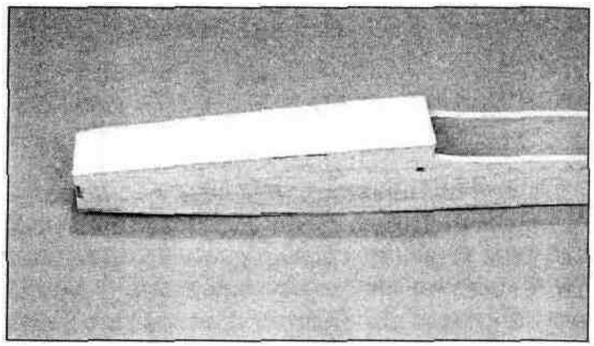
❑ 7. Pull the fuse sides together at the tail end of the fuselage. Use a T-pin to pin the sides together and check the alignment. Once the alignment is correct, use thin CA to glue the very aft edge together.



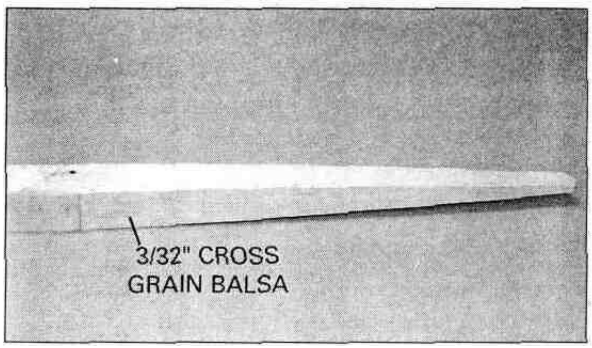
❑ 8. Place the die-cut 1/8" ply **former F4** into position using the plan to determine its position. While holding the sides against F4, use medium CA to secure the former to the sides.

❑ 9. Cut two 7" long pieces from the 3/16" x 3/16" x 24" balsa stick. Glue the pieces to the upper inside edge of the fuselage in front of F2 using medium CA.

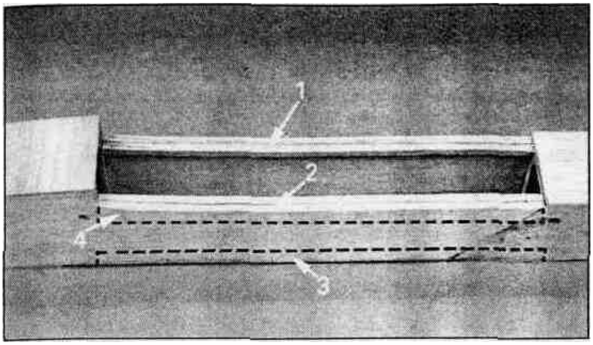
❑ 10. Once the glue sets, use your sanding block or bar sander with medium (150-grit) sandpaper to sand the sticks smooth.



❑ 11. From the 3/32" x 3" x 36" balsa sheet, cut and glue pieces of **cross-grain sheeting** to the top of the fuse from F1 to F2. Save the remaining sheet for the aft top of the fuselage.



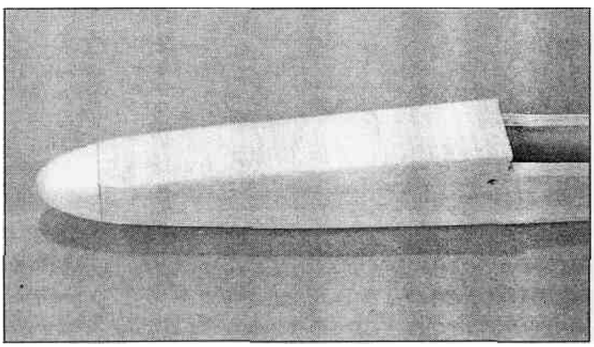
❑ 12. Use a piece of 3/32" x 3" x 24" balsa to sheet the bottom of the fuselage from the aft edge of the ply fuse bottom to the end of the fuse. Use the plan to keep the alignment of the fuselage while sheeting. Once the glue sets, trim the excess sheet from the edges of the fuselage using a hobby knife. Use your sanding block or bar sander with medium (150-grit) sandpaper to sand the sheet smooth with the sides.



❑ 13. Use medium CA to glue two pieces of 3/16" x 3/16" balsa stick into the corners between the fuse bottom and the fuse side between formers F2 and F3. Use medium CA to glue two more pieces of 3/16" x 3/16" balsa stick between formers F2 and F3 along the upper edge of the wing saddle as shown on the plan side view.

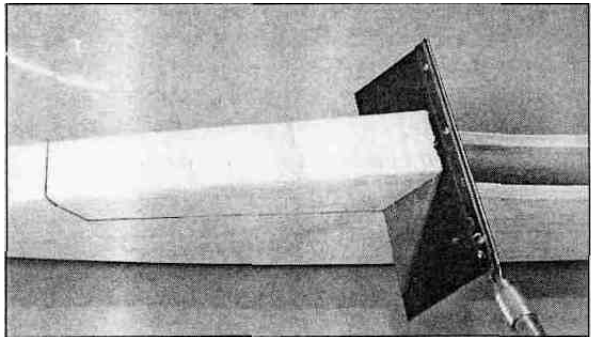
❑ 14. Use medium CA to glue the 1-3/4" x 1-3/4" x 1-1/2" balsa **nose block** onto the front of the fuselage.

❑ 15. From the remaining piece of 3/32" x 3" x 36" balsa, sheet the top of the fuselage from former F3 to the front of the stab saddle. This is one piece of sheeting, with the grain running from the front to the rear of the fuse. Once the glue sets, trim the excess sheet from the edges of the fuselage using a hobby knife. Use your sanding block or bar sander with medium (150-grit) sandpaper to sand the sheet even with the sides.



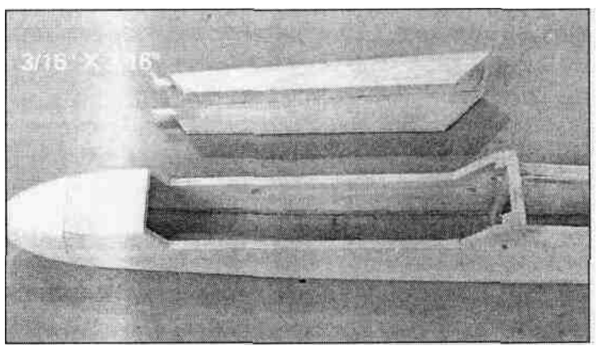
❑ 16. Using a razor plane and your sanding block or bar sander with medium (150-grit) sandpaper, round the corners of the fuselage to the shape shown on the cross-sections of the formers on the plan. Shape the nose block to the shape as shown on the plan.

PREPARING THE CANOPY



❑ 1. Draw the outline of the canopy onto the fuselage using the plan as a guide. Use a hobby knife and/or razor saw to carefully cut the canopy from the fuselage.

❑ 2. Use your sanding block or bar sander with medium (150-grit) sandpaper to sand the edges of the canopy and fuselage smooth. Use caution not to remove an excess amount of material, or the fit between the canopy and fuselage will be loose.

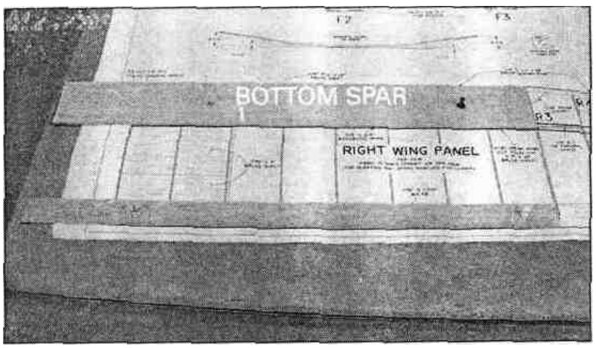


❑ 3. From the remaining 3/16" x 3/16" balsa, cut two 3/4" pieces which will extend 1/4" to 1/2" forward of the canopy to act as locking pins.

BUILD THE WING

Note: The Daydream wing, much like the fuselage, is designed with simplicity and ease of building in mind. Always remember to test fit parts before using glue to make any adjustments for the best possible fit.

❑ ❑ 1. Cut the **"right wing panel"** section from the plan and tape it on your building board. Tape a piece of wax paper or Plan Protector over the plan.

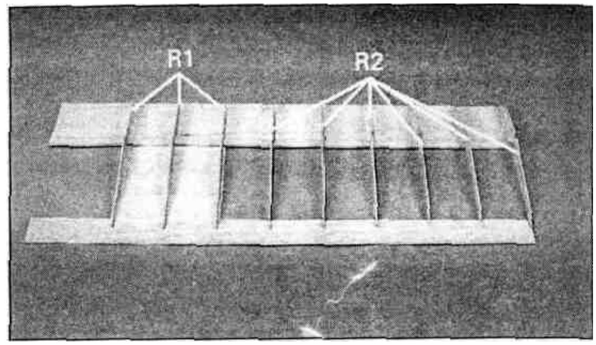


❑ ❑ 2. Locate one of the 1/16" x 3" x 24" balsa **leading edge sheets.** Use a straightedge to true up one edge of the sheet. Align the end of the sheet with the outer R2 wing rib, and the aft edge of the sheet along the aft edge of the spar. Pin the sheet into position.

❑ ❑ 3. Locate one of the 1/8" x 3/8" x 24" basswood **spars.** Using the spar location from the plan, glue the spar to the sheet using medium CA.

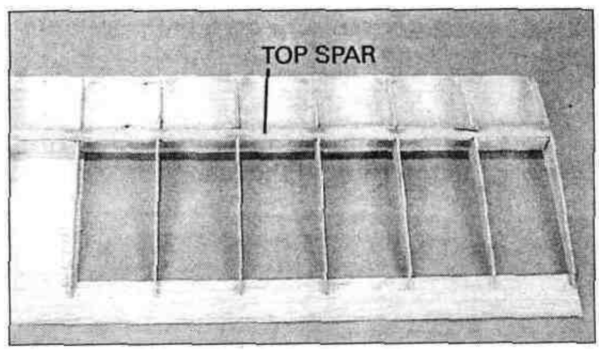
❑ ❑ 4. Pin one of the 1/16" x 1-1/4" x 24" balsa **trailing edge sheets** in its proper location. Mark the positions of the R1 Ribs on both the trailing edge sheet and the spar.

❑ ❑ 5. Add the center sheeting between the trailing edge sheeting and spar using 1/16" x 3" x 24" balsa. The sheeting is located only under the R1 Ribs.



❑ ❑ 6. Remove the die-cut 1/16" balsa **wing ribs R1** and **R2** from the die-cut sheets. Slide the wing ribs into position on the **bottom spar.**

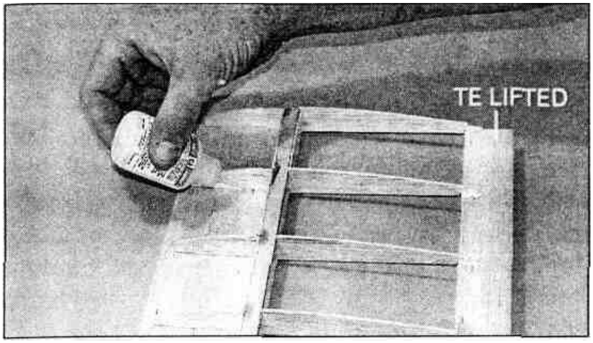
❑ ❑ 7. Use the die-cut 1/8" ply **dihedral gauge** to set the angle of the root rib. Use thin CA to glue the R1 and R2 ribs to the spar and trailing edge sheeting. **Note:** Do not glue the ribs to the leading edge sheeting at this time.



❑ ❑ 8. Locate another of the 1/8" x 3/8" x 24" basswood spars. Glue the spar into the top rib notches using medium CA.

❑ ❑ 9. Trim a piece of 1/16" x 3" x 24" balsa sheet to a width of 2-5/16". Use this sheet to make the **shear webs.** With the panel held flat on the table, use medium CA to glue the balsa **shear webs** to the **spars,** between all the ribs in **front** of the spars. Notice there are **shear webs** on **both** sides of the spars **between** the **R1 ribs** and only **in front** of the spars between the remainder of the ribs.

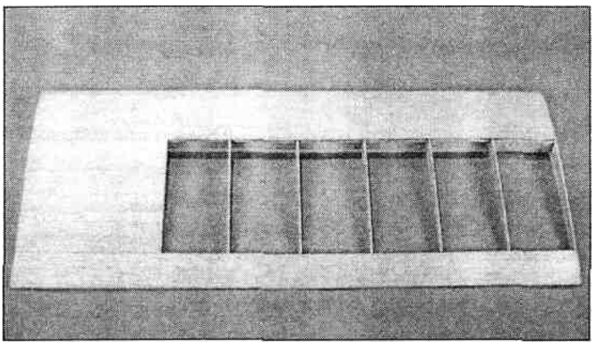
Note: The function of the shear webs is to keep the spars from collapsing.They will not need to touch or be glued to the ribs. They should be thoroughly glued to the spars.



❑❑ 10. Remove the pins holding the wing panel to your building surface. Slowly lift the trailing edge up off the plan, rolling the wing onto the front part of the wing ribs. The rolling process is to push the sheeting against the wing ribs, allowing you to glue the sheeting to the ribs using thin CA.

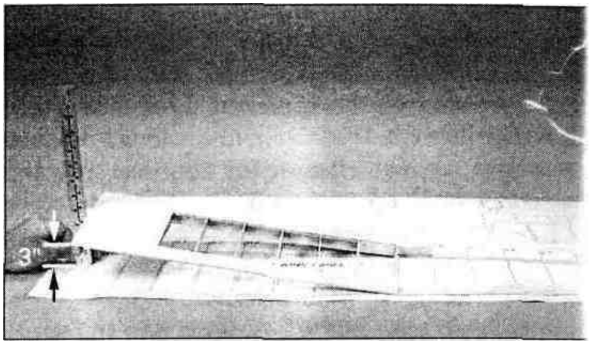
❑❑ 11. Once the glue sets, align the wing panel back onto the plan. Use medium CA to glue a 1/16" x 1-1/4" x 24" balsa top trailing edge sheet into position. Glue a 1/16" x 3" x 24" balsa top leading edge sheet onto the spar and the front area of the wing ribs.

❑❑ 12. Sheet the center-section area between the trailing edge sheeting and spar using 1/16" x 3" x 24" balsa sheeting.

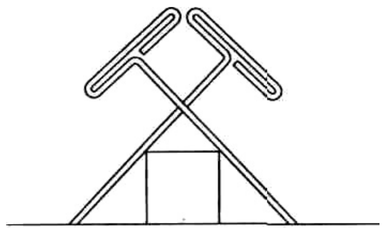


❑❑ 13. Remove the center panel from the plan. Cut the sheeting and the leading edges flush with the outer edges of the R1 and R2 ribs using a hobby knife or razor saw. Use your sanding block or bar sander with medium (150-grit) sandpaper to sand the sheeting and the leading edges smooth.

❑❑ 14. Using a Hobby Knife, remove the section of the tip R2 rib between the spars.



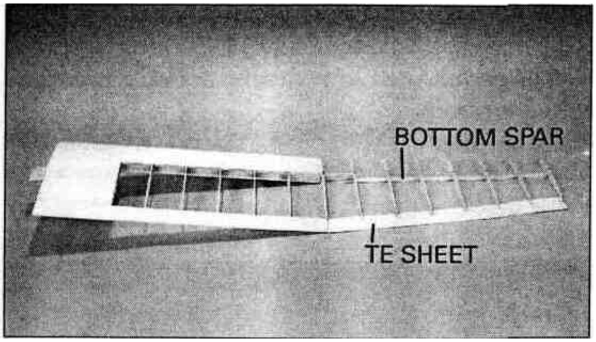
❑❑ 15. Place the center panel onto the plan aligning the R2 rib to the plan. Block the pane up so the center is 3" from the building surface



❑❑ 16. Place a 1/8" x 3/8" x 24" balsa **spar over** its location on the plan and cut it to length. Using the criss-cross pin technique shown in the illustration to pin the spar in 3 or 4 places. The end of the spar must be sanded to fit tightly against the spar on the center panel.

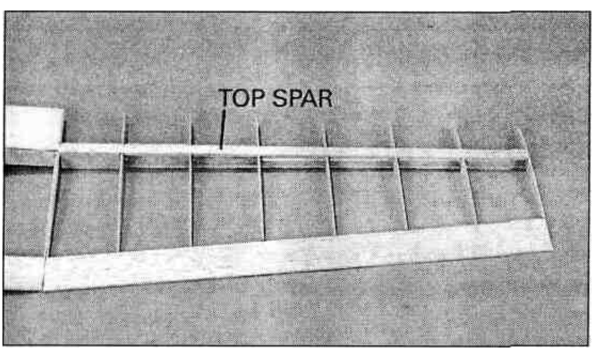
❑❑ 17. Insert the narrow end of the die-cut 1/8 ply **tip dihedral brace** into the opening which you previously cut between the spars in the center wing panel. **Do not** glue the brace a this time.

❑❑ 18. Pin one of the 1/16" x 1-1/4" x 24" balsa **trailing edge sheets** in its proper location.



❑❑19. Remove the die-cut 1/16" balsa **wing ribs R3** through **R10** from the die-cut sheets. Slide the **wing ribs** into position on the **bottom spar** Glue the wing ribs to the spar and TE sheeting using medium CA. Glue the R3A and R3B wing ribs to the R2 rib of the center panel using medium CA.

❑❑20. Use thin CA to glue the tip dihedral brace to the spars in both the center and tip wing panels. Use medium CA to fill any gaps between the spar and dihedral brace.This must be a very strong glue joint.



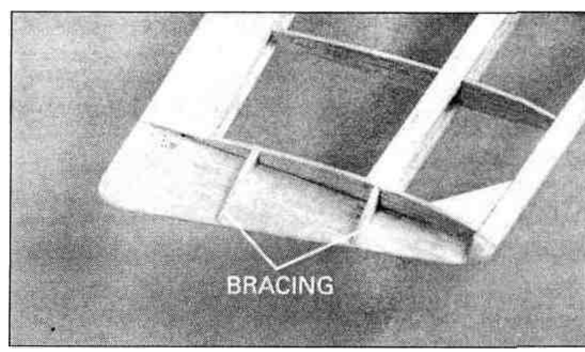
❑❑21. Locate another of the 1/8" x 3/8" x 24" balsa spars. Cut the spar to length. Glue the spar into the top rib notches using medium CA.

❑❑22.Trim a 1/16" x 1-1/4" x 24" balsa trailing edge sheet to length. Use medium CA to glue the sheet into position on the top of the ribs.

❑❑23. Trim a piece of 1/16" x 3" x 24" balsa sheet to a width of 2-5/16". Use this sheet to make the shear webs. With the panel held flat on the table, use medium CA to glue the balsa shear webs to the **front** and **back** of the spars, between the R3 and R4 ribs, and to the **front** of the spars from R4 to R8.

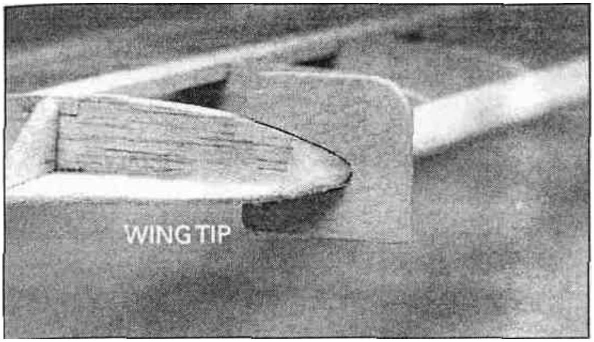
❑❑24. Cut a 1/4" x 1/2" x 24" balsa leading edge to length for the center panel. Align the bottom of the leading edge to the bottom of the wing sheeting. Use medium CA to glue the leading edge to the ribs and sheeting on center panel. Cut another 1/4" x 1/2" x 24" balsa leading edge to length, allowing it to extend 1" past the wing tip rib R10. Sand the end of the LE so it fits against the LE on the center panel without any gaps. Align the LE to the bottom of the ribs on the outer panel and glue it into position using medium CA.

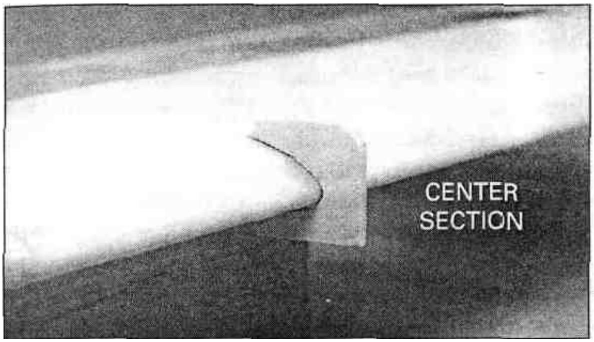
❑❑25. Cut both of the **wing tips** using a 3/32" x 3" x 24" balsa sheet.



❑❑26. Use medium CA to glue the wing tip into position. The wing tip is aligned with the bottom of the wing. Add the bracing using the remaining 3/32" x 3" x 24" balsa sheet.

❑❑27. From the remaining 3/32" x 3" x 24" balsa sheet, make the gussets for the wing tip panels. Using the plan as a guide, glue the gussets into place using medium CA.

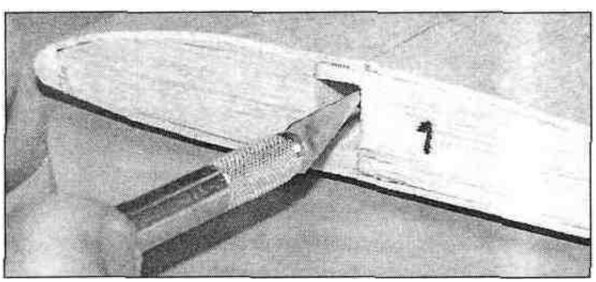




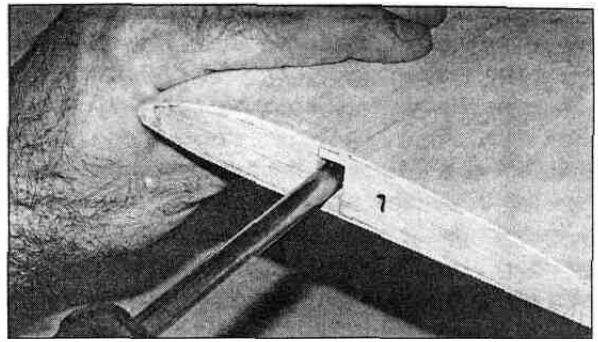
❑❑ 28. Use a razor plane and medium (150-grit) sandpaper to sand the leading edge to shape. Use the die-cut LE gauges to check the shape of the leading edge as you work. Sand the tip section LE to match the die-cut 1/8" balsa **tip LE gauge,** and the center-section LE to match the die-cut 1/8" ply **center LE gauge.**

❑ 29. Repeat steps 1 through 28 to buiid the left wing panel.

JOINING THE WING PANELS



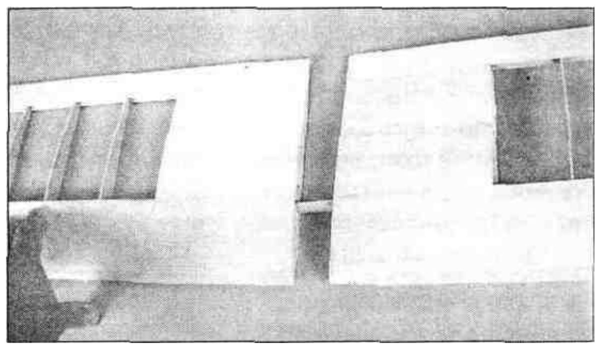
❑ 1. Remove the material from R1 between the spars using a hobby knife.

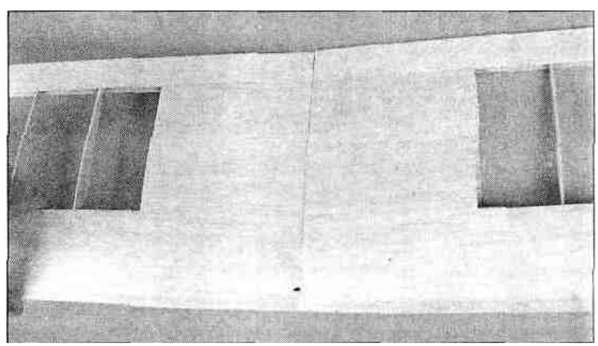


❑ 2. Use a flat blade screwdriver to knock out the center of the second R1 ribs between the spars.

❑ 3. Locate and glue the two die-cut 1/8" ply **center dihedral braces** together using medium CA or 6-minute epoxy.

Note: In preparation for the next step, protect your work surface by covering it with waxed paper or Plan Protector.





❑ 4. Test fit the center dihedral brace into each wing panel. Make any adjustments necessary to allow the wing panels to slide completely together with the brace installed. Once the brace fits, use 30-minute epoxy to liberally cover the brace and the two R1 ribs. Also coat the spars inside the wing by applying epoxy with a stick. There should be enough epoxy that it will "ooze" out of the center of the wing panels. This excess epoxy can be cleaned up using a paper towel and isopropyi alcohol. Use masking tape to hold the two panels together until the epoxy has cured.

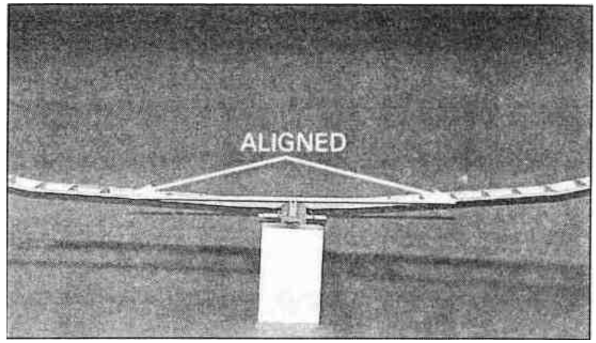
Note: The correct amount of dihedral between the two center panels can be measured by placing one center panel flat on the work surface.The other center panel, when measured where it attaches to the tip panel, will measure about 3" from the work surface.This measurement is not critical, and can vary up to 1/4" either direction without causing any flight performance problems.

❑ 5. Once the epoxy has fully cured, use 150-grit sandpaper to sand the joint between the two panels smooth.

❑ 6. Cut two scraps of 1/8" plywood to be used as a trailing edge support. This will prevent the rubber bands from crushing the trailing edge of the wing. Use the plan as a guide for cutting and positioning the support.

ALIGN THE STAB TO THE WING

❑ 1. With the fuse placed right side up on a flat surface, test fit the wing into the wing saddle. If the wing is slightly too large (front to rear) to fit into the wing saddle, sand the rear edge of the saddle and the wing trailing edge slightly until it fits.



❑ 2. Temporarily install the two 3-1/2" wing hold down dowels in the fuselage. Set the wing on the fuselage and secure it by hooking a couple of rubber bands (not included) over the forward dowel, stretching the rubber bands over the wing and hooking them over the aft dowel. Set the stabilizer in the stabilizer saddle. Check the alignment of the stabilizer with the wing from the front and rear of the model. If the stabilizer tips are not equidistant above the wing, carefully sand the high side of the stabilizer saddle until the stabilizer and wing are aligned. Use a tape measure to set the stabilizer tips equal distances from the nose.

❑ 3. UseT-pins to hold the stabilizer in position on the fuselage while marking the bottom of the stabilizer where it meets the fuselage. **Do not** glue it in position at this time.

INSTALL THE FORWARD WING FILLET

❑ 1. Carve and sand the 1/2" x 2" x 2-1/2" balsa **front wing fairing** to fit the top of the wing. Round the corners of the block to match the fuselage.

Note: It is difficult (and not necessary) to try to carve this block to mate exactly with the wing; therefore, you should just "rough it out," then later you can fill any gaps with balsa filler.

BALANCE THE MODEL LATERALLY

Do not confuse this procedure with "checking the C.G."That will be discussed later in the manual.

Now that **the model is** nearly completed, **you** should balance it laterally (side-to-side). An airplane that is laterally balanced will track better. Here's how:

❑ 1. Temporarily attach the stabilizer, elevators, fin, rudder and wing. Lift the model by the nose and the bottom of the fuse near the rudder. This will 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.

FINISHING

Make sure that all the surfaces to be covered have been sanded to remove any irregularities. The Dynaflite Daydream can be covered with Top Flite MonoKote® or EconoKote" film, using the suggested covering sequence that follows."

Suggested Covering Sequence

Fuselage and Tail:

1. Fuselage bottom
2. Fuselage right side
3. Fuselage left side
4. Fuselage top
5. FinTE, followed by the fin sides
6. StabilizerTE, followed by the bottom and top **(only cover the bottom of the stabilizer up to the marks where the fuselage meets the stabilizer)**
7. Elevator LE and root ends
8. Elevator bottoms, followed by the top
9. Rudder LE, right side followed by the left sid»
10. Hatch

Wing:

Tack the covering to the wing tips and leading and trailing edges. Do not shrink the covering until after the wing is completely covered.

1. Tips of wing
2. Trailing edges of wing
3. Bottom of both wing halves
4. Top of both wing root halves (extend the covering 1/4" past rib W-4 and tack it to the outboard face of the rib)
5. Top of both wing tip halves

After the wing is completely covered, shrink the covering on the bottom of the wing, keeping the wing as straight as possible. Next, place the wing root panel against a flat building surface while shrinking the top covering.

Once the root panels are done, place a tip panel on a flat surface. While holding the wing firmly against the flat surface, shrink the top covering This will prevent any "washout" in the tip panels

After all the covering on the wing has bee shrunk, and you have double-checked the bottom panels, iron the covering to each wing rib.

FINAL ASSEMBLY

❑ 1. Center and glue the two 3-3/4" wing hold down dowels in the fuselage.

❑ 2. Set the wing on the fuselage and secure to the fuselage by hooking a couple of #6 **rubber** bands (not included) over the forward dowel, stretching the rubber bands over the wing and hooking them over the aft dowel Again, set the stabilizer in the stabilizer saddle Check the alignment of the stabilizer with the wing from the front and rear of the model. Use a tape measure to set the stabilizer tips equal distance from the nose.

❑ 3. Use 30-minute epoxy to glue the stabilizer in position on the fuselage, rechecking the alignment before the epoxy cures.

❑ 4. Remove the covering from the bottom of the fin. Test fit the fin onto the stabilizer. The trailing edge of the fin should align with the trailing edge of the stabilizer. When satisfied with the fit, glue the fin to the stabilizer with 6-minute epoxy or aliphatic resin. Make sure the fin is 90° to the stabilizer. Masking tape and T-pins can be used to hold it in place.

❑ 5. Starting with the elevators and stab, cut the covering from the hinge slots.

The most common mistake made by modelers when installing a CA type of hinge is not applying a sufficient amount of glue to fully secure the hinge over its entire surface area; or, the hinge slots are very tight, restricting the flow of CA to the back of the hinges.This results in hinges that are only "tack glued" approximately 1/8" to 1/4" into the hinge slots. The following technique has been developed to help ensure thorough and secure gluing.

❑ 6. It is best to leave a very slight hinge gap, rather than closing it up tight, to help prevent the CA from wicking along the hinge line. Make sure the control surfaces will deflect to the recommended throws without binding. If you have cut your hinge slots too deep, the hinges may slide in too far, leaving only a small portion of the hinge in the control surface.To avoid this, you may insert a small pin through the center of each hinge before installing. This pin will keep the hinge centered while you install the control surfaces.

❑ ·17. Install the hinges in the elevator and attach the elevator to the stabilizer.

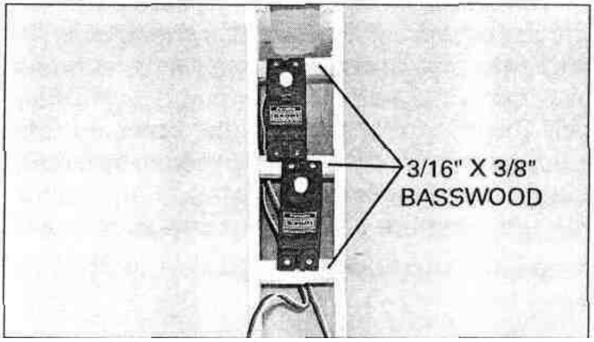
❑ 8. Apply 6 drops of thin CA adhesive to **both** sides of each hinge. Allow a few seconds between drops for the CA to wick into the slot.

❑ 9. Follow the same procedure to install the rudder on the fin.

❑ 10. Reinstall the control horns.

❑ 11. Use aT-pin inserted through the tow hook block from the inside of the fuselage to locate the tow hook pilot holes.Thread a 4-40 nut onto the tow hook. Then, thread the tow hook into the tow hook block from the bottom of the fuselage to the depth shown on the plan.

RADIO INSTALLATION



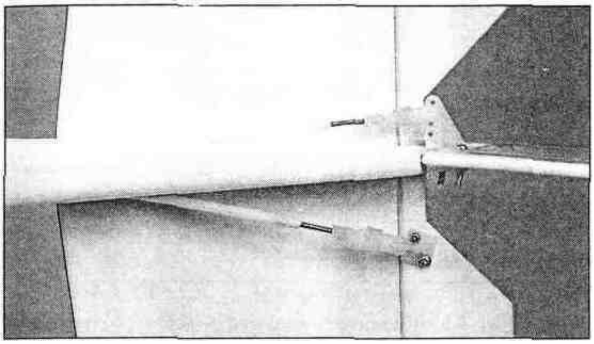
❑ 1. From the remaining 3/16" x 3/8" basswood spar, cut three **servo rails. The** rails should be snug against the fuselage sides, but not so tight that they cause the fuselage sides to bow outward.

❑ ❑ 2. Slide the first servo rail into its slot in the fuselage doubler. Slide it all the way forward and glue it in place with thick CA. Slide the second servo rail into place and then slide it all the way aft. **Do not glue it yet!** Position one of your servos in place and use it to position the second servo rail. **Do not** push the rear servo rail tight against the servo, but rather leave about a **3/32" gap** between the.servo "body" and the servo rail. This will provide enough room to install and remove the servos without removing the rails. Glue the second servo rail in place. Repeat the step for the second servo to position and glue the third servo rail.

❑ 3. Install the servos using the hardware included with your radio system. Use the plan as a guide **to** position the servos laterally in the fuselage.

❑ 4. Install the receiver, battery and switch. Use foam to cushion the receiver and battery.

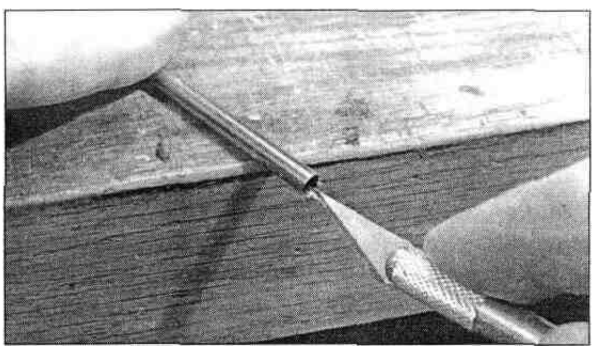
PUSHROD INSTALLATION

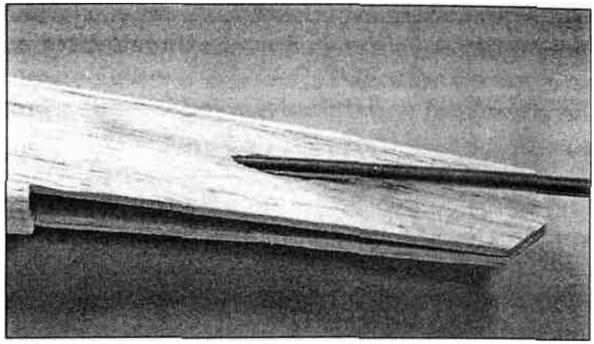


❑ 1. Hold the **nylon control horns** on the elevator and rudder **in the** positions shown on the plan and mark the mounting hole locations. Drill 3/32" diameter holes at these locations.

❑ **2. Harden the balsa** in the area of the control horns (on both sides of the control surfaces) by poking several holes with a pin, then apply thin CA glue. Sand smooth.

❑ 3. Mount the horns with 2-56 screws and the **nylon backing plates** which were attached to the horns.



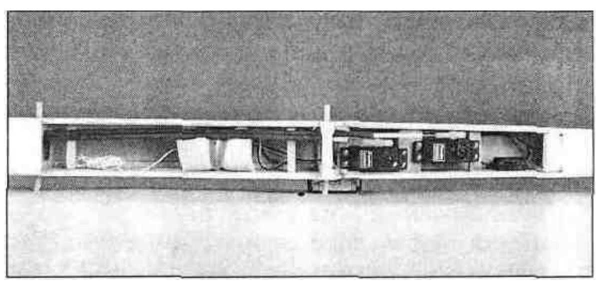


❑ ❑ 4. Use a hobby knife to sharpen one end of a piece of 3/16" (outside diameter) brass tubing, then use this tubing to cut the **pushrod exit holes** (you may use a 3/16" drill bit, but the brass tube method gives a much neater cut). Determine the location of these holes from the plan.

❑ ❑ 5. Insert the plastic pushrod tubes through the holes you just cut. Route the pushrod tubes according to the plan. **Keep the tubes as straight as possible.** Glue the tubes to the fuse sides at the rear exit points using thin CA glue.

❑ ❑ **6. Cut off the tubes at the exit points** and sand them flush with the fuse sides using a sanding block. Use balsa filler to **fill** any gaps between the tubes and fuse sides.

❑ ❑ 7. Thread one of the 2-56 x 1 **threaded rods** into one of the **nylon pushrods. Thread a nylon clevis** 14 turns onto the threaded rod. Slide the pushrod into the tube from the rear of the fuselage. Attach the clevis onto the appropriate control horn.



❑ ❑ 8. Thread another nylon clevis onto another threaded rod. Attach the clevis onto the servo arm. Trim the nylon pushrod 1/2" ahead of the threaded rod. This will allow the threaded rod to be securely attached. Remove the clevis from the servo arm and thread the rod into the nylon pushrod. Reattach the clevis to the servo arm.

☐ 9. Repeat steps 4 through 8 for the remaining pushrod assembly.

☐ 10. Once the pushrods are fully installed, use the remaining 3/16" x 3/16" balsa to make supports for the pushrod tubes. Place the supports in the fuselage towards the leading edge and trailing edge of the wing. The supports will reduce the amount of flex in the pushrods and result in more accurate inputs.

FINAL HOOKUPS & CHECKS

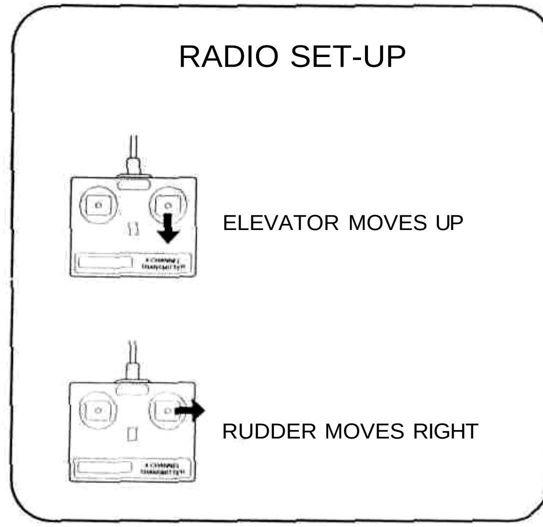
☐ 1. Drill a 1/8" hole in the bottom of the fuse as shown on the plan for the tow hook attachment. Install a 4-40 blind nut into the hole from the inside of the fuselage.

☐ 2. Attach the **threaded tow hook** to the bottom of the fuselage by threading a **4-40 nut** and a **4-40 washer** all the way onto the tow hook and screwing the tow hook into the blind nut. With the tow hook threaded almost all the way into the blind nut, make sure the tow hook is facing straight back and tighten the nut to secure it.

A piece of self-adhesive foam rubber weather stripping can be applied to the front of the fuselage bottom to help protect it from getting **nicked** during landings.

The canopy is held in place with a rubber band. Use a medium-size rubber band to hold the canopy in position as shown on the plan.

RADIO SETTINGS



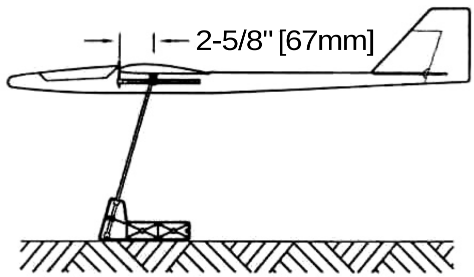
Use the sketch to make sure the **control** surfaces **are moving the correct directions.**

The control throws are as follows:

Elevator:	3/8" up	3/8" down
Rudder:	1-5/8" left	1-5/8" right

BALANCE THE MODEL

Note: This section is VERY important and must not be omitted! A model that is not properly balanced will be unstable and possibly unflyable.



The balance point **(C.G.** - Center of Gravity) is located under the spar. This is the balance point at which your model should balance for your first flights. Later, you may wish to shift the balance up to **3/8" behind** the spar to change the flying characteristics. Moving the C.G. **forward** of the spar will add some stability but it will decrease the overall performance of the sailplane and make it stall easier at slower speeds. Moving the balance **behind** the spar makes the model more agile with a lighter and snappier "feel" and **improves** the sailplane's response to air currents. It also makes the model **less stable** and can cause the sailplane to "tuck under" or dive when its flying speed increases. If you fly the Daydream with its C.G. behind the spar (usually only contest flying), pay close attention and do not let it gain excessive speed. If it does tuck under and you have plenty of altitude, give the plane a little down elevator and allow it to go on under. When it starts to climb up the back of the "outside loop" its airspeed will drop and you can pull out with some up elevator or roll out with full rudder. If you don't have plenty of altitude, gently pull out with up elevator but **be careful** and **don't "force"** it up or you may over stress the wing.

With the wing attached to the fuselage, and all parts of the model installed (ready to fly), lift the model by picking it up with a finger on each bottom inner spar. If the tail drops when you lift, the model is "tail heavy" and you must add weight to the nose to balance. If the nose drops, it is "nose heavy" and you must add weight to the tail to balance.The model should hang with **a slight** nose down attitude. Add lead to the front of the fuselage to correct a tail heavy model. Getting the weight farther back helps correct the "nose heaviness."

CHECKING FOR WARPS

This is a <u>very important</u> step and should be done occasionally throughout the flying season. A sailplane's wing is **most efficient** when it is not twisted or warped at all. "Washout" (wing trailing edges twisted up at the tip) helps make a poor wing design fly better by adding some stability (preventing stalls) at slow speeds but it cuts down on the wing efficiency at normal speeds. The Daydream's wing is designed to fly well at slow speeds without any washout, and therefore we recommend you check to make sure the wings are "flat" using the following procedure:

Set the wing so an inner panel is resting on a flat surface. Any warp (twist) will show up by causing a corner of the panel to rise off the work surface.

To remove the warp, gently twist the wing in the opposite direction while a helper glides an iron or heat gun over the covering on both the top and the bottom of the panel to re-shrink the covering. Hold the twist until the covering cools and then recheck for warps. It may take several tries to get a warp out but it is worth it as you will end up with a sailplane that flies straight and true and responds to air currents like a high performance sailplane should.

Follow the same procedure to check all four wing panels and then go back and double check them. Sometimes you put a warp in one panel while trying to fix another. You should also look at the tail surfaces as they too can warp.

PREFLIGHT

CHARGE THE BATTERIES

Follow the battery charging procedures in your radio instruction manual. You should **always** charge your transmitter and receiver batteries the night before you go flying, and at other times as recommended by the radio manufacturer.

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 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 not thoroughly familiar with the operation of R/C models, ask an experienced modeler to check to see that you have the radio installed correctly and that all the control surfaces do what they are supposed to.

RANGE CHECK THE RADIO

Wherever you do fly, you need to check the operation of the radio before every time you fly. This means with the transmitter antenna collapsed and the receiver and transmitter on, you should be able to walk at least 100 feet away from the model and still have control. Have someone help you. Have them stand by your model and, while you work the controls, tell you what the various control surfaces are doing.

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 competition or in the presence of spectators 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 utilized to supervise flying to avoid having models fly in the proximity of full scale aircraft.

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

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 flyer, unless assisted by an experienced helper.

3. I will perform my initial turn after takeoff away from the pit, spectator and parking areas,

and I will not thereafter perform maneuvers, flights of any sort or landing approaches over a pit, spectator or parking area.

FLYING

First of all, if you are flying with other flyers, check to make sure they are not flying or testing on the same frequency as your model.

Try to find an experienced pilot to help you with your first flights. Although the Daydream is very easy to fly, an experienced pilot can save you a lot of time and possible aggravation by helping you get your model in the air and properly trimmed.

TRIM FLIGHTS

It is a good idea to do a couple of trim flights before each flying session to make sure the plane is still in trim and the radio is working properly.The model will survive a hard landing from 5 feet much better than it will one from several hundred feet. The first few trim flights should be done over a grass field. The longer the grass the better (more cushion).

Turn on the transmitter first and then the receiver and hold the Daydream under the wing with the nose pointed slightly down and directly into the wind. It is very important that you launch the model with the wings level and the nose pointing at a spot on the ground about 50 feet in front of you. Have a friend stand off to the side of you and tell you whether the nose is pointing up or down. If the sailplane is launched with the nose up or launched too hard it will climb a few feet, stall and fall nose first straight down. With the nose pointed down slightly the sailplane will accelerate down until it picks up enough flying speed then level off and glide forward. The plane should be launched with a gentle push forward. With a little practice you will be able to launch it just the right speed so it soars straight ahead in a long and impressive glide path. Adjust the trims on your transmitter to get the plane to fly straight ahead in a smooth glide path.

Once you get the hang of launching it you can try turning the plane during the trim flights by gently applying a "touch" of right or left rudder. You can also try "flaring" the landings by slowly applying a touch of up elevator (pull the stick back) as the plane nears the ground. The Daydream will continue to fly just a few inches off the ground for a surprisingly long distance. It is important you don't "over-control" the model. Make any control inputs slowly and smoothly rather than moving the transmitter sticks abruptly.

YOUR FIRST HI-START LAUNCH

A hi-start is the most popular way to launch your Daydream. It consists of 25' - 100' of rubber tubing and 200' - 400' of string with a parachute or streamer at the end. One end of the rubber is staked down directly upwind of the launch point. One end of the string is attached to the other end of the rubber and the end of the string with the parachute has a loop or ring and is attached to the tow hook on the sailplane.

Follow the directions that came with the hi-start and lay it out directly into the wind. Place the stake at the far **upwind** edge of the flying field so the parachute will blow back onto the flying field.

Turn on your transmitter and then your receiver and hook the parachute onto your plane's tow hook. Pull the plane back approximately twice as far as the rubber is long (i.e. 100' of rubber = pull back 200') or whatever the hi-start instructions state. A "fish scale" is handy for determining the correct amount of pull. For your first flights pull the plane back until there is approximately 8 lbs. of tension. More tension can be used after you get acquainted with the launching procedure.

Hold the plane **above your head** with the wings level and the nose pointed **slightly up and directly into the wind.** Give the plane a healthy push forward to get it flying and it will climb up like a kite. You should not have to touch the elevator during the launch but use the rudder stick to keep it going straight up. As the rubber relaxes the plane will fly off the hi-start and the parachute will bring the end of the string back towards you.

FIRST FLIGHTS

Find a BIG, OPEN field for your first flights. The bigger the better as you won't have to worry about where you need to land. Ground based objects (trees, poles, buildings, etc.) seem to attract model airplanes like a magnet. **Again, we would like to recommend that you find an experienced pilot to help you with these first flights.**

Note: You need to remember that your radio control responds as if you were sitting in the cockpit. When you push the transmitter stick to the right, the rudder moves to the plane's right! This means that when the plane is flying towards you it may seem like the rudder controls are reversed (when you give "right" rudder the plane turns to your left-which is the plane's "right"). It is sometimes easier to learn to fly the plane if you always face your body in the direction the plane is flying and look over your shoulder to watch the model,

Don't worry about accomplishing very much on **your** first flights. Use these flights to get the "feel" of the controls and the Daydream's flying characteristics. Try to keep the plane upwind and Just perform some gentle S-turns (always turning into the wind) until it is time to set up for landing. Have a helper adjust the trims on your transmitter (a little at a time) until the plane will fly straight and level with the transmitter sticks in their neutral positions. It can be very hard for a beginner to fly a plane straight towards him as he would have to do if the plane were downwind and every mistake takes the plane a little farther downwind. When it is time to land, just continue performing the gentle S-turns upwind and let the plane glide onto the ground. Don't worry about where the plane lands -just miss any trees, etc.

Practice flying directly into the wind (upwind of yourself) without letting the plane get off course, and then turn and come downwind until the plane is even with you and try it again. When you are comfortable with flying directly into the wind, start letting the plane go behind you (downwind) a little before you start back upwind. Continue this until you can fly directly towards you from downwind without getting disoriented. At this point you can start to establish a "landing pattern" and bring the sailplane in for a landing from downwind. This enables the plane to be flown as slowly (ground speed) as possible for accurate landings.

THERMAL FLYING

Thermal soaring is one of the most intriguing of all aspects of flying and the Daydream was designed to excel at thermal soaring even in the hands of a novice. It can be hard for the average person to understand how a plane can fly for hours and gain altitude **without a motor.**

FACTS ABOUT THERMALS

Thermals are a natural phenomenon that happen outside, by the millions, every single day of the year. Thermals are responsible for many things including forming several types of clouds, creating breezes, and distributing plant seeds and pollen. If you have ever seen a dust devil (which is nothing more than a thermal that has picked up some dust), you have seen a thermal in action. Their swirling action is very similar to that of a tornado's but of course much gentler. Most thermals have updrafts rising in the 200-700 feet per minute range but they have been known to produce updrafts of over 5,000 feet per minute (that's over 50 miles/hour straight up!) These strong thermals can rip a plane apart or carry the plane out of sight before the pilot can get out of the updraft.

Thermals are formed by the uneven heating of the earth and buildings, etc. by the sun. The darker colored surfaces absorb heat faster than the lighter colors which reflect a great deal of the sun's energy back into space. These darker areas (plowed fields, asphalt parking lots, tar roofs, etc.) get warmer than the lighter areas (lakes, grassy fields, forests, etc.). This causes the air above the darker areas to be warmer than the air over the lighter areas and the more buoyant warm air rises as the cooler, denser air forces its way underneath the warmer air. As this warm air is forced upward it contacts the cooler air of the higher altitudes and this larger temperature difference makes the thermal rise quicker. The thermal is gradually cooled by the surrounding cooler air and its strength diminishes. Eventually the thermal stops rising and any moisture contained in the once warm air condenses and forms a puffy cumulus cloud. These clouds, which mark the tops of thermals, are usually between 2000 and 5000 feet high.

THERMAL SOARING

It takes a lot of concentration to thermal soar effectively. A sailplane can fly along the edge of a thermal and unless the pilot is carefully watching the model he may not realize the opportunity to gain some altitude. Because most thermals are relatively small (a couple hundred feet in diameter or less at 400' altitude) compared to the rest of the sky, the sailplanes will rarely fly directly into the thermal and start rising. Generally, the sailplane will fly into the edge or near a thermal and the effects the thermal has on the plane may be **almost** unnoticeable. As the sailplane approaches a thermal, the wing tip that reaches the rising air first will be lifted before the opposite wing tip. This causes the plane to "bank" and turn away from where we would like the plane to go.

When you are thermal soaring, try to fly as smoothly and straight as possible. Trim the plane to fly in a straight line and **only** touch the controls when you have to. Watch the sailplane carefully and it will tell you what it is encountering.

When the sailplane flies directly into a thermal it will either start rising or stop sinking. Either case is reason enough to start circling (especially in a contest where every second counts). Fly straight ahead until you feel like you are in the strongest lift, **fly a couple of seconds farther** (so your circle will be centered in the strongest lift) and then start circling in a fairly tight but smooth turn. When the sailplane is low the turns have to be tighter to stay in the strongest lift. As the plane gains altitude, the turns can be larger and flatter. The flatter the turn, the more efficient the plane is flying, but don't be afraid to really "crank" it into a steep bank when you are low. If you see the plane falling off on one side of the turn, move your circle over into the stronger lift; Thermals move along with the wind so as you circle you will be swept along with it. Be careful when thermaling that you don't get so far downwind you can't make it back to the field to land.

If the sailplane is flying along straight and all of a sudden turns, let the plane continue to bank (you may have to give it some rudder to keep it banking) until it has turned 270° (3/4 of a full circle). Straighten out the bank and fly into whatever turned the plane. If you encounter lift, and you won't every time, start circling just as **you** did when flying directly into a thermal.

Thermals are generated all day long, but the strongest thermals are produced when the sun is directly overhead. 10:00 am - 2:00 pm seems to be the best time to get those "killer" thermals. Some of these thermals can be very large and you may find it hard to get out of them. If you find yourself getting too high, don't dive the plane to get out of the lift. Sailplanes are very efficient aircraft and they will build up a lot of speed and could "blow up" in the rough air of a thermal.The easiest way to lose altitude is to apply full rudder and full up elevator. This will put the plane into a tight spin that will not over stress the airframe but it will enable it to lose altitude very quickly. This is especially helpful if the sailplane gets sucked into a cloud or it gets too high to see.The twirling action will give the sun a better chance of flashing off of the wing and catching your attention. When you are high enough and want to leave the thermal, add a little down trim to pick up some speed and fly 90° to the direction of the wind. If you are not really high and want to find another thermal, you may want to look upwind of the last thermal. The same source that generated this thermal is probably producing another. Just watch out for "sink" which is often found behind and between thermals.

As you might expect, with all this air rising, there is also air sinking.This air is the sailplane pilot's nightmare that can really make soaring challenging. "Sink" is **usually** not as strong as the thermals in the same area, but it can be very strong. Down drafts of many hundreds of feet per minute are common on a good soaring day. These down drafts can make a sailplane look like it is falling out of the air. Because of this, it is important that you do not let the sailplane get too far downwind.

When encountering sink, immediately turn and fly 90° to the direction of the wind (towards you if possible). Apply a little "down elevator" and pick up some speed to get out of the sink as fast as possible. Every second you stay in the sink is precious altitude lost.

POINTERS FOR CONTEST FLYING

Pay Attention! - Pay close attention to the sailplanes flying before you, watch them and try to establish where and when the thermals are being formed. Thermals are often formed in cycles and can be fairly regular, so if you keep track of the time intervals you will have a pretty good idea of when and where a thermal may be generated.

Watch the birds! -Thermals suck up small insects that many birds love to eat. A bunch of swallows flying around in one area may indicate a thermal. Soaring birds (hawks, vultures, eagles etc.) are the best thermal indicators. They not only show you where the thermal is but they also show you where the center is. These "Masters of the sky" will often fly right along with sailplanes.

Practice those landings! - Most thermal contests are won or lost during the Landing. Establish a particular landing pattern and try to stick to it for all landings. Learn to shift your pattern to account for the wind and particular flying field characteristics. Spoilers can be very useful during contest landings. They allow you to bring the sailplane in for a landing higher or faster than normal to guard against any last minute sink or gusts and dump the extra altitude and speed at the last second. They can also be used to help control your skid. Opening the spoilers will stop the plane from sliding a little quicker. You can also "steer" the plane while it is sliding along the ground. Don't expect to be able to "horse it around" but you can gain valuable inches by using the rudder to guide it toward the spot as it slides to a stop. Be very careful not to "ground loop" the plane since you will lose your landing points if the plane flips over.

Concentrate - Keep your eye on your sailplane during your contest flights. Have a helper or your counter watch the other sailplanes in the air. Sometimes your sailplane will wiggle so quickly or gently that you may miss it if you are not paying close attention. If you find a productive thermal, don't leave it because your helper tells you that someone else has found a different one.

Know your sailplane! - Learn what your sailplane will and won't do and fly within this envelope. This will allow you to ride thermals downwind while knowing when you have to head back to make your landing safely.

Learn from the wind! - Keep track of which way the wind is blowing. If the wind suddenly shifts, there is some thermal action fairly close to you. The air is probably being either sucked up into a thermal or falling out of some sink. In either case it is often a good idea to fly in the direction the wind is blowing if your sailplane is in the general area. This will take you towards a thermal if there is one or away from the sink, both of which are desirable.

SLOPE SOARING

FLYING

Slope soaring is a type of flying that is very popular in hilly regions and along the coasts. This type of soaring is possible when the wind is blowing directly up a hill or cliff. As the wind hits the slope it is forced up, producing lift which can be utilized by real sailplanes, hang gliders, birds and even model sailplanes.

To be able to slope soar, you need a slope with a smooth piece of land (or water) out in front of it and a breeze blowing pretty close to straight up the slope. The higher and steeper the hill or cliff the better. Also the larger and smoother the land out in front the better. The air flowing along hits the hill, is forced up and can generate a very large area of lift. Behind the hill is a large area of turbulent air that can be very dangerous to try to fly in. The faster the wind is blowing the stronger the lift and turbulence will be.

To fly off a slope, stand near the edge and throw the sailplane (nose down) into the wind. As the sailplane flies out into the "band" of lift it will begin to gain altitude. Turn and fly parallel to the slope and make all of your turns into the wind (especially when you are close to the slope). You will be surprised at the altitude you can gain just from slope lift. Thermals will often be "popped loose" by these slopes. If you catch a thermal and follow it downwind, be very careful to stay high enough to make it back to the slope without flying through the turbulent air behind the slope. If you don't have enough altitude you may want to land a good distance behind the slope if possible to avoid this turbulent air.

SLOPE LANDINGS

Landings can be very tricky on some slopes. On gentle slopes you can often fly very close to the top of the slope and "slide" into the top of the slope without encountering any turbulent air. On steeper slopes you may have to be a little more aggressive to get the plane out of the lift. In any case it is a good idea to plan your landing before you launch your plane.

BALLASTING

In strong wind conditions, you may want to add ballast (weight) to the sailplane to increase its wing loading which increases its normal flying speed. Increasing the weight of your sailplane does not change its "glide ratio" but it does make it fly faster which makes it sink a proportional amount faster. Because of this faster sink rate, you need to be very cautious when ballasting for a thermal contest. In duration type contests only use ballast on very windy days that also have a lot of thermal activity.

Add the weight as near as possible to the C.G. of the plane. 4-8 oz. will make a noticeable difference in the sailplane's flying speed and more can be added if needed. Make sure to recheck the C.G. of the plane after adding ballast - it should remain where it was.

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

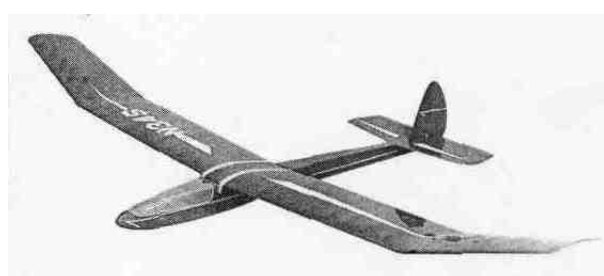
GOOD LUCK AND GREAT SOARING!

OTHER ITEMS AVAILABLE FROM DYNAFLITE

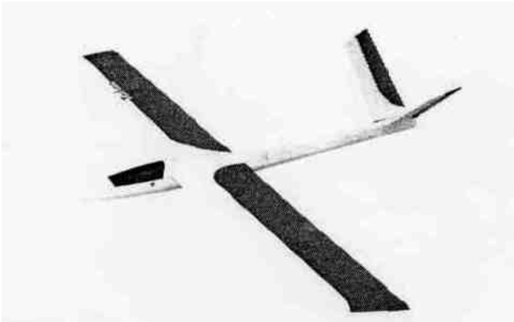
DYNAFLITE™ HI-STARTS
DYFP8301 (Standard)
DYFP8302 (Heavy Duty)

- Compact power for high-altitude launches.
- Complete systems for 2-meter and unlimited class sailplanes.

A Dynaflite Hi-Start and 800' of clear launch area are all you need to send your sailplane rocketing up to 500' in the air! Easy to lay out and retrieve, Hi-Starts include everything required for sailplane launches: 100' of UV-stabilized surgical tubing, injection-molded reel, parachute, steel stake and tow ring, and nylon tow line. Standard Hi-Start with 1/8" diameter tubing offers strong, steady power for 2-meter sailplanes. Heavy-Duty Hi-Start with 3/16" diameter tubing provides the launch power needed for sailplanes spanning 100" or more.

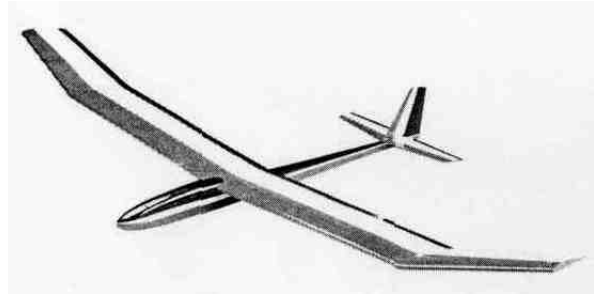


Dynafilte Wanderer"
This docile, slow-flying kit gives newcomers the response time needed for successful first flights — and the durable, all-balsa construction required to keep flying after a less-than-perfect landing. **DYFA3901**



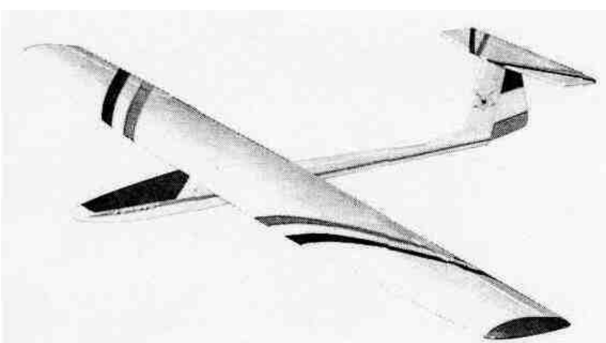
Dynafilte Talon"

No matter if the air's light and the airfield's small — you'll be thrilled with the Talon's speed and maneuverability. Launch it by hand, down a slope or using a hi-start. Ailerons increase the precision of your aerobatics.The stabilizer controls lift with minimal drag, and can be built conventionally or as a full flying T-tail. Wing assembly is simplified by a special, strong "D-tube" design, and the fuselage consists of ply formers and six preshaped balsa sides. **DYFA2017**



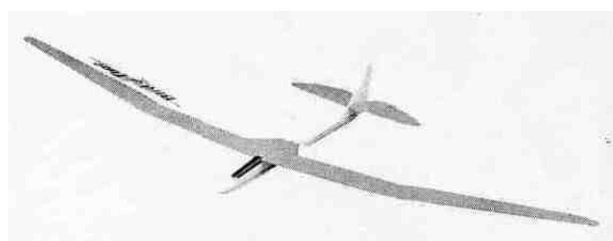
Dynafilte Skeeter"

Versatile, affordable and easy to assemble, the 55.5" span Skeeter will deliver for beginners and pros alike. An S3021 airfoil cuts through the air to gain maximum altitude, whether launched by hand or high start. An all-wood weight of just 12 oz. allows it to thermal in a trim, tight spiral, or make use of the gentlest breezes on the slopes. **DYFA2014**



Dynaflite Bobcat"

Easy enough for anyone with rudder/elevator experience to enjoy, the Bobcat brings together the precise control allowed by ailerons and the stylish look of F-3B aircraft. Spanning 78", this sailplane features a low wing loading and a turbulated airfoil for excellent performance at low speeds, with minimum sink. AT-tail keeps the horizontal stab out of harm's way. The kit assembles easily from high-quality balsa and lite ply...and once launched, it climbs like a rocket! **DYFA2016**



Dynaflite Bird ofTime"

Put your sailplane experience to use on a model that time has proven to be a winner! The unlimited class, 117" span Bird ofTime pairs refined looks with superior performance — for example, its thin wing and light wing loading (5.52 oz/sq ft) provide a super-low sink rate, as well as near-legendary lift/drag rate. It's engineered as gracefully as it performs: the slender balsa/ply fuselage tapers toward a full-flying stabilizer, while the 2-piece wing features a large, 5/16" wing rod- and fully-sheeted "D" tube. **DYFA4502**