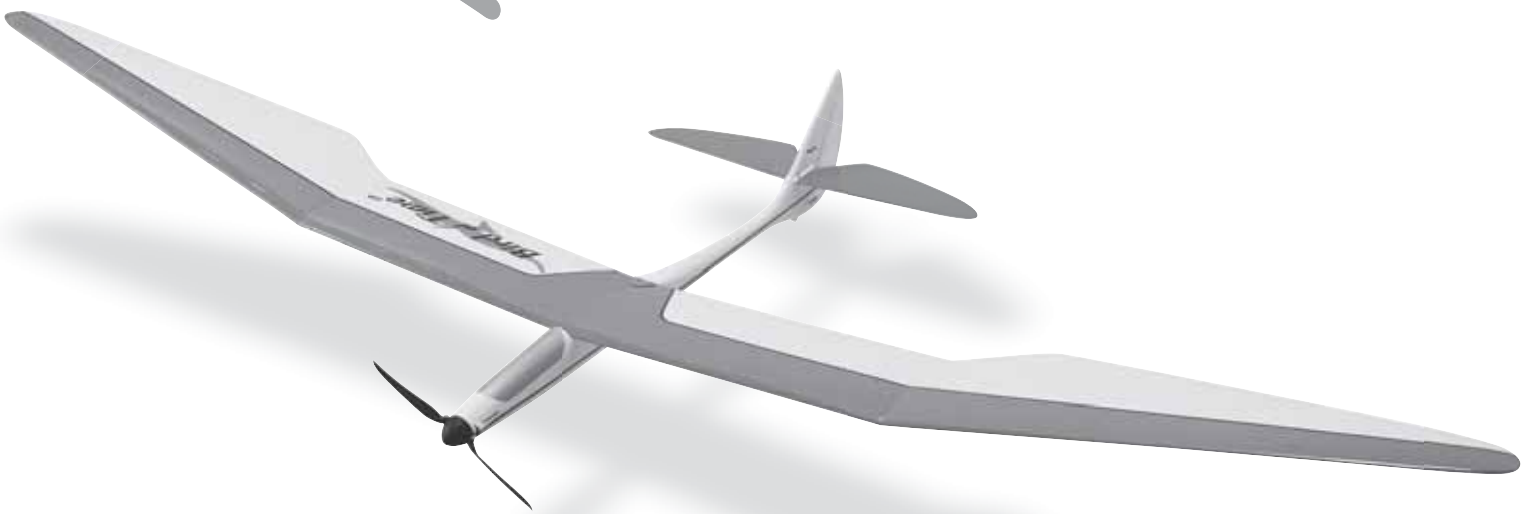
Bird of Time EP ARF



MANUAL ADDENDUM

This manual addendum provides additional instructions for assembling the power system onto the Bird of Time. Please read through this addendum before you start the assembly of the Bird of Time as it contains information regarding some steps in the manual booklet. Follow the steps in the manual booklet as printed unless noted otherwise in this addendum.

SPECIFICATIONS

Wingspan: 118 in [2997 mm]
Length: 49 in [1245 mm]
Weight: 4.5 – 4.75 lb [2040 – 2150 g]

Wing Area: 1050 in^2 [67.7 dm^2]
Wing Loading: 10 oz/ft^2 [31 g/dm^2]

Radio: 3+ channel radio
Motor: Great Planes RimFire .32
ESC: 60A w/BEC
Battery: 14.8V 3300 – 3600mAh

WARRANTY

Great Planes® Model Manufacturing Co. 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 Great Planes' liability exceed the original cost of the purchased kit.** Further, Great Planes reserves the right to change or modify this warranty without notice.

In that Great Planes 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.

To make a warranty claim, go to: greatplanes.com/support

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

Dynaflite Series by Great Planes

FLIGHT EQUIPMENT

SERVOS: On pages 3-4 in the manual booklet there are servos recommended which have been discontinued and are no longer available. Listed here are current model servos recommended for the Bird of Time. Other models of similar size and torque rating will also work.

Futaba S9001 Aircraft Coreless BB Servo (FUTM0075) -Rudder (54 oz-in)

Futaba S3154 Digital Micro High-Torque Servo (FUTM0654) -Elevator (21 oz-in)

RECEIVER: Most current 2.4GHz receivers are lightweight and will fit inside the Bird of Time fuselage. A receiver 3/4" x 1-1/2" [19x38mm] or smaller will fit (thickness x width).

TRANSMITTER: A 3+ channel transmitter is required for the Bird of Time EP. **NOTE:** ***We recommend using a transmitter with programmable mixing. However, it is not required. The purpose of the mix is to add some down elevator when throttle is applied to reduce the climbing tendency under power.***

ADDITIONAL ITEMS: One servo extension wire is needed for the elevator servo.

Tactic Servo Extension 24" Futaba J (TACM2200)

Self-adhesive hook and loop material is needed to secure the battery, receiver, and ESC into the fuselage.

Great Planes Hook & Loop 1x6" (2) (GPMQ4480)

NOTE: ***The high start and receiver battery listed in the manual booklet are no longer needed.***

MOTOR AND ESC RECOMMENDATIONS: The Great Planes RimFire .32 motor is recommended for the Bird of Time EP. The RimFire .32 will provide ample power to climb quickly to altitude. The Hitec Energy Sport 60A ESC is a low profile speed controller with BEC that we recommend for this setup. Stock numbers are provided here:

Great Planes RimFire .32 42-50-800 Outrunner Brushless (GPMG4700)

Hitec Energy Sport 60 Amp 2-6S 5-18 NiMH 5.5V 5A (HRCM9049)

BATTERY RECOMMENDATIONS: The recommended battery size is 14.8V 3300-3600mAh. This voltage and capacity along with the RimFire .32 motor and 13.5x7 prop will provide 10-12 climbs to altitude with a near vertical climb angle at full throttle. We found that the 3600mAh pack will balance the plane at the recommended C.G. with little or no added ballast when using the recommended motor and ESC.

NOTE: ***Space inside the battery compartment is limited. If an ESC larger than the recommended ESC is used, a smaller battery may be needed in order for both to fit into the compartment. OR, the ESC can be located further aft requiring motor lead or receiver lead extensions, paying attention to proper C.G. location. The FlightPower 3600mAh battery will fit with the recommended Hitec ESC.***

FlightPower LiPo FP30 4S 14.8V 3350mAh 30C Star Plug (FPWP3334)
Dimensions: 5.24 x 1.58 x 1.06" [133 x 40 x 27mm]
Weight: 12.56oz [356g]

FlightPower LiPo FP50 4S 14.8V 3600mAh 50C Star Plug (FPWP5364]
Dimensions: 5.12 x 1.34 x 1.50" [130 x 34 x 38mm]
Weight: 14.11oz [400g]

CHARGER: A charger capable of charging a 4S LiPo is required. An economical Onyx charger and a high end Triton charger are recommended here.

Duratrax Onyx 225 AC/DC Advanced Charger (DTXP4225)

Great Planes ElectriFly Triton2 EQ AC/DC Charger (GPMM3156)

REPLACEMENT PARTS LIST

This is the complete updated parts list for the Bird of Time EP.

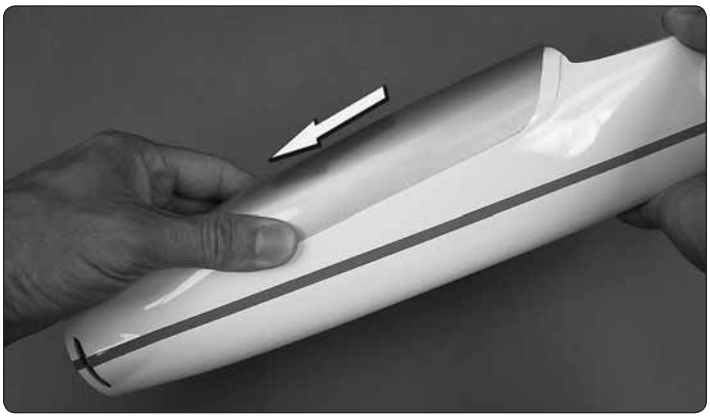
GPMA5301 ...Wing
GPMA5302 ...Tail
GPMA5305 ...Fuselage
GPMA5306 ...Canopy
GPMA5307 ...Propeller Adapter
GPMA5308 ...Spinner Set
GPMA5309 ...Decals
GPMA5310 ...Complete Folding Propeller Set
FLZA6672 ....13.5x7 Propeller Blades Only (2)

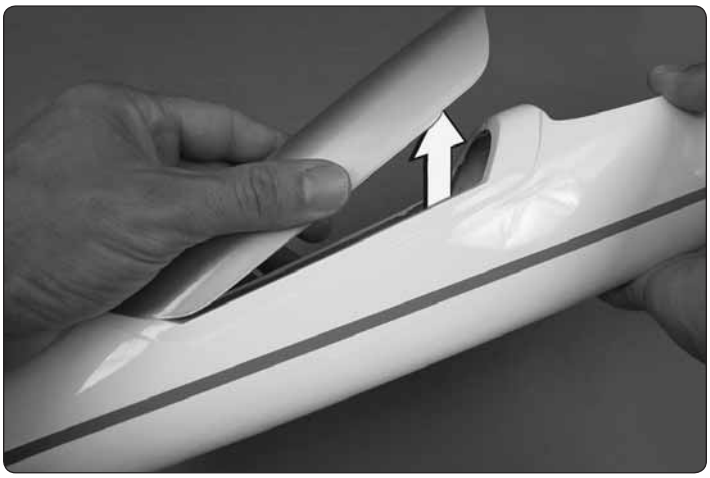
KIT CONTENTS

NOTE: The kit contents on page 6 of the manual booklet list parts that are not included with this Bird of Time EP. Parts listed in the booklet but are not included in this kit:

Tow Hook Block
4-40 Blind Nuts (4)
4-40 Tow Hook
Bag of Weight Shot

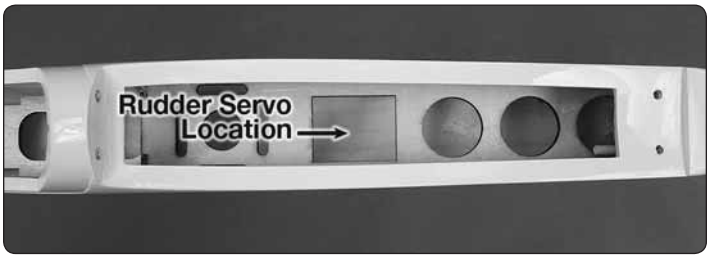
ADDENDUM INSTRUCTIONS





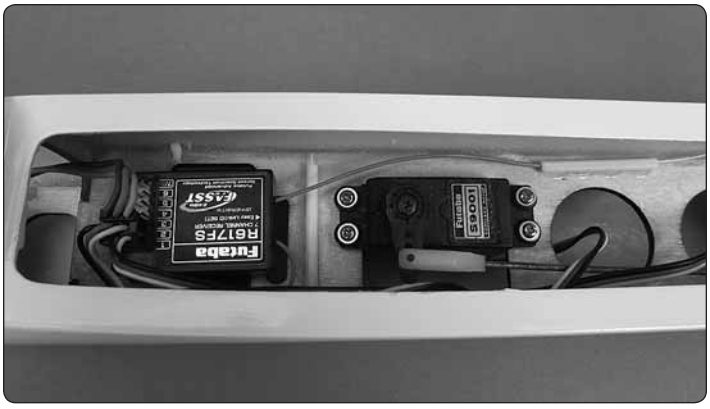
1. The canopy design has been updated to be easily removable for battery access. The entire ***Final Assembly*** section in the manual booklet (pages 12-13) can be skipped. To remove the updated canopy, slide it forward and then lift up on the aft end.

2. Skip the section ***Install the Tow Hook Mount*** in the manual booklet on page 8. The tow hook parts are not included with the Bird of Time EP.



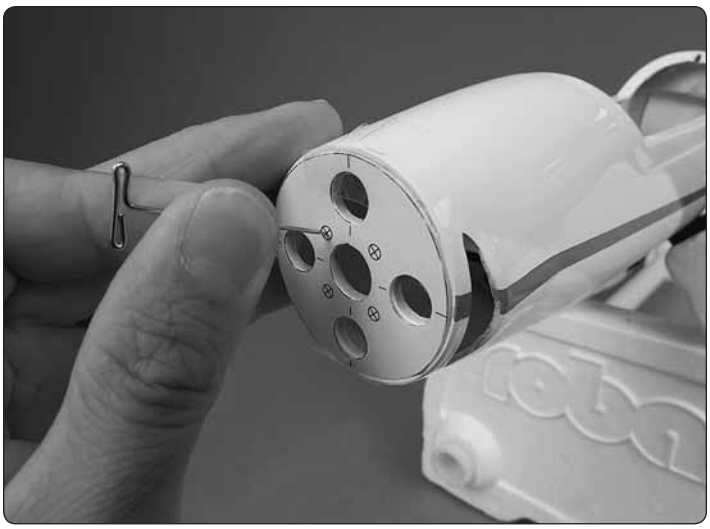
3. In the section ***Install the Rudder*** on page 9 of the manual booklet, the rudder servo location is now located beneath the wing saddle (previously mounted in the fuselage nose). The installation procedure for the servo and pushrod hardware remain the same.

4. In the section ***Install the Elevator Linkage*** beginning on page 10 of the manual booklet, a CS-5 micro servo is recommended. However, this model servo is no longer available. We recommend the Futaba S3154 as a substitute (see recommendations in the ***Flight Equipment*** section of this addendum). The installation procedure for the servo and pushrod hardware remains the same.



5. In the section ***Install the Receiver*** on page 12 of the manual booklet, the receiver has been moved from the nose of the fuselage to just in front of the rudder servo. Shown here, the receiver is secured to the tray using self-adhesive hook-and-loop material (not included, use GPMQ4480).

6. Two motor mounting templates are provided on the other side of this addendum. One is for the recommended RimFire .32 motor and the other is left blank for use with other motors. Photocopy, then cut out the template and temporarily tape it to the firewall. Accuracy is important in this step to ensure that the motor, and therefore spinner too, are properly centered on the firewall.



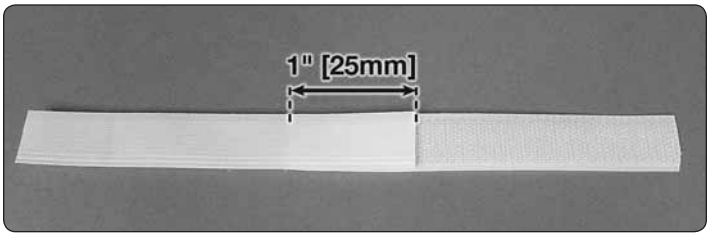
7. Use something with a sharp tip such as a T-pin to make indentations onto the firewall for the motor mounting holes.

8. Use a small drill bit to make pilot holes at the marks you made. Then, finish drilling the holes with a 1/8” [3.2mm] bit.

9. Fit the motor into the fuselage and up to the firewall. Install the motor using the included four 3x10mm machine screws, four 3mm flat washers, and threadlocking compound. You will likely need to use a tool inserted through one of the firewall cooling holes as leverage in order to align the motor mounting holes with the holes in the firewall. Take care when doing this as to not damage the exposed coils in the motor.

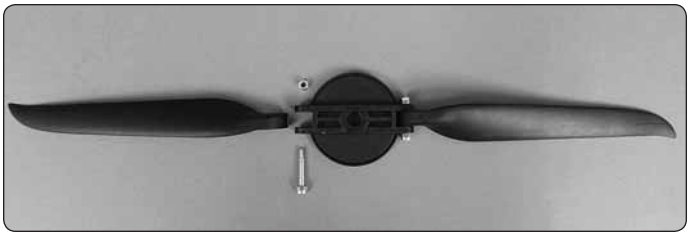
10. Use sandpaper on the inside of the fiberglass fuselage where you plan to install the ESC. Clean the sanded area with a paper towel dampened with alcohol. Mix up a small batch of 6-minute epoxy and apply a thin coating onto the side of the fuselage for the ESC as well as some along the battery tray as shown. Allow the epoxy to completely harden before continuing.

11. Connect your ESC to the motor leads. Use self-adhesive hook and loop material (not included) to affix your ESC to the fuselage side. Be sure that the motor wires are not contacting the motor.

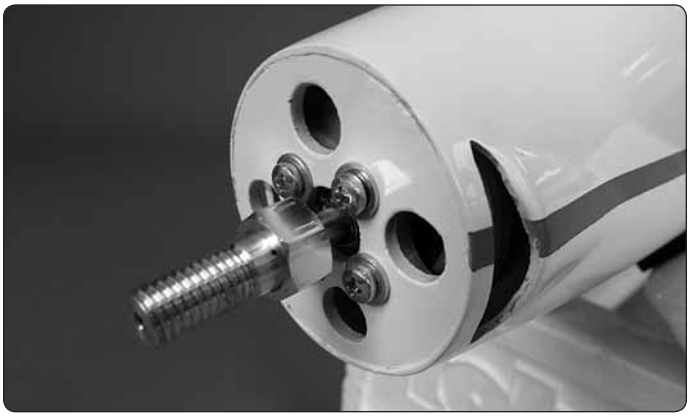


12. Make a battery strap by cutting a length long enough to wrap around your battery and the battery tray. Overlap the mating ends by 1” [25.4mm] and feed the strap around the battery tray. Apply some self-adhesive hook and loop material to the tray and to your battery and test fit it in place. **NOTE:** If your battery and ESC do not fit together as shown here, you may need to locate your ESC aft of the battery. This may require you to extend (or make extensions) the motor leads as necessary.

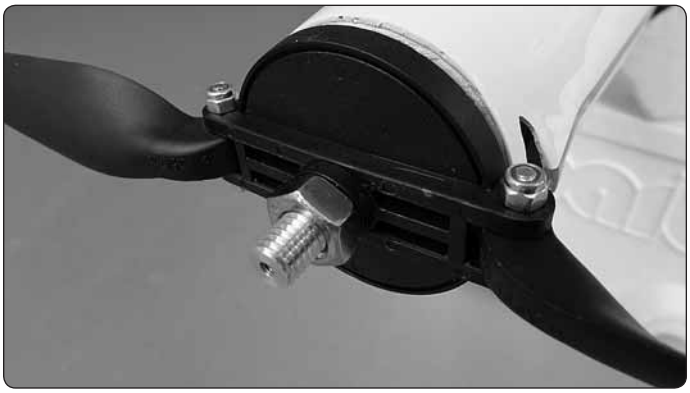
13. Before installing the propeller in the next step, take this time to test the operation of the motor using your radio system. Ensure that the motor is rotating in the correct direction and the ESC brake function is turned ON. Swap the position of any two of the three motor wires connected to the ESC if the motor is rotating in the incorrect direction (the motor should rotate counter clockwise when viewed from the front). This is also a good time to set up and test your throttle fail safe function. Refer to your radio system manual for fail safe programming instructions.



14. Unscrew the nylon locknuts from the folding propeller blade pins and slide the pins out from the spinner hub. Fit the propeller blades into the hub and then reinstall the pins. The locknuts should be just tight enough so the blades still rotate freely on the pins.



15. Fit the collet prop adapter onto the motor shaft. Slide it fully onto the motor. Fit the hexagonal collar onto the collet adapter.



16. Put the spinner backplate onto the collet and tighten it down with the nylon spinner washer and prop nut. Install the spinner cone using the included 2.5 x 22mm flat head machine screw.

BALANCE THE MODEL (C.G.)

The balancing instructions in the manual booklet on page 14 remain the same. Ideally, the recommended balance point can be achieved by shifting the flight battery (and/or ESC and receiver) forward or aft. Adding ballast to achieve the correct balance should be a last resort. With the recommended components (motor, battery, and ESC), the Bird of Time EP should balance very near the recommended C.G. point.

TAKEOFF

In the manual booklet on pages 16-17 the text refers to launching the Bird of Time using a winch or high start. Obviously with the motor installed, these launching methods are no longer necessary. The recommended RimFire .32 and included prop provides an abundance of power so launching the glider is very easy. With your (or your assistant's) hands and face clear of the prop, hold the glider over your head by the fuselage near the balancing point. Throttle up and give the glider a gentle push into the wind with a slight upward angle. The thrust of the power system should pull the glider forward with authority and to a high altitude quickly.

If this is your first flight, be prepared to make any corrections that might be necessary if the plane is particularly out of trim. Gain some altitude and then make your trim setting changes if need be. You will also find that the glider has a tendency to pitch up with throttle. This cannot be trimmed out with the elevator trim setting. You will either need to compensate with elevator stick input to reduce the climb angle whenever the motor is powered, or program your transmitter to mix in some down elevator with throttle input. Once you've reached a comfortable altitude, throttle down and level the glider. The recommended power system should provide you with enough motor run time to get 10-12 climbs to altitude.

LANDING

The landing procedure has not changed from the manual booklet on page 17. Once you are lined up for your final landing approach, be sure to power down the motor and come in gradually as the plane sinks. Even with the added weight of the motor and battery, expect a long glide. Save some battery for the end of your first flight to allow you to get a feeling for the glide distance. If you are going to overshoot your landing area, you will have motor power to climb for another go around.

ELECTRIC MOTOR & BATTERY SAFETY PRECAUTIONS

WARNING: Once the motor batteries are connected, the electric motor can start at any time. Make sure the fail-safe is set on your radio to prevent the motor from starting if the signal is lost.

WARNING: Read the entire instruction sheet included with your motor batteries. Failure to follow the instructions could cause permanent damage to the battery and its surroundings and cause bodily harm!

ALWAYS remove the propeller if the motor batteries will be connected when working on your plane.

ALWAYS remove the motor batteries when charging.

ALWAYS follow the charging instructions included with your charger for charging LiPo batteries. LiPo batteries can cause serious damage if misused.

ALWAYS switch on the transmitter before connecting the motor battery.

ALWAYS unplug the motor batteries as soon as your flight is over and ***before*** turning off your transmitter.

ALWAYS use a LiPo-approved charger.

ALWAYS set the charger's output volts to match the battery volts.

ALWAYS charge a LiPo battery in a fireproof location.

ALWAYS charge through the "charge" lead.

ALWAYS KEEP OUT OF THE REACH OF CHILDREN.

ALWAYS remove the batteries from the plane after a crash. Set them aside in a safe location for at least 20 minutes. If the batteries are damaged in the crash, they could catch fire. If the battery starts to swell, quickly move the battery to a safe location, preferably outside. Place it in a bucket, covering the battery with sand. Never use water to try and put out a LiPo fire.

NEVER touch the motor during or right after operation. The motor gets HOT!

NEVER switch off the transmitter with the motor batteries plugged in.

NEVER use a NiCd/NiMH peak charger to charge a LiPo battery.

NEVER charge in excess of 4.20V per cell unless the battery is rated for a higher voltage.

NEVER charge through the "discharge" lead.

NEVER charge at currents greater than 1C unless the battery is rated for a higher charge rate.

NEVER trickle-charge a LiPo battery.

NEVER allow the battery temperature to exceed 150 degrees F (65° C).

NEVER disassemble or modify the pack wiring in any way or puncture the cells.

NEVER discharge below 2.7V per cell.

NEVER place the battery or charger on combustible materials or leave it unattended during charge or discharge.

NEVER charge the batteries in the plane.

ALWAYS get help from an experienced pilot when learning to operate motors.

ALWAYS use safety glasses when running motors.

NEVER run the motor in an area of loose gravel or sand; the propeller may throw such material in your face or eyes.

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

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

NEVER leave the LiPo battery unattended while charging. If the LiPo battery becomes hot or starts to swell, stop charging and remove the battery to a safe location.

PHOTOCOPY & CUT OUT