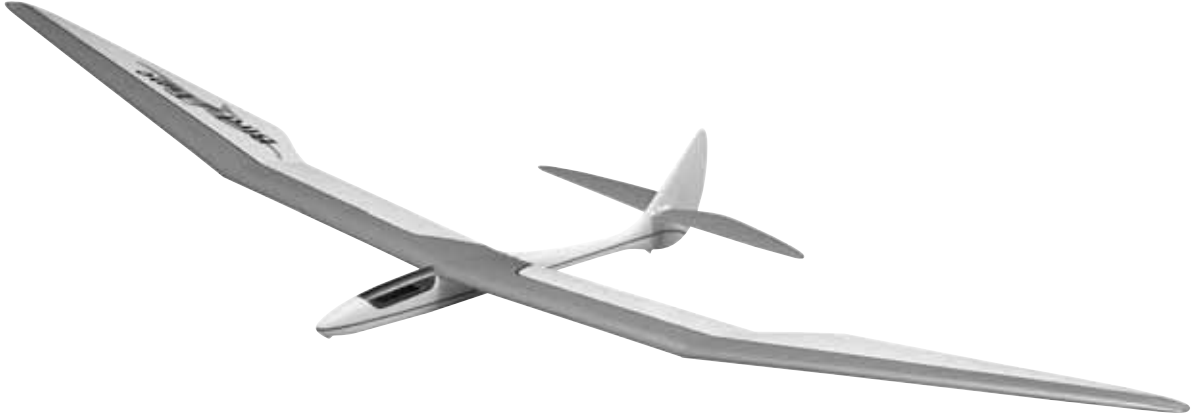


Dynaflite™

Bird of Time™

**Unlimited Class
3-Meter ARF Sailplane**

READ THROUGH THIS MANUAL BEFORE STARTING CONSTRUCTION. IT CONTAINS IMPORTANT INSTRUCTIONS AND WARNINGS CONCERNING THE ASSEMBLY AND USE OF THIS MODEL.



Wingspan: 117 in. [2972mm]
Wing Area: 1050 sq in [67.73 dm²]
Weight: 60 oz [1700 g]
Wing Loading: 8.2 oz/sq ft [25.0 g/dm²]
Length: 49 in. [1245mm]
Radio: 2-Channel with 2 servos

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, the buyer is advised to return this kit immediately in new and unused condition to the place of purchase.**

Dynaflite

P.O. Box 788
Urbana, IL 61803
(217) 398-8970
productsupport@dynaflite.com

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INTRODUCTION

Thank you for purchasing the Dynaflyte Bird of Time ARF. The Bird of Time ARF is a lightweight, high performance model that has great soaring qualities. It is a classic model, a timeless design that always draws a crowd of admirers wherever it is flown. With its strong fiberglass fuselage the Bird of Time ARF is easy to assemble and is very strong. We hope you will enjoy years of soaring your Bird.

For the latest technical updates or manual corrections to the Bird of Time, visit the web site listed below and select the Dynaflyte Bird of Time ARF. If there is new technical information or changes to this model, a "tech notice" box will appear in the upper left corner of the page.

www.dynaflyte.com/airplanes/index.html

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

1. Your Bird of Time ARF should not be considered a toy, but rather a sophisticated, working model that functions very much like a full-size airplane. Although the Bird of Time is a lightweight soaring model, just the same as any R/C plane, it should still be flown with care. Even while gliding at slow speeds, the Bird of Time could possibly cause injury to yourself or spectators and damage property.
2. You must assemble the Bird of Time **according to the instructions**. Do not alter or modify the model, as doing so may result in an unsafe or unflyable model. In a few cases the instructions may differ slightly from the photos. In those instances the written instructions should be considered as correct.
3. You must take the time to **build straight, true and strong**.
4. You must use an R/C radio system that is in first-class condition.
5. You must correctly install all R/C and other components so that the model operates correctly on the ground and in the air.
6. You must check the operation of the model before **every** flight to insure that all equipment is operating and that the model has remained

structurally sound. Be sure to check clevises or other connections often and replace them if they show signs of wear or fatigue.

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

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

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

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

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



Academy of Model Aeronautics

5151 East Memorial Drive

Muncie, IN 47302

(800) 435-9262

Fax (765) 741-0057

Internet address:

<http://www.modelaircraft.org>

ADDITIONAL ITEMS REQUIRED

Flight Equipment

The Bird of Time ARF requires a two-channel radio with two servos and a receiver. A standard receiver can be used, but you will need one micro or mini servo and one standard servo. The mini/micro servo is needed for the flying stabilizer and is mounted in the rear of the fuselage, where it is very narrow. If a mini servo is used you may need to trim the fuselage opening for the servo to fit.

Because the elevator is aerodynamically counter-balanced, a servo with at least 15 oz in of torque is adequate.

Servos:

- (HCAM0110) CS-12 mini, 35 oz in torque
- (FUTM0033) S3101 mini, 34.7 oz in torque
- (HCAM0090) CS-5 micro, 16.7 oz in torque
- (FUTM0041) S3106 micro, 16.7 oz in torque

Receiver: While there is adequate room for a full size receiver, a small receiver, like those listed below, will be easier to install (low band: channels 11-35, high band: channels 36-60):

- (GPML0044) 4-channel FM, low band
- (GPML0045) 4-channel FM, high band
- (FUTL0442) 4-channel FM, low band
- (FUTL0443) 4-channel FM, high band

Receiver crystal:

- (FUTL62**) for GPM or FUT low band
- (FUTL63**) for GPM or FUT high band

Additional items:

- 24" - 30" [610 - 765mm] Servo Extension Wire.
- High start (DYFP8301) or winch for launching.
- Receiver battery with sufficient capacity for extended soaring is required. We recommend a square battery with at least 500 mAh capacity.

Building Supplies

In addition to common household tools and hobby tools, here is the list of items used to build the Bird of Time ARF. **Great Planes Pro™ CA and epoxy glue is recommended.**

- 6-minute epoxy (GPMR6042)
- 1 oz. Medium CA (GPMR6008)

Optional Supplies and Tools

- Hobby knife (HCAR0105)
- #11 blades (5-pack, HCAR0211)
- Double-sided foam tape (GPMQ4440) for mounting the receiver
- Sandpaper and sanding block
- Small Phillips screwdriver (#1)
- Drill Bits: 1/16" [1.6mm], 5/64" [2mm], 3/32" [2.4mm], 7/64" [2.8mm], 1/8" [3.2mm]
- CA applicator tips (HCAR3780)
- CA debonder (GPMR6039)
- Epoxy brushes (6, GPMR8060)
- Mixing cups (GPMR8056)
- 36" metal ruler (HCAR0475)
- Robart Super Stand II (ROBP1402)
- Hobbico® Duster™ can of compressed air (HCAR5500)
- Rubbing alcohol (for epoxy clean up)
- Switch & Charge Jack Mounting Set (GPMM1000)
- Rotary tool such as Dremel® Moto-Tool®
- Servo horn drill (HCAR0698)
- Accu-Throw™ Deflection Gauge (GPMR2405)
- CG Machine™ (GPMR2400)
- Sealing Iron (TOPR2100)

IMPORTANT BUILDING NOTES

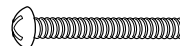
- There are two types of screws used in this kit:

Sheet metal screws are designated by a number and a length. For example #6 x 3/4" [19mm]:



This is a number six screw that is 3/4" [19mm] long.

Machine screws are designated by a number, threads per inch and a length. For example 4-40 x 3/4" [19mm]:



This is a number four screw that is 3/4" [19mm] long with forty threads per inch.

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

- When you get to each step, read that step **completely through to the end** before you begin. Frequently there is important information or a note at the end of the step that you need to know before you start.

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

- The Bird of Time ARF is factory-covered with Top Flite® MonoKote® film. Should repairs ever be required, MonoKote can be patched with additional MonoKote purchased separately. MonoKote is packaged in six-foot rolls, but some hobby shops also sell it by the foot. If only a small piece of MonoKote is needed for a minor patch, perhaps a fellow modeler would give you some. MonoKote is applied with a model airplane covering iron, but in an emergency a regular iron could be used. A roll of MonoKote includes full instructions for application. Following are the colors used on this model and order numbers for six foot rolls.

White (TOPQ0204) Orange (TOPQ0202)

ORDERING REPLACEMENT PARTS

To order replacement parts for the Dynaflite Bird of Time ARF, use the order numbers in the Replacement Parts List that follows. Replacement parts are available only as listed. Not all parts are available separately. Replacement parts are not available from Product Support, but can be purchased from hobby shops or mail order/Internet order firms. Hardware items (screws, nuts, bolts) are also available from these outlets. If you need assistance locating a dealer to purchase parts, visit www.dynaflite.com and click on "Where to Buy". If this kit is missing parts, contact Dynaflite Product Support.

REPLACEMENT PARTS LIST

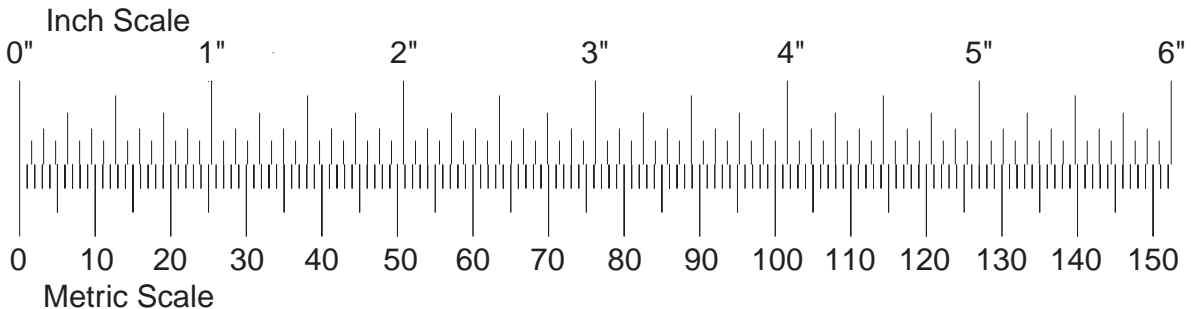
| <u>Order Number</u> | <u>Description</u> | <u>How to Purchase</u> |
|----------------------------|---------------------------|-------------------------------|
| | Missing pieces | Contact Product Support |
| | Instruction manual | Contact Product Support |
| | Full-size plans | Not available |
| DYFA6550 | Fiberglass Fuselage | |
| DYFA6551 | Wing Kit with Joiners | Contact Your Hobby |
| DYFA6552 | Tail Surface Set | Supplier to Purchase |
| DYFA6553 | Canopy | These Items |
| DYFA6554 | Decal Sheet | |

IMPORTANT NOTES ABOUT WORKING WITH FIBERGLASS

If you have never worked with fiberglass there are a few basic things you should be aware of:

- When you are cutting into fiberglass, be sure you are cutting the correct place. Unlike wood, you are not able to go back and easily fix a mistake.
- Whenever you are gluing a part to the inside of fiberglass it is important to roughen the inside surface of the fiberglass with 80-grit sandpaper and then wipe the area with rubbing alcohol. The molding process leaves a waxy residue that can prevent a good bond between the glue and the parts being glued.

WARNING: The fuselage included in this kit is made of fiberglass, the fibers of which may cause eye, skin and respiratory tract irritation. Never blow into a part to remove fiberglass dust, as the dust will blow back into your eyes. Always wear safety goggles, a particle mask and rubber gloves when grinding, drilling or sanding fiberglass parts. Vacuum the parts and the work area thoroughly after working with fiberglass.



KIT CONTENTS

Before starting to build, use the **Kit Contents** list to take an inventory of this kit to make sure it is complete and inspect parts to make sure they are of acceptable quality. If any parts are missing or are not of acceptable quality, or if you need assistance with assembly, contact **Dynaflite Product Support**. When reporting defective or missing parts, use the part names exactly as they are written in the Kit Contents list on this page.

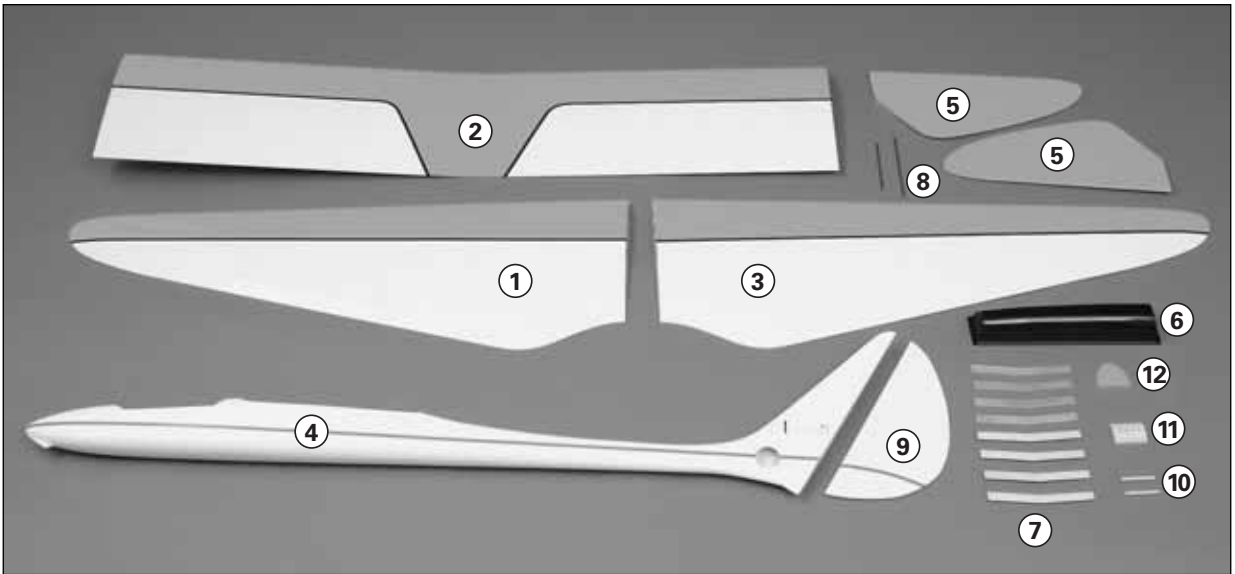
Dynaflite Product Support

Telephone: (217) 398-8970

Fax: (217) 398-7721

E-mail: productsupport@greatplanes.com

You can also check our web site at www.dynaflite.com for the latest Bird of Time updates.



Kit Contents (Photographed)

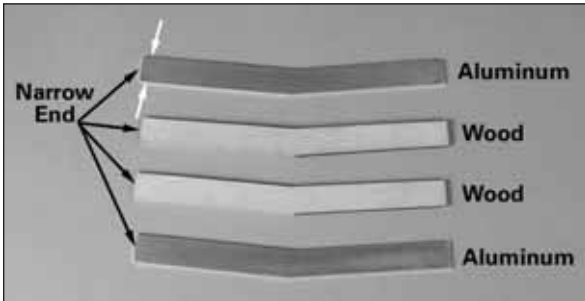
- | | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> 1 Left Wing Panel 2 Center Wing Panel 3 Right Wing Panel 4 Fiberglass Fuselage | <ul style="list-style-type: none"> 5 Left & Right Stabilizer 6 Canopy 7 Wing Joiners 8 Stabilizer Joiners | <ul style="list-style-type: none"> 9 Rudder 10 1/4" Wood Dowels 11 Tow Hook Block 12 TE Reinforcement |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Kit Contents (Not Photographed)

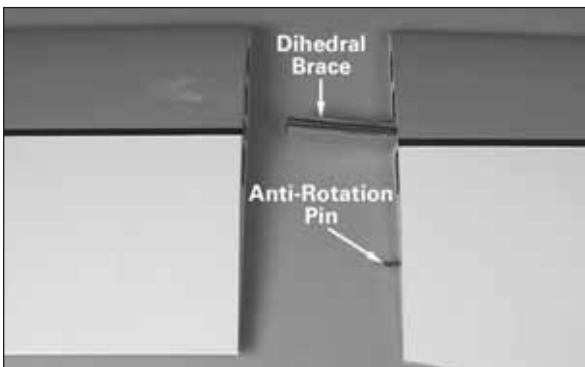
- | | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> (1) Nylon Control Horn (1) Nylon Clevis (1) Nylon Swivel Clevis (1) Nylon Faslink Connector (4) 4-40 Blind Nut (1) 4-40 Hex Nut (2) 6-32 Blind Nut | <ul style="list-style-type: none"> (1) Silicone Retainer (2) 2-56 x 5/8" Machine Screw (2) #2 x 3/8" Sheet Metal Screw (1) 4" Pushrod (2) 6-32 x 3/4" Machine Screw (2) 4-40 x 1/8" Set Screw (1) 4-40 Tow Hook | <ul style="list-style-type: none"> (1) #4 Flat Washer (2) #6 Flat Washer (1) 36" Pushrod (1) Bag of Weight Shot (1) Servo Mounting Tape (2) Metal Anti-Rotation Pins <li style="padding-left: 20px;">CA Hinges |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

ASSEMBLY

Assemble the Wing



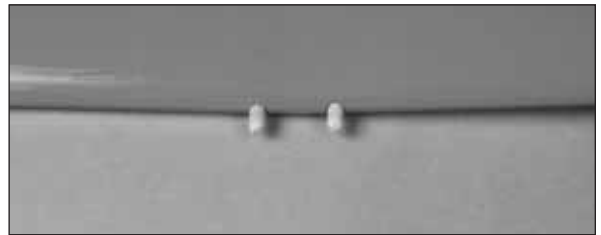
1. Locate two wood dihedral braces and two aluminum dihedral braces. Using 6-minute epoxy, glue the four pieces together with the aluminum pieces on the outside. Mark the narrow end. **Important:** One end of the parts is *slightly* narrower than the other. It is important that all four narrow ends are aligned with each other. The narrow end is inserted into the outer wing tip panels. If you have a LARGE transport vehicle and model storage area, you might want to permanently glue the wing tip panels to the center section. If not, you can assemble the wing at the flying field by installing the tip panels to the center section and holding them in place with some clear tape, such as Scotch® Magic Tape. This will allow you to remove the panels when you finish flying for the day.



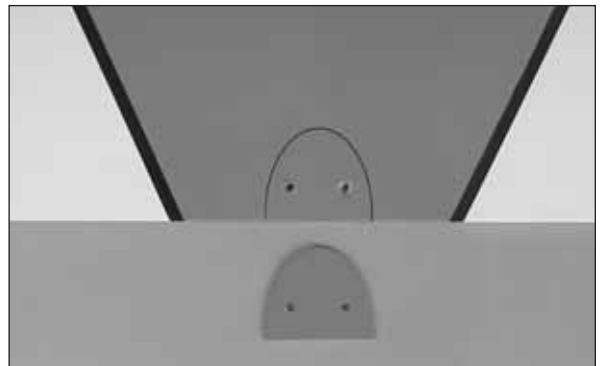
2. Trim any excess glue from the assembled dihedral brace. Test fit the narrow end of the

dihedral brace into the right outer wing tip panel. It should be a tight fit. Also insert one of the short 1" [25.4mm] metal anti-rotation pins into the panel. Test fit the panel to the wing center section. Be sure the dihedral brace and anti-rotation pin fit properly and that the wing tip panel fits tightly to the center section. Make any adjustments needed.

3. When satisfied with the fit, remove the wing tip panel from the center section. Glue the dihedral brace and anti-rotation pin into the outer wing tip panel **only** with 6-minute epoxy. Clean any excess epoxy that oozes from the joint.
4. Return to step 1 and complete the left wing panel.



5. Cut the covering from the holes in the leading edge of the wing center section for the two dowels. Round one end of each of the dowels and glue them into the center section with 6-minute epoxy. The rounded ends should stick out of the wing at least 5/16" [8mm].

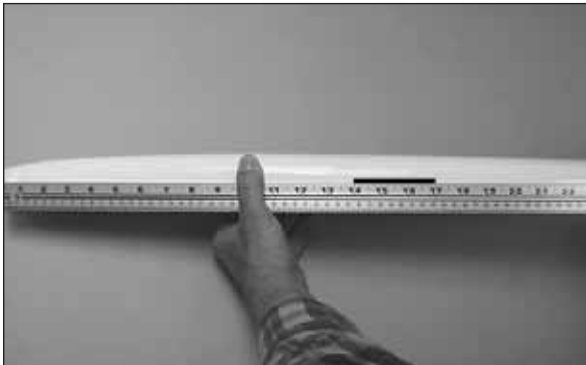


6. Cut the covering from the holes in the top and bottom of the trailing edge of the wing center section for the hold down screws. Also cut the covering from the holes in the ply reinforcement plate. Line the holes up in the plate and TE and

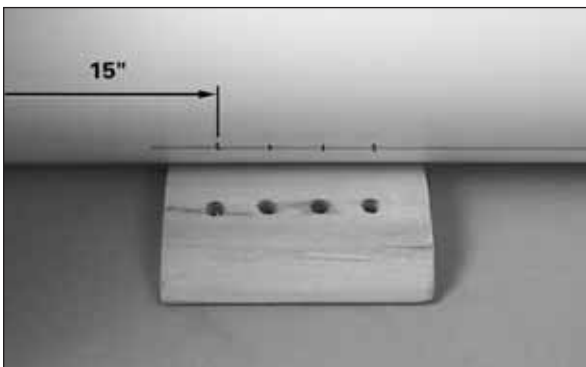
draw the outline of the plate on the TE. Remove the covering 1/16" [1.6mm] inside the lines and glue the plate in place with medium CA. Be careful not to cut the wood under the covering.

Install the Tow Hook Mount

NOTE: The fuselage has lead weight installed in the nose to aid in balancing the model. There is also a small hole in the nose to allow additional weight shot (included) to be added to the nose. Use a small screw to plug the hole if you add more weight shot to the nose.

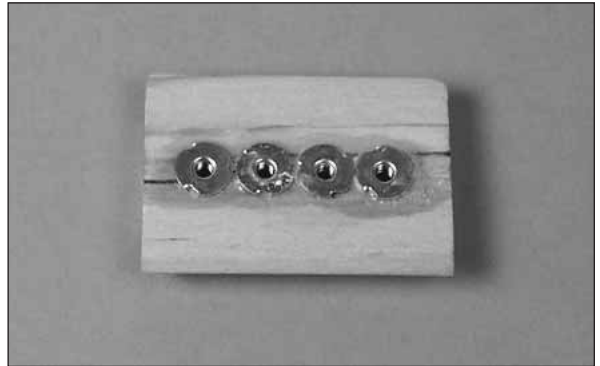


❑ 1. Using a long straight edge, mark the centerline of the bottom of the fuselage, between 14" and 17" [356 and 432mm] aft of the nose.

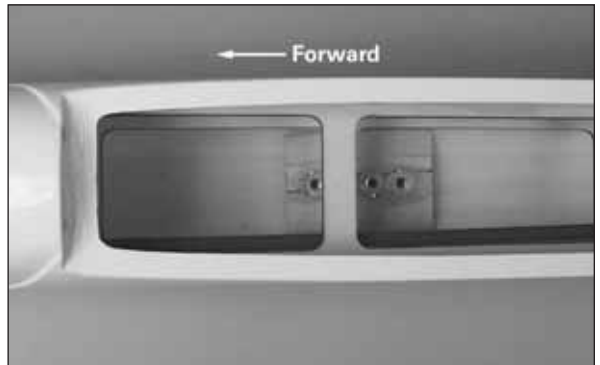


❑ 2. Using the pre-drilled tow hook block, mark the location of the four holes in the block onto

the bottom of the fuselage. The first hole should be 15" aft of the nose. Carefully drill a 1/8" [3.2mm] hole at each of the four marks.

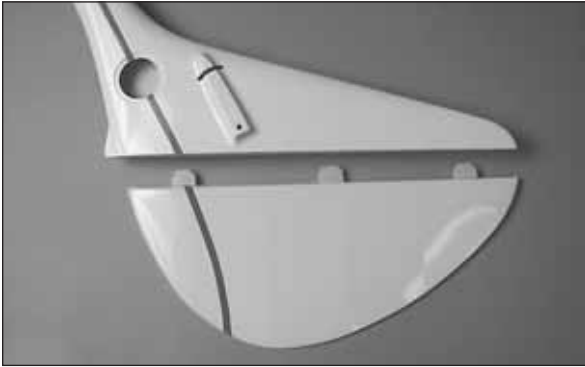


❑ 3. Install four 4-40 blind nuts in the flat side of the tow hook block. Hold the blind nuts in place with some epoxy or CA glue, being careful not to get any glue in the threads of the blind nuts.

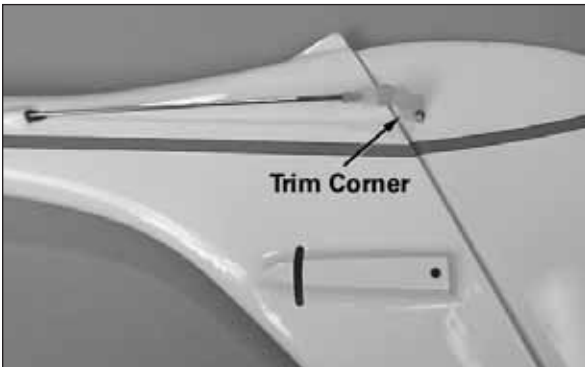


❑ 4. Glue the tow hook block to the bottom of the fuselage with 6-minute epoxy. Be sure the holes line up properly. **Note:** Prepare the fuselage by roughing the area with 80-grit sandpaper. Clean the area with a paper towel and alcohol.

Install the Rudder

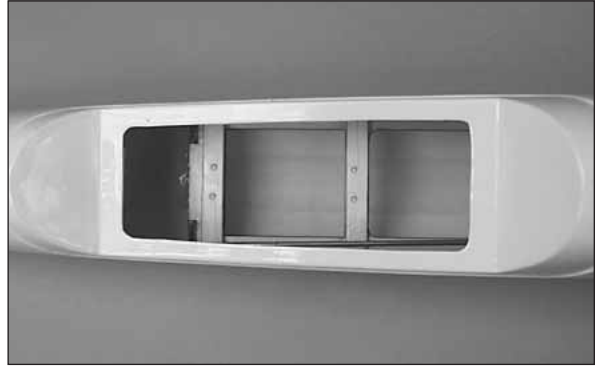


1. Cut three hinges from the supplied CA hinge material to a size of $3/4" \times 1"$ [19 x 25.4mm]. Snip the corners off to make the hinges easier to insert into their slots. Fit the CA hinges in the precut slots in the rudder and vertical fin. If the slots are tight, use a hobby knife to widen the slots. Insert the knife in the slot and rock it back and forth. It is the rear of the knife blade that does most of the work. When satisfied with the fit, glue the hinges in place with six drops of thin CA on each side of the hinges. DO NOT use any accelerator. Be sure to leave enough of a gap so the rudder can reach full deflection.



2. Thread a nylon clevis on the 36" [915mm] wire pushrod at least 13 full turns. Install a silicone retainer on the clevis. Insert the pushrod into the tube in the fuselage. Install a control horn on the clevis using the hole furthest out on the horn. Mark the location of the mounting screw holes on the rudder. Drill $3/32"$ [2.4mm]

holes for the screws and mount the control horn to the rudder with the 2-56 x $5/8"$ [15.9mm] machine screws and the nylon back plate. Note that the holes in the front of the control horn (for the clevis) are in line with the hinge line. Trim the corner of the control horn and the nylon backplate as shown in the picture above.

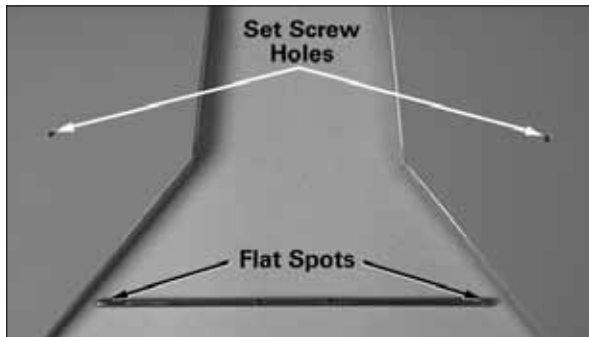


3. Mark the location of the mounting holes for the rudder servo on the servo tray in the nose of the fuselage. Drill pilot holes and install the screws that came with your servo. Remove the screws and harden the holes with some thin CA.

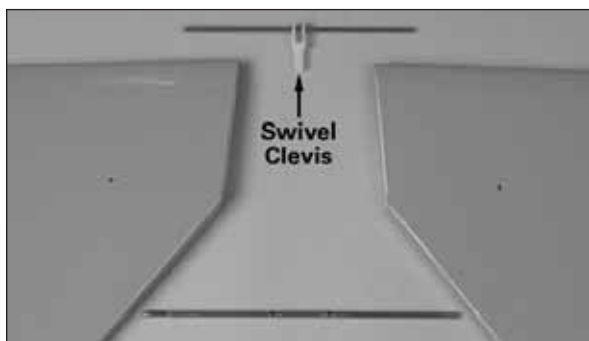


4. Mount the rudder servo with the grommets, eyelets and screws supplied with your servo. Place a servo arm on the servo perpendicular to the servo. With the rudder centered, mark the rudder pushrod where it crosses the outer hole in the arm. Bend the wire up 90 degrees at the mark. Secure the wire to the servo arm with a nylon Faslink connector and cut off the excess wire. Install the retaining screw for the servo arm.

Assemble the Horizontal Stab



❑ 1. Cut the covering from the two small holes in the bottom of the left and right stab halves. The joiner wire should have flat spots ground into it for the 4-40 x 1/8" [3.2mm] set screws that will hold the stab halves to the joiner wire.

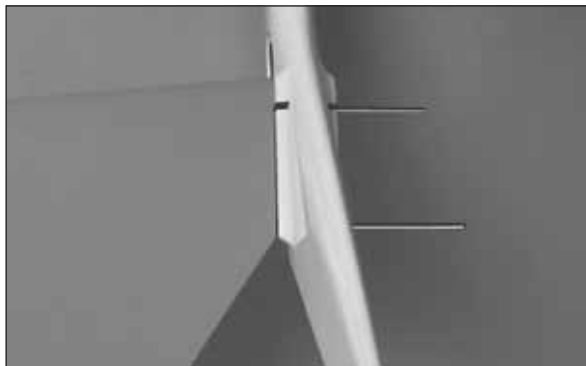


❑ 2. Enlarge the holes in the swivel clevis, for the shorter forward joiner wire, with a 7/64" [2.8mm] drill bit. Install the nylon swivel clevis on the forward joiner wire.



❑ 3. Insert the joiner wires in the left stab half (shown here upside down). **Note:** After you have

installed the completed stab on the model, you may want to glue these wires permanently into one of the stab halves with thin CA. This will make it harder to misplace the wires.



❑ 4. The stab pivots on the rear wire. It is full flying and aerodynamically balanced. Check that your stab fits properly, then remove it.

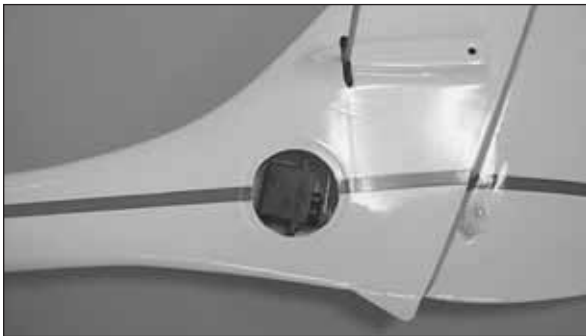
Install the Elevator Linkage

The following photos show a CS-5 micro servo being installed. If you are using a larger mini servo, you may need to trim the hole in the fuselage for the servo to fit. You will also need to glue the servo directly to the fuselage side.



❑ 1. The elevator pushrod is pre-assembled and consists of a wire with a Z-bend on one end and a threaded connector soldered to the other end. Thread the nylon swivel clevis 12 full turns onto

the threaded end of the elevator pushrod. Cut the servo arm so that there is only one arm left. Plug the servo into the elevator connector of the receiver. Turn on the radio system with the elevator trim centered on the transmitter. Install the servo arm on the servo, perpendicular to the servo. Install the retaining screw on the servo arm. Turn off the radio system and unplug the servo. Insert the Z-bend on the elevator pushrod into the outer hole of the servo arm. Position the servo centered over the opening in the rear of the fuselage. Note where you will need to position the servo inside the fuselage so that the hole in the nylon swivel clevis will line up over the center of the slot for the forward elevator joiner.

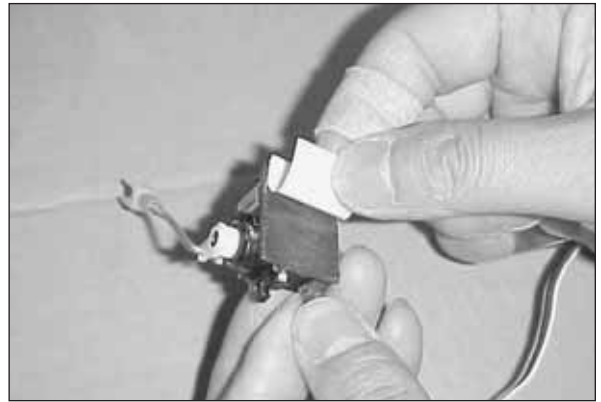


❑ 2. Use 80-grit sandpaper to roughen the fuselage side where the servo will be mounted. Clean the area with rubbing alcohol. Install the servo in place in the fuselage with the forward elevator joiner wire positioned through the hole in the swivel clevis. Be sure the servo arm is perpendicular to the servo.

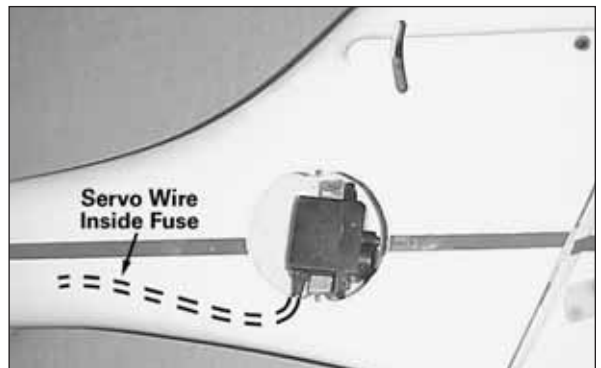


❑ 3. Cut the two 1/4" x 3/8" [6.4 x 9.6mm] hardwood blocks so that they are as long as the

width of your servo. Glue the blocks to the fuselage side with a 6-minute epoxy. Do not get any epoxy on the servo. **Note:** The blocks are not attached to the servo. They are used as guides to hold the servo in place.



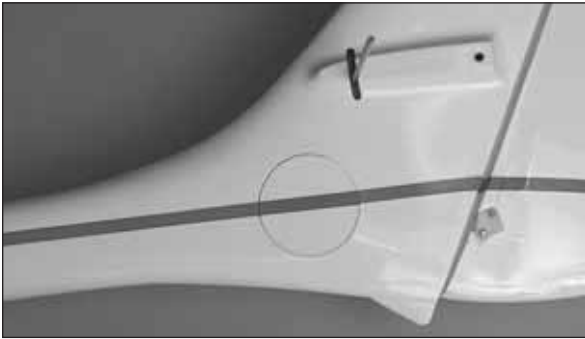
❑ 4. Remove the servo from the fuselage. You may have to break the blocks loose to remove the servo. If so, glue them back into place when you mount the servo in the next step. Put some servo mounting tape on the side of the servo that is against the side of the fuselage. Install the screw holding the servo arm to the servo. Install a 24" [610mm] servo extension wire on the servo. Secure the extension with some heat shrink tubing or tape. **Note:** If you will be installing the receiver in the nose of the model you will need a 30" [765mm] extension wire.



❑ 5. Reinstall the servo in the fuselage with the servo wire running to the front of the fuselage. Reinforce the glue joints for the blocks but do not get any epoxy on the servo.



- ❑ 6. Put the 1/16" [1.6mm] ply strip across the servo. Drill a pilot hole through the ply and into the hardwood block at each end of the ply strip. Use two #2 x 3/8" [9.6mm] sheet metal screws to hold the ply strip in place.



- ❑ 7. Secure the servo cover to the fuselage with a clear tape circle (cut from a leftover clear area of the decal sheet using the template provided on page 17).

Install the Receiver



- ❑ 1. Install your receiver. The photo shows a Futaba R114F 4-channel receiver. Use 1/4" [6.4mm] foam or double-sided foam tape to

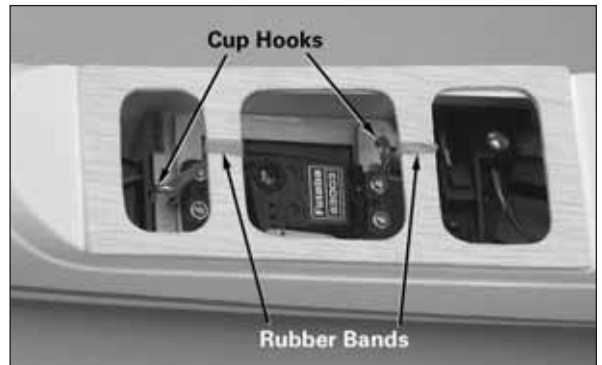
protect the receiver and hold it in place. **Note:** The receiver can also be mounted in the nose if required for balancing the model.

- ❑ 2. Route the receiver antenna to the second tube in the fuselage. Push the antenna into the tube making sure the antenna goes down the full length of the tube.

Final Assembly



- ❑ 1. Cut the canopy along the cut lines and fit it to the fuse. The canopy can be held in place with clear tape or #2 x 3/8" [9.6mm] screws.



Note: If you are concerned with the drag of an external switch and charge plug, the canopy can be installed using the included ply mounting plate. Glue the canopy to the ply plate and then use small rubber bands and cup hooks (not included), as shown in the photo above, to hold the canopy in place.

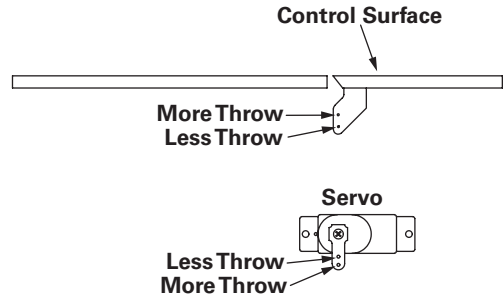


❑ 2. Install the receiver switch and battery charge connector. We used a Great Planes Switch and Charge Jack Mounting Set (GPMM1000, not included). **Note:** If you are concerned with the drag of an external switch and charge plug, they can be mounted internally. This will require that the canopy be easily removable as explained in step 1.

❑ 3. Wrap your battery in protective foam and install it in the fuselage. A square pack will fit in the nose, allowing it to be positioned for balancing.

❑ 2. Center the trims on the transmitter. Adjust the clevises to center the rudder and elevator.

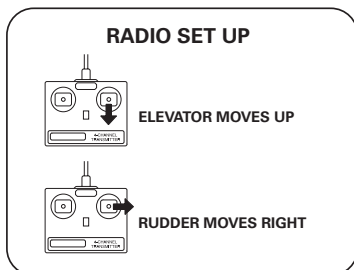
❑ 3. Use the ATV function in the transmitter or adjust the position of the pushrods on the servo arms or the control horns to get the control surface throws shown in the chart that follows. The throws are measured at the trailing edge of the widest part of the control surface.



To **increase** the control surface throw, move the pushrod to the hole that is closer-in on the control horn on the control surface, or move the pushrod to the hole that is farther out on the servo arm. To decrease the control surface throw, do the opposite.

PREPARE THE MODEL FOR FLYING

Set the Control Throws



❑ 1. Turn on the transmitter and receiver. Be certain the rudder and elevator respond as shown in the chart. If required, use the reversing function in the transmitter to reverse any controls necessary so they respond correctly.

Set up the Bird of Time so it has the following control surface throws:

| | HIGH | LOW |
|-------------------------------------------|---------------|-------------|
| ELEVATOR: (High Rate) Up & Down | 9/16" [15mm] | 3/8" [10mm] |
| RUDDER: Left & Right | 1-1/2" [38mm] | 3/4" [19mm] |

Second to the C.G., the control throws have the greatest effect on the way a model flies. Set the throws as close to these settings as possible. If you have too much control throw the model may respond too quickly. If you do not have enough throw, you may not be able to maneuver the model or have enough control to land it.

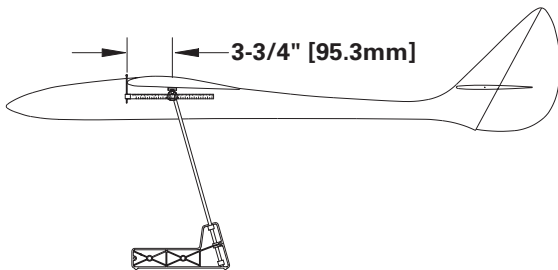
Balance the Model (C.G.)

IMPORTANT:

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

The C.G. (center of gravity) must be checked when the model is ready to fly. All components should be installed.

- ❑ 1. Use a felt-tip pen or narrow strips of tape to mark the balance point on the bottom of the wing 3-3/4" [95.3mm] from the leading edge of the wing on both sides of the fuselage. Install the wing on the model.



- ❑ 2. Lift the model, right side up, at the balance point you marked on the bottom of the wing. We use the Great Planes CG Machine™. If the nose drops the model is nose-heavy and you must add weight to the tail. If the tail drops, the model is tail-heavy and you must add weight to the nose. In most cases you can relocate the receiver and battery to achieve the correct balance without adding additional weight.
- ❑ 3. If additional weight is required to balance the model, use small pieces of Great Planes stick-on weight (GPMQ4485). If weight is required in

the tail, it can be stuck inside the servo compartment. If weight is required in the nose, use epoxy to hold it in place inside the nose.

- ❑ 4. After placing weight on the model where necessary, recheck the C.G. to confirm that it is correct.

Balance the Model Laterally

IMPORTANT: Do not confuse this procedure with "checking the C.G." or "balancing the sailplane fore and aft."

Now that the aircraft is complete, it's time to balance the sailplane laterally (side-to-side).

- ❑ 1. Mount the wing to the fuselage.
- ❑ 2. With the wing level, **carefully** lift the model by the nose and the aft end of the fuselage under the stab (this may require two people). Do this several times.
- ❑ 3. If one wing always drops when you lift the model, that side is heavy. Balance the sailplane by gluing weight inside the other wing tip with epoxy. **A sailplane that has been laterally balanced will track better in straight and level flight, loops and other maneuvers.**

Identify Your Model

No matter if you fly at an AMA sanctioned R/C club site or if you fly somewhere on your own, you should always have your name, address, telephone number and AMA number on or inside your model. It is required at all AMA R/C club flying sites and AMA sanctioned flying events. Fill out the identification tag on page 17 and place it on or inside your model.

Charge the Batteries

Be certain the transmitter and receiver batteries are fully charged. Follow the battery charging instructions that came with your radio control system to charge the batteries. Cycle your batteries if you have not done so recently.

Ground Inspection

Before you fly you should perform one last overall inspection to make sure the model is truly ready to fly and that you haven't overlooked anything. If you are not thoroughly familiar with the operation of R/C models, ask an experienced modeler to perform the inspection. Check to see that you have the radio installed correctly and that all the controls are connected properly. Make certain the rudder and elevators are secure, the pushrods are connected, the controls respond in the correct direction, radio components are securely mounted and the C.G. is correct.

Range Check

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

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

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.

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

FIND A SAFE PLACE TO FLY

The **best** place to fly **any** model is at an AMA chartered club field. Club fields are set up for R/C flying, making your outing safer and more enjoyable. We recommend that you join the AMA and a local club so you can have a safe place to fly and have insurance to cover you in case of a flying accident. The AMA address and telephone number are in the front of this manual.

If there is no club or R/C flying field in your area, find a suitable site that is clear of trees, telephone poles, buildings, towers, busy streets and other obstacles. Since you are not flying at a sanctioned AMA site, be aware that there may be others like yourself who could be flying nearby. If both of your models happen to be on the same frequency, interference will likely cause one or both of the models to crash. An acceptable minimum distance between flying models is five miles, so keep this in mind when searching for a flying site.

In addition to obstacles, it is important to be aware of people who may wander into the area once you begin flying. At AMA club flying sites it is a severe rule infraction to fly over others and this is a good practice if flying elsewhere. R/C models tend to attract onlookers whose numbers can soon multiply, forming small, uncontrolled crowds. Onlookers pose two main problems. First is the danger of actually crashing your model into a person, causing injury. Second is the distraction from those who ask you questions while you are trying to concentrate on flying. To minimize or avoid this problem, have an assistant standing by who can spot people who wander into your flying site (so you can avoid flying over them) and who can perform "crowd control" if people start to gather.

FLYING

IMPORTANT: If you are an inexperienced modeler we strongly urge you to seek the assistance of a competent, experienced R/C pilot to check your model for airworthiness AND to teach you how to fly. No matter how stable or "forgiving" the Bird of Time is, attempting to learn to fly on your own is dangerous and may result in destruction of your model or even injury to yourself and others. Therefore, find an instructor and fly only under his or her guidance and supervision until you have acquired the skills necessary for safe and fully controlled operation of your model.

Takeoff

We recommend flying the Bird of Time when the wind is no greater than ten miles per hour. Less experienced flyers should fly only in calm conditions. Frequently, winds are calm in the early morning and early evening. Often these are the most enjoyable times to fly anyway!

Until you have the Bird of Time properly trimmed for level flight, we recommend having an assistant launch the model instead of launching it yourself. Test glide the model from a gentle hand launch to initially trim the model.

Turn on the transmitter and receiver. Confirm that the transmitter operates the controls by moving the sticks and watching the surfaces respond. Occasionally, sailplanes have been launched with the transmitter or receiver turned off. Connect the model to the winch or high start. We recommend the standard high start (DYFP8301) due to the light weight of this model.

When ready to launch, the assistant should hold the bottom of the fuselage under the wing, then raise the model high above his head with the nose about 45 degrees up and the wings level

(not banked left or right). Point the model **into the wind** with the pilot (*that would be you!*) standing behind the plane. As the assistant releases the model, be immediately ready to make corrections to keep the sailplane flying straight and climbing directly into the wind.

You must be **very** careful about how steeply you allow the model to climb. If the climb is too shallow, you will not get the full height from the winch or high start. If you hold too much up elevator and climb too steeply, you risk “popping off” the high start prematurely and overstressing the wing's structure, possibly snapping the wings.

Flight

The main purpose of the first few flights is to learn how the model behaves and to adjust the trims for level flight. Adjust the elevator trim so the model flies level. It will require some experimentation to determine what airspeed and elevator trim gives the best glide ratio.

Adjust the rudder trim to level the wings. It may take a few minutes to get the trims adjusted, but this should be your first priority once at a comfortable altitude. Continue to fly around, executing turns and making mental notes (or having your assistant take notes for you) of what additional adjustments or C.G. changes may be required to fine tune the model so it flies the way you like.

Landing

Begin the landing approach by flying downwind at an altitude of approximately 20 feet [6 meters]. When the sailplane is approximately 50 to 100 feet [15 to 30 meters] past you, gradually make the “final” 180-degree turn into the wind aligning the sailplane with the runway or landing area. Do not dive the sailplane, as it will pick up too much

speed. Instead, allow the sailplane to establish a gradual descent. Concentrate on keeping it heading into the wind toward the runway. When the plane reaches an altitude of about 3 feet [1 meter], gently apply a little “up elevator” to level the plane, but be careful as too much up elevator will cause it to stall. While holding a slight amount of up elevator the sailplane will slow and descend as it loses flying speed, thus touching-down on the runway.

Best of luck and happy flying!

**22" [64mm]
Servo Cover
Template**

| | | | | | |
|------------------------|-------|---------|-----------------|--------------|------------|
| This model belongs to: | _____ | _____ | _____ | _____ | _____ |
| | Name | Address | City, State Zip | Phone number | AMA number |
| | _____ | _____ | _____ | _____ | _____ |
| | _____ | _____ | _____ | _____ | _____ |
| | _____ | _____ | _____ | _____ | _____ |



| | | |
|-----------|----------|-----------|
| FUTJ50** | Stock # | FUTJ51** |
| 2FR AM | System | 3FR AM |
| R132JE | Receiver | R114H |
| S3003 (2) | Servos | S3003 (2) |
| 27, 72MHz | Band | 27, 72MHz |

Futaba®
Single-Stick
2FR and 3FR
AM Radios

Futaba's 2FR and 3FR not only control aileron and rudder with a single stick — the whole stick assembly is angled slightly to take advantage of the way your thumb moves. The result: a more natural, comfortable feel and easier control. Case design supports correct thumb placement with an "S" curve on the right, and a thumb recess on the left for a better grip. Recesses on the 3FR AM also include a slide switch that gives you proportional control of throttle. All include a jack for in-transmitter recharging.

Great Planes® ElectriFly™ Mini FM Receivers



GPML0044 4-Channel Low Band
72MHz FM Receiver
GPML0045 4-Channel High Band
72MHz FM Receiver

Worried about receiver-transmitter compatibility? Hook up an economical ElectriFly Mini FM receiver, and it will automatically select the circuitry compatible with your Futaba®, JR®, Hitec®, or Airtronics® "Z" radios. Innovative circuitry makes them a match for most popular systems — their size, weight and range* make them perfect for today's small electrics. Designed for park, slow and indoor flyers, Mini FM Receivers feature SMT components for maximum dependability in an ultralight, compact unit. Require a short, single-conversion Futaba FM crystal, available separately. 1-year warranty.

Futaba® S3106
Micro
Servo



FUTM0041

It measures just 0.85" x 0.43" x 0.78", but the S3106 delivers excellent power and speed for its small size and light, 0.34 oz. weight. Torque: 16.6 oz-in (4.8V); 20.8 oz-in (6V). 1-year warranty.

Dynaflite™ Daydream™
2M Sailplane Kit
DYFA2018



Easy assembly and all-wood quality are Dynaflite trademarks that help make the 78" span Daydream an ideal model for 2-meter sailplane piloting. The one-piece, 78" wing with its Selig S3021 airfoil delivers exceptional lift and stability. The oversized rudder adds to its maneuverability and works with the Selig S3021 airfoil to insure docile flight. All-balsa construction makes the Daydream very durable, and the only carving to be done is shaping the nose block and leading edges. Requires 2-channel radio with 2 standard or mini servos and 2+ rolls of MonoKote®.

BUILDING NOTES

Kit Purchased Date: _____

Date Construction Finished: _____

Where Purchased: _____

Finished Weight: _____

Date Construction Started: _____

Date of First Flight: _____

FLIGHT LOG

