Top Flite Models Champaign, IL Telephone (217) 398-8970, Ext. 5 airsupport@top-flite.com

P-47D THUNDERBOLT

GOLD ARF EDITION™

WARRANTY

Top Flite Models 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 Top Flite's liability exceed the original cost of the purchased kit.** Further, Top Flite reserves the right to change or modify this warranty without notice.

In that Top Flite has no control over the final assembly or material used for final assembly, no liability shall be assumed nor accepted for any damage resulting from the use by the user of the final user-assembled product. By the act of using the user-assembled product, the user accepts all resulting liability.

If the buyer is not prepared to accept the liability associated with the use of this product, the buyer is advised to return this kit immediately in new and unused condition to the place of purchase.

To make a warranty claim send the defective part or item to Hobby Services at this address:

Hobby Services
3002 N. Apollo Dr. Suite 1
Champaign IL 61822 USA

Include a letter stating your name, return shipping address, as much contact information as possible (daytime telephone number, fax number, e-mail address), a detailed description of the problem and a photocopy of the purchase receipt. Upon receipt of the package the problem will be evaluated as quickly as possible.

SPECIFICATIONS

Wingspan:	63 in [1600mm]
Wing Area:	730 sq in [46.5 dm^2]
Weight:	9.5–10.5 lb [3970–4540 g]
Wing Loading:	30–33 oz/sq ft [91–101 g/dm^2]
Length:	56 in [1420mm]
Radio:	6+ channel with 8 servos
Engine:	.60–.91 cu in [10–15cc] two-stroke, .90–1.20 cu in [15–20cc] four-stroke

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

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TOPA0955Mnl V1.0

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INTRODUCTION

Following the great success of the Top Flite P-47 .60-sized kit comes the same beautiful model in ARF form! The sky is the limit for the amount of additional detail that could be added during the building process to make the P-47 a model even the most serious scale-minded builder could appreciate. The model assembles in as little as 15-20 hours, with time consuming painting tasks expertly complete out of the box.

For the latest technical updates or manual corrections to the P-47 ARF, visit the ***Top Flite*** web site at www.top-flite.com. Open the "Airplanes" link, then select the P-47 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.

AMA

We urge you to join the AMA (Academy of Model Aeronautics) and a local R/C club. The AMA is the governing body of model aviation and membership is required to fly at AMA clubs. Though joining the AMA provides many benefits, one of the primary reasons to join is liability protection. Coverage is not limited to flying at contests or on the club field. It even applies to flying at public demonstrations and air shows. Failure to comply with the Safety Code (excerpts printed in the back of the manual) may endanger insurance coverage. Additionally, training programs and instructors are available at AMA club sites to help you get started the right way. There are over 2,500 AMA chartered clubs across the country. Contact the AMA at the address or toll-free phone number below:

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

IMPORTANT!!! Two of the most important things you can do to preserve the radio controlled aircraft hobby are to avoid flying near full-scale aircraft and avoid flying near or over groups of people.

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

1. Your P-47 ARF should not be considered a toy, but rather a sophisticated, working model that functions very much like a full-size airplane. Because of its performance capabilities, the P-47, if not assembled and operated correctly, could possibly cause injury to yourself or spectators and damage to property.

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

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

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

5. You must correctly install all R/C and other components so that the model operates 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 connectors often and replace them if they show any signs of wear or fatigue.

7. If you are not an experienced pilot or 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 a club, your local hobby shop has information about clubs in your area whose membership includes experienced pilots.

8. While this kit has been flight tested to exceed normal use, if the plane will be used for extremely high stress flying, such as racing, or if an engine larger than one in the recommended range is used, the modeler is responsible for taking steps to reinforce the high stress points and/or substituting hardware more suitable for the increased stress.

We, as the kit manufacturer, provide you with a top quality, thoroughly tested 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.

Before starting to build, compare the parts in this model with the Parts List and note any missing parts. Also inspect all parts to make sure they are of acceptable quality. If any parts are missing, broken or defective, or if you have any questions about building or flying this airplane, please contact ***Top Flite*** at the address or telephone number below. If requesting replacement parts, please provide the full model name (P-47 ARF) and the part numbers as listed in the Parts List.

Top Flite Product Support
3002 N Apollo Drive Suite 1
Champaign, IL 61822

Telephone: (217) 398-8970
Fax: (217) 398-7721
E-mail: productsupport@top-flite.com

DECISIONS YOU MUST MAKE

This is a partial list of items required to finish the P-47 ARF that may require planning or decision making before starting to build. Order numbers are provided in parentheses.

RADIO EQUIPMENT

A 6-channel radio system such as a Futaba® 6EXAS with a standard receiver and seven standard size servos with a minimum torque of 50 oz-in [3.6 kg-cm] are required for the control surfaces of the P-47 ARF. When installing the included mechanical retracts, a 180 degree retract servo will also be required. If you will be installing optional Robart pneumatic retracts, a micro servo will be required to operate the air valve. One standard torque servo such as an S3003 is required for the throttle. Two 24" [610mm] servo extensions (aileron servos), three 6" [152mm] servo extensions (aileron, flap and landing gear) and two Y-harnesses (aileron and flap servos) are also required. A receiver battery pack with a minimum capacity of 1000mAh is recommended. Order numbers are provided below:

- ❏ Futaba S9001 Servo Aircraft Coreless BB (FUTM0075)
- ❏ Futaba S136G Compact Retract Servo (FUTM0670)
- ❏ Futaba S3115 Micro Precision Servo (FUTM0415)
- ❏ Futaba S3003 Servo Standard (FUTM0031)
- ❏ Hobbico® Extension 24" Futaba J (HCAM2200)
- ❏ Hobbico Extension 6" Futaba J (HCAM2000)
- ❏ Futaba 6" Dual Servo Extension J (FUTM4130)
- ❏ Futaba NR4RB Receiver NiCd 4.8V 1000mAh J (FUTM1380)

ENGINE RECOMMENDATIONS

A .60-.91 cu in [10-15cc] two-stroke or .90-1.20 [15-20cc] four-stroke engine is required. An O.S.® FS-91 Surpass™ II four-stroke engine installation is shown in this manual.

- ❏ O.S. FS-91 II Surpass (OSMG0896)
- ❏ O.S. .61 FX ABL (OSMG0561)

LANDING GEAR OPTIONS

The P-47 ARF includes mechanical retracts. Optional pneumatic retracts can also be installed. Part numbers are provided below:

- ❏ Robart 605HD 90 Degree Mains w/3/16" Wire (ROBQ0005)
- ❏ Robart 188VR Standard Air Control Kit (ROBQ2302)
- ❏ Robart 190 Air Line Quick Disconnects (ROBQ2395)

SCALE COMPETITION

Though the ***Top Flite*** P-47 ARF may not have the same level of detail as an "all-out" scratch-built competition model, it is a scale model nonetheless and is therefore eligible to compete in the *Fun Scale* class in AMA competition (we receive many favorable reports of ***Top Flite*** models in scale competition!).

To receive the five points for scale documentation, the only proof required that a full size aircraft of this type in your paint/markings scheme did exist is a single sheet such as a kit box cover from a plastic model, a photo, or a profile painting, etc. If the photo is in black and white other written documentation of color must be provided. Contact the AMA for a rule book with full details.

If you would like photos of the full-size P-47 for scale documentation, or if you would like to study the photos to add more scale details, photo packs are available from:

Bob's Aircraft Documentation
3114 Yukon Ave
Costa Mesa, CA 92626

Phone: (714) 979-8058
Fax: (714) 979-7279
www.bobsairdoc.com

ADDITIONAL ITEMS REQUIRED

HARDWARE AND ACCESSORIES

In addition to the items listed in the **"Decisions You Must Make"** section, following is the list of hardware and accessories required to finish the P-47 ARF. Order numbers are provided in parentheses.

- ❏ R/C foam rubber (1/4" [6mm] - HCAQ1000, or 1/2" [13mm] - HCAQ1050)
- ❏ 3' [900mm] standard silicone fuel tubing (GPMQ4131)

ADHESIVES AND BUILDING SUPPLIES

In addition to common household tools (screw drivers, drill, etc.), this is the "short list" of the most important items required to build the P-47 ARF. *We recommend **Great Planes Pro**™ CA and Epoxy glue.*

- ❏ 1/2 oz. [15g] Thin Pro CA (GPMR6001)
- ❏ 1/2 oz. [15g] Medium Pro CA+ (GPMR6007)
- ❏ Pro 6-minute epoxy (GPMR6045)
- ❏ Pro 30-minute epoxy (GPMR6047)
- ❏ Drill bits: 1/16" [1.6mm], 5/64" [2mm], 3/32" [2.4mm], 3/16" [4.8mm]
- ❏ 8-32 tap and drill set (GPMR8103)
- ❏ Great Planes Pro Threadlocker (GPMR6060)
- ❏ #1 Hobby knife (HCAR0105)
- ❏ #11 blades (5-pack, HCAR0211)
- ❏ Medium T-pins (100, HCAR5150)
- ❏ Masking tape (TOPR8018)
- ❏ Denatured alcohol (for epoxy clean up)
- ❏ Panel Line Pen (TOPQ2510)
- ❏ 220-grit sandpaper
- ❏ Petroleum jelly or oil
- ❏ 4 oz. J&Z R/C-56 Glue (JOZR5007)

OPTIONAL SUPPLIES AND TOOLS

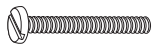
Here is a list of optional tools mentioned in the manual that will help you build the P-47 ARF.

- ❏ 21st Century® sealing iron (COVR2700)
- ❏ 21st Century iron cover (COVR2702)
- ❏ 21st Century trim seal iron (COVR2750)
- ❏ 1/2 oz. [15g] Thick Pro CA- (GPMR6013)
- ❏ Small metal file
- ❏ Stick-on segmented lead weights (GPMQ4485)
- ❏ 2 oz. [57g] spray CA activator (GPMR6035)
- ❏ 4 oz. [113g] aerosol CA activator (GPMR6034)
- ❏ CA applicator tips (HCAR3780)
- ❏ CA debonder (GPMR6039)
- ❏ Epoxy brushes 6, (GPMR8060)
- ❏ Mixing sticks (GPMR8055)
- ❏ Mixing cups (GPMR8056)
- ❏ Pliers with wire cutter (HCAR0630)
- ❏ Compressed Air 10 oz (TAEC1060)
- ❏ Microballoons (TOPR1090)
- ❏ Ernst Charge Receptacle Futaba J (ERNM3001)
- ❏ Rotary tool such as Dremel
- ❏ Rotary tool reinforced cut-off wheel (GPMR8020)
- ❏ Servo horn drill (HCAR0698)
- ❏ Hobby Heat™ micro torch (HCAR0750)
- ❏ Dead Center™ Engine Mount Hole Locator (GPMR8130)
- ❏ AccuThrow™ Deflection Gauge (GPMR2405)
- ❏ CG Machine™ (GPMR2400)
- ❏ Precision Magnetic Prop Balancer (TOPQ5700)
- ❏ Hobbico Flexible 18" Ruler Stainless Steel (HCAR0460)
- ❏ Hobbico Pin Vise 1/16 Collet w/6 Bits (HCAR0696)
- ❏ Hobbico 8-Piece Ball Tip Hex L Wrench SAE (HCAR0520)
- ❏ Hobbico 7-Piece Ball Tip Hex L Wrench Metric (HCAR0521)
- ❏ Great Planes Precision Prop Reamer Standard (GPMQ5006)
- ❏ Great Planes Precision Prop Reamer Metric (GPMQ5007)
- ❏ Great Planes Clevis Installation Tool (GPMR8030)
- ❏ X-Acto Extra Hands Double Clip (XACR4214)

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.

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

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

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

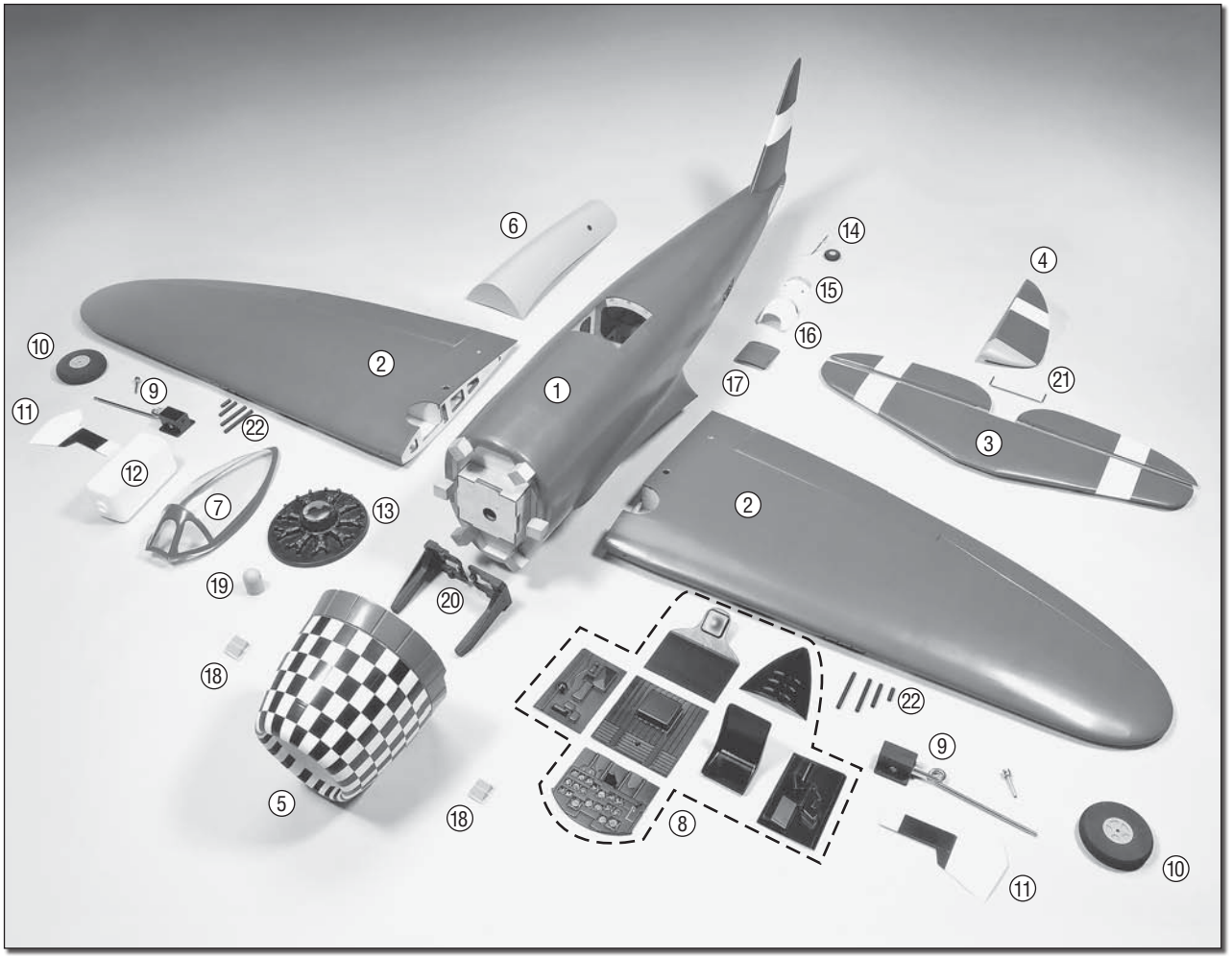
KIT INSPECTION

Before starting to build, take an inventory of this kit to make sure it is complete, and inspect the 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 **Product Support**. When reporting defective or missing parts, use the part names exactly as they are written in the Kit Contents list.

Top Flite Product Support
3002 N Apollo Drive, Suite 1
Champaign, IL 61822

Telephone: (217) 398-8970, ext. 5
Fax: (217) 398-7721
E-mail: airsupport@top-flite.com

KIT CONTENTS



1 - Fuselage
2 - Left and right wing panel
3 - Stabilizer with left and right elevator
4 - Rudder
5 - Cowl
6 - Belly pan
7 - Canopy
8 - Cockpit components
9 - Retractable landing gear and axle
10 - Wheels
11 - Landing gear doors
12 - Fuel tank
13 - Dummy engine
14 - Tail wheel
15 - Tail wheel cover
16 - Lower scoop
17 - Side scoops
18 - Forward scoops
19 - Spinner
20 - Engine mount
21 - Elevator joiner wire
22 - Machine guns

ORDERING REPLACEMENT PARTS

Replacement parts for the ***Top Flite*** P-47 ARF are available using the order numbers in the **Replacement Parts List** that follows. The fastest, most economical service can be provided by your hobby dealer or mail-order company.

To locate a hobby dealer, visit the Hobbico web site at www.hobbico.com. Choose "Where to Buy" at the bottom of the menu on the left side of the page. Follow the instructions provided on the page to locate a U.S., Canadian or International dealer. If a hobby shop is not available, replacement parts may also be ordered from **Tower Hobbies**® at www.towerhobbies.com, or by calling toll free (800) 637-6050.

Parts may also be ordered directly from Hobby Services by calling (217) 398-0007, or via facsimile at (217) 398-7721, but full retail prices and shipping and handling charges will apply. Illinois and Nevada residents will also be charged sales tax. If ordering via fax, include a Visa® or MasterCard® number and expiration date for payment.

Mail parts orders and payments by personal check to:

Hobby Services
3002 N Apollo Dr., Suite 1
Champaign IL 61822

Be certain to specify the order number exactly as listed in the **Replacement Parts List**. Payment by credit card or personal check only; no C.O.D.

If additional assistance is required for any reason contact Product Support by e-mail at

productsupport@top-flite.com,

or by telephone at (217) 398-8970.

REPLACEMENT PARTS LIST

Order Number	Description	How to purchase
	Missing pieces	Contact Product Support
	Instruction manual	
	Full-size plans	Not available
TOPA1782	Wing Set T/F P-47 ARF	Contact your hobby supplier to purchase these items
TOPA1783	Fuselage T/F P-47 ARF	
TOPA1784	Tail Set T/F P-47 ARF	
TOPA1785	Cowl T/F P-47 ARF	
TOPA1786	Canopy T/F P-47 ARF	
TOPA1787	Decals T/F P-47 ARF	
TOPA1788	Dummy Engine T/F P-47 ARF	
TOPA1789	Wire Landing Gear Set T/F P-47 ARF	
TOPA1790	Spinner T/F P-47 ARF	
TOPA1791	Gear Doors T/F P-47 ARF	
TOPA1792	Belly Pan T/F P-47 ARF	

PREPARATIONS

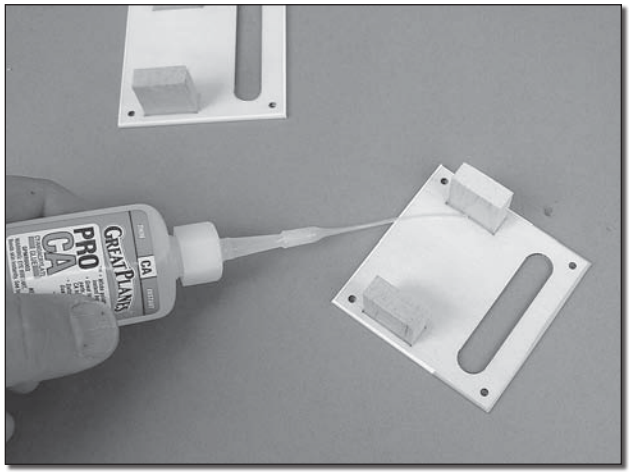
❏ 1. If you have not done so already, remove the major parts of the kit from the box and inspect for damage. If any parts are damaged or missing, contact Product Support at the address or telephone number listed in the ***Kit Inspection*** section on page 5.

❏ 2. Use a covering iron with a covering sock on high heat to tighten the covering if necessary. Apply pressure over sheeted areas to **thoroughly** bond the covering to the wood.

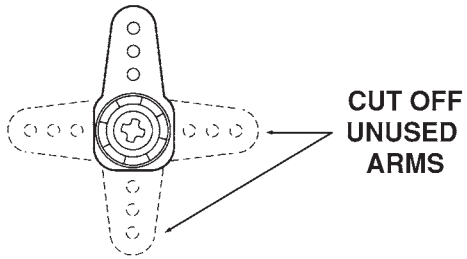
ASSEMBLE THE WING

MOUNT THE SERVOS

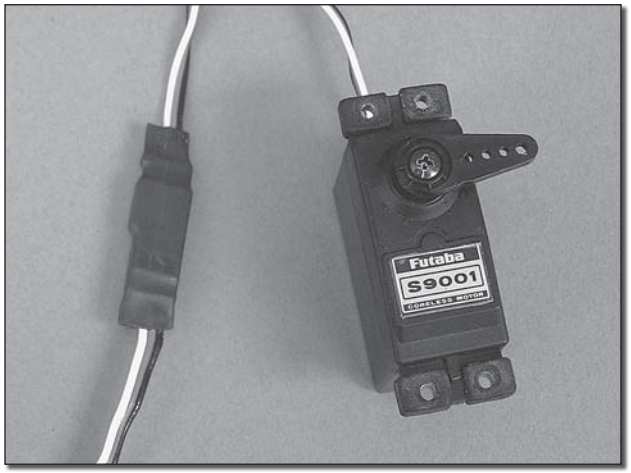
Before completing this section, confirm that the servos that you will be using will properly fit between the servo mounting block locations on the aileron and flap servo hatch covers. Make adjustments as necessary for your brand of servos. The block locations shown in this section will fit a standard size Futaba brand servo.



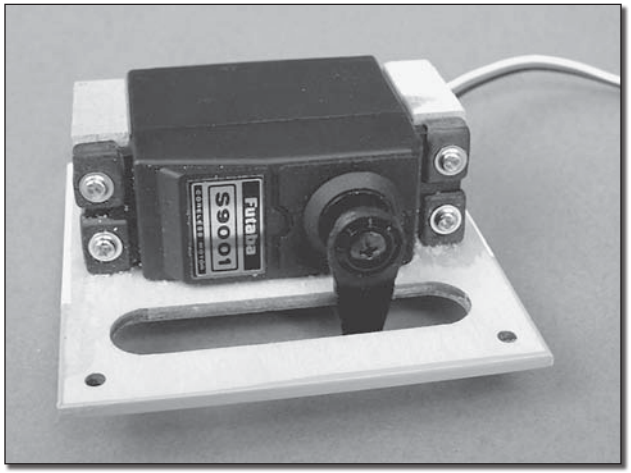
❑ ❑ 1. Remove the tape holding the aileron and flap covers to the wing. The servo mounting blocks are pre-attached to the covers. To assure the blocks have been adequately glued, apply a few drops of thin CA to each of the blocks.



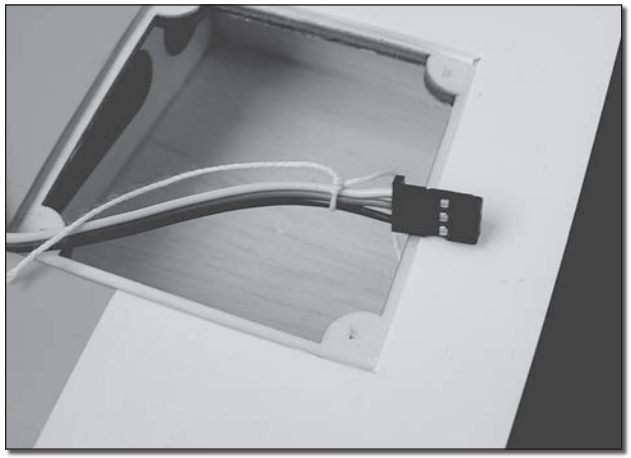
❑ ❑ 2. Cut three arms from a four-armed servo arm included with the aileron servo. Enlarge the outer hole of the remaining arm with a 5/64" [2mm] drill bit.



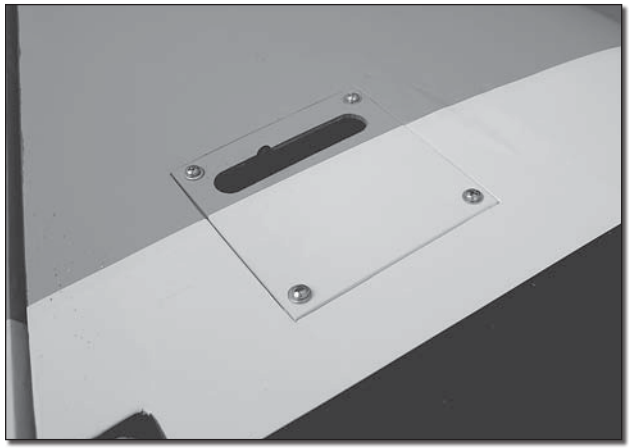
❑ ❑ 3. Attach a 24" [610mm] servo extension to each aileron servo and secure the connector using tape or heat shrink tubing (not included). Center the servos with your radio system and install the servo arm to the servo perpendicular to the servo case as shown. Be sure to reinstall the servo arm screw into the servo.



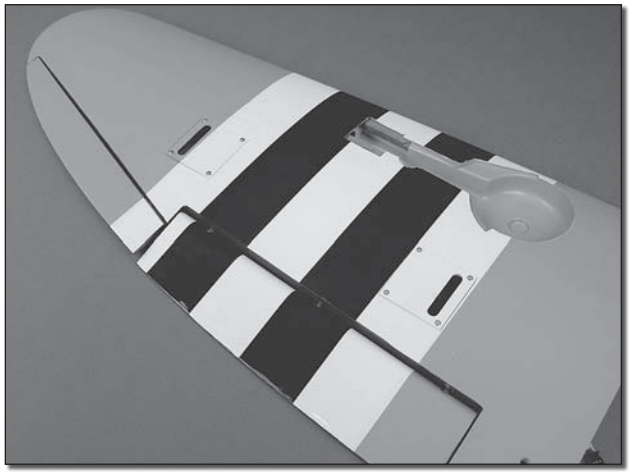
❑ ❑ 4. Position the servo against the underside of the aileron servo hatch cover between the mounting blocks. Drill 1/16" [1.6mm] holes through the mounting tabs on the servo case into the blocks. Insert and then remove a servo mounting screw (included with the servo) into each hole. Apply a drop of thin CA to each hole to harden the wood. When the CA has dried, install the servo onto the hatch cover using the hardware supplied with the servo.



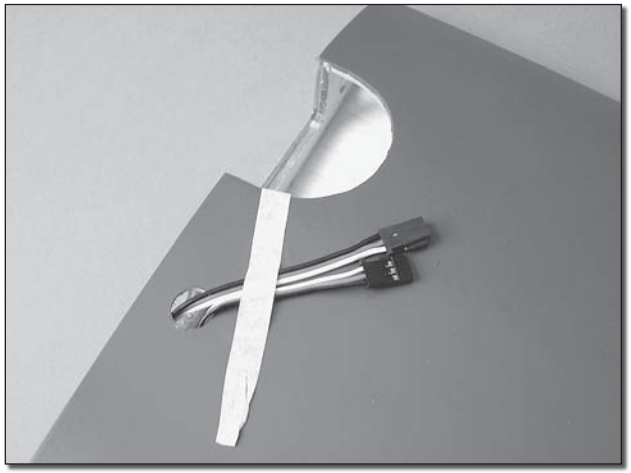
❑ ❑ 5. Tie the string taped inside the aileron servo hatches to the servo lead. The opposite end of the string is taped to the wing's root rib. Pull the servo lead through the wing ribs.



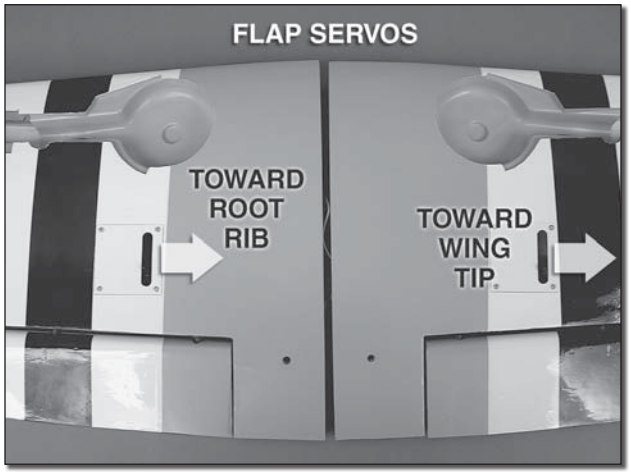
❑ ❑ 6. Insert and then remove a #2 x 3/8" [9.5mm] self-tapping screw into each hatch mounting hole. Apply a drop of thin CA to each hole to harden the wood. Once the glue has dried, install the aileron hatch cover to the wing as shown using four #2 x 3/8" [9.5mm] self-tapping screws and four #2 flat washers.



❏ ❏ 7. Mount the flap servo and hatch cover in the same way. The flap servo does not require a servo lead extension.

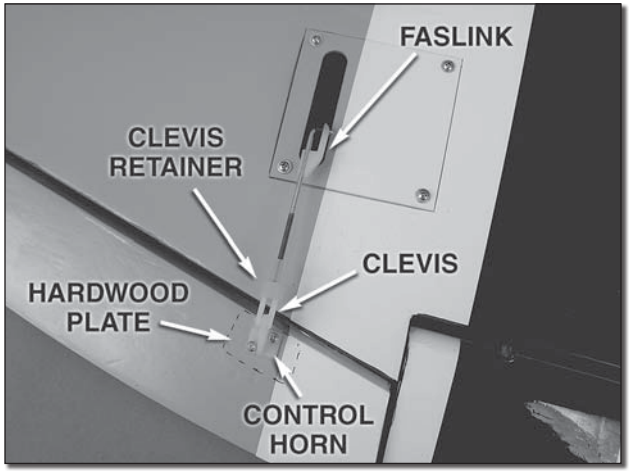


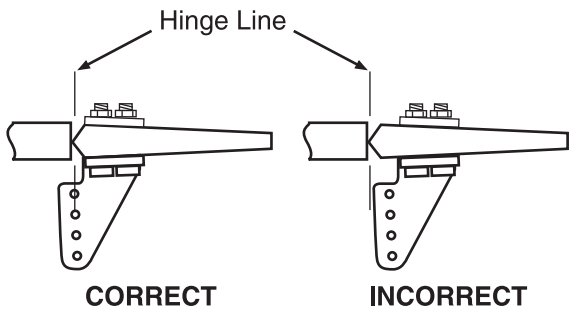
❏ ❏ 8. Insert the servo leads through the hole in the top of the wing. Tape the leads to the wing to prevent them from dropping back in.



❏ 9. Repeat steps 1-9 for the left wing panel. Make note that the flap servo arm will be mounted on the root rib side of the right wing panel and the flap servo arm is mounted towards the wing tip on the left wing panel. When the flap servos are joined together using a Y-harness, they will both move in the same direction.

INSTALL THE AILERON AND FLAP PUSHRODS



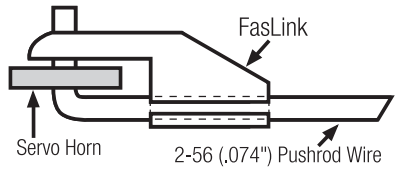


Refer to the photograph as you complete steps 1-4.

❏ ❏ 1. Thread a nylon clevis 20 complete turns onto a 4" [152mm] pushrod. Slide a silicone clevis retainer onto the clevis and connect the clevis to the outer hole of a nylon control horn.

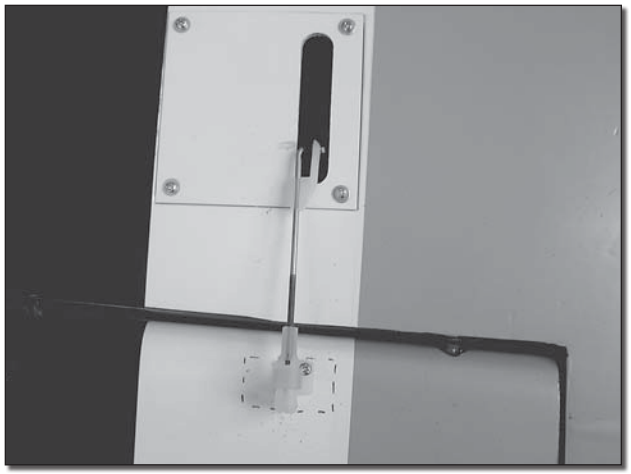
❏ ❏ 2. Position the control horn over the plywood plate in the aileron (if you cannot see it, hold the aileron at a shallow angle in good lighting or use a small pin to puncture the covering) using the position of the servo arm as a guide. Align the holes in the control horn directly over the aileron hinge line and mark the location of the control horn mounting holes.

❏ ❏ 3. Drill 1/16" [1.6mm] holes at the marks you made through the plywood plate. ***Do not drill all the way through the aileron!*** Thread a #2 x 3/8" [9.5mm] self-tapping screw through each hole and back it out. Apply a couple drops of thin CA glue to each hole to harden the wood. When the glue has dried, install the control horns onto the aileron using two #2 x 3/8" [9.5mm] self-tapping screws.



❏ ❏ 4. Use tape or a small clamp to hold the aileron in the neutral position. Make a mark on the pushrod where it crosses the outer hole in the servo arm. Make a 90 degree bend at the mark on the pushrod

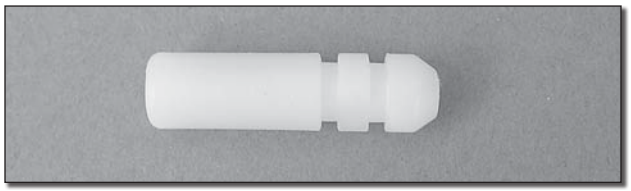
and cut off the excess pushrod 1/4" [6mm] beyond the bend. Attach the pushrod to the servo arm using a nylon FasLink. Thread the clevis up or down on the pushrod as necessary to center the aileron with the servo arm centered. Slide the silicone clevis retainer to the end of the clevis to secure it.

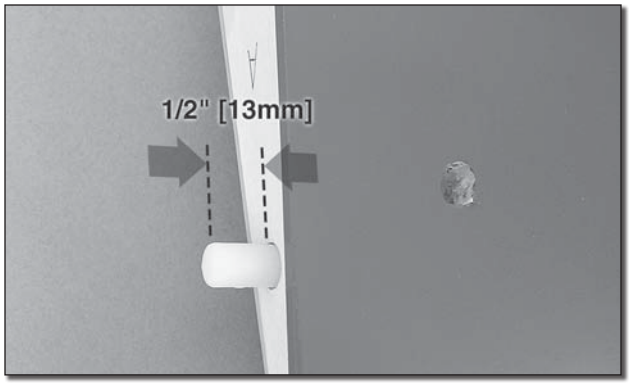


❏ ❏ 5. Install the flap pushrod using the same procedure used for the aileron. The flap pushrod is installed in the same manner except the control horn is mounted as shown in the photograph, and rather than centering the servo arm, position the servo arm so that it is angled back towards the trailing edge of the wing.

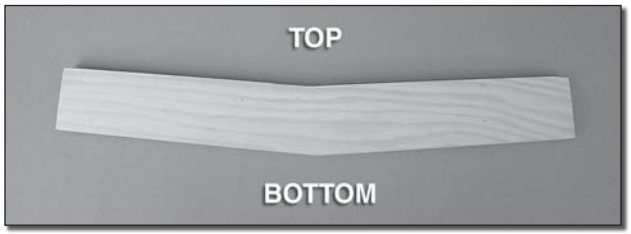
❏ 6. Repeat steps 1-5 for the other wing panel.

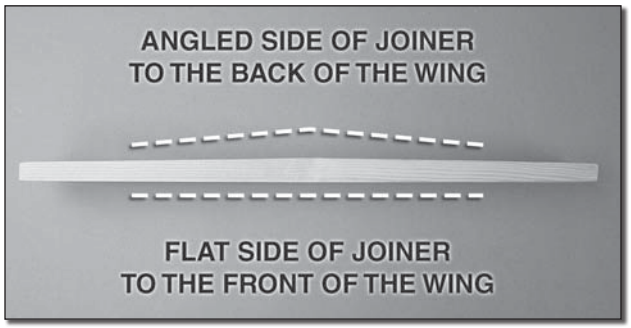
JOIN THE WING PANELS





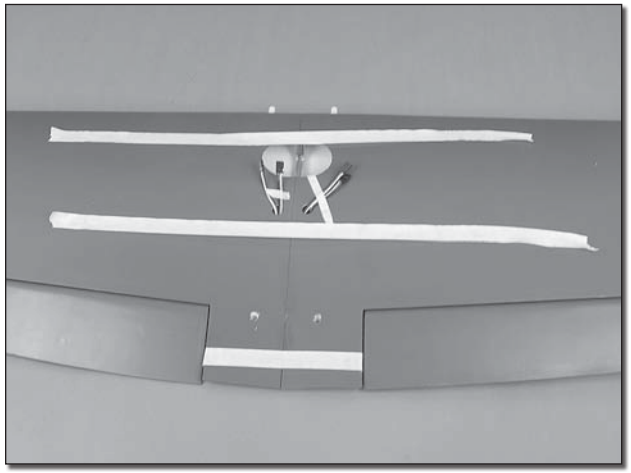
❏ 1. Locate the nylon anti-rotation pin. Epoxy it into the hole in the right wing panel. Approximately ½"[13mm] of the pin should extend from the wing



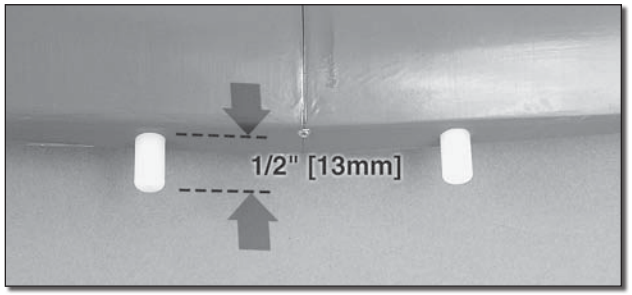


❏ 2. Locate the hardwood **wing joiner**. The joiner has a double taper. The photo shows how to identify the top of the joiner and the front of the joiner. Test fit the joiner into the joiner pocket of each wing panel. The joiner should be able to fit halfway into each pocket and be slightly loose to allow room for epoxy. Sand the joiner as necessary for the proper fit.

❏ 3. Dry fit the wing panels together using the joiner. The root ribs of the panels should sit flat against each other with no gaps. Lightly sand the face of the root ribs if necessary to eliminate any gaps between the wing panels.



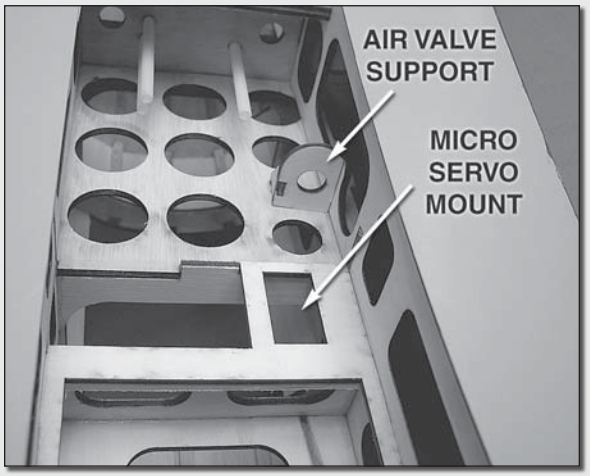
❏ 4. When satisfied with the fit of the wing panels mix up a ½ ounce of 30-minute epoxy and coat the inside of the wing joiner pockets in each wing panel. Coat one half of the wing joiner and slide it into one wing panel. Coat the root ribs of both wing panels as well as the exposed ends of the joiner and anti-rotation pin. Join the two wing panels together and use paper towels dampened with denatured alcohol to wipe away any excess epoxy from the joint between the panels. Use masking tape to hold the panels together tightly. Set the wing aside and let the epoxy cure undisturbed.



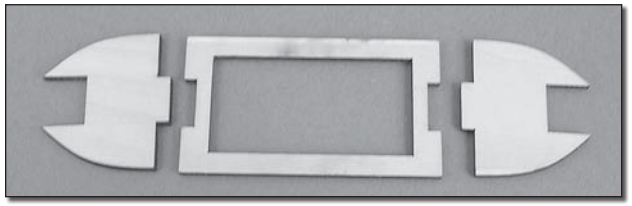
❏ 5. Glue two nylon pins into the holes in the leading edge, at the center of the wing. Approximately ½"[13mm] should extend from the leading edge of the wing.

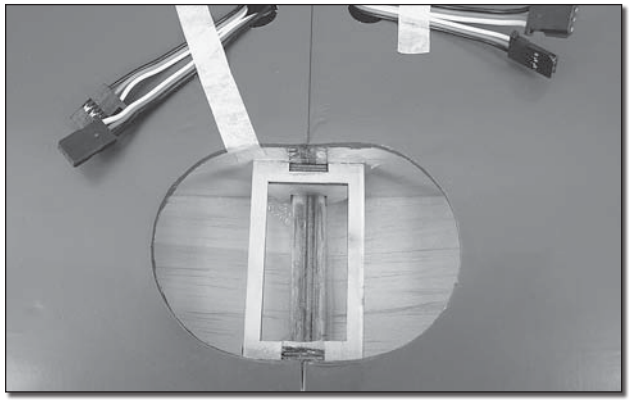
INSTALL THE RETRACTABLE LANDING GEAR, SERVO, WHEELS AND GEAR DOORS

Optional Pneumatic Retracts

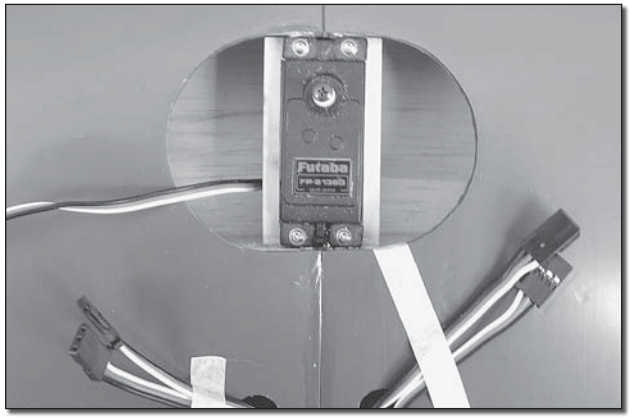


Some modelers may wish to install pneumatic retracts instead of the mechanical retracts included in this kit. Mounting locations are provided in the fuselage for optional pneumatic retract hardware including the air tank, air valve, and air valve servo. Tabs are designed into the air tank that support the front of the air tank for securing it with rubber bands. Detailed installation instructions are not provided for installing pneumatic retracts. However, the installation process for the gear is similar to the mechanical installation shown in the following instructions. The mechanical retract pushrods will need to be replaced with air lines. Be sure to follow the instructions included with the pneumatic retract kit.

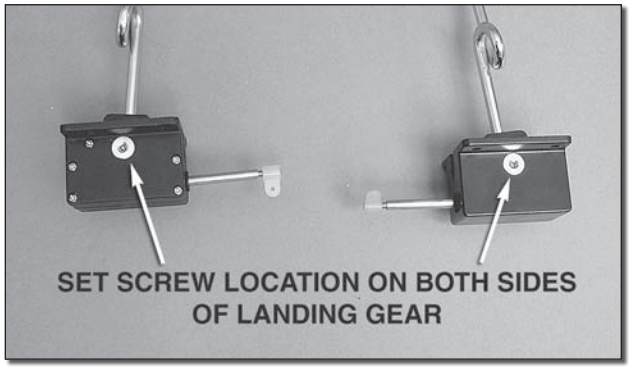




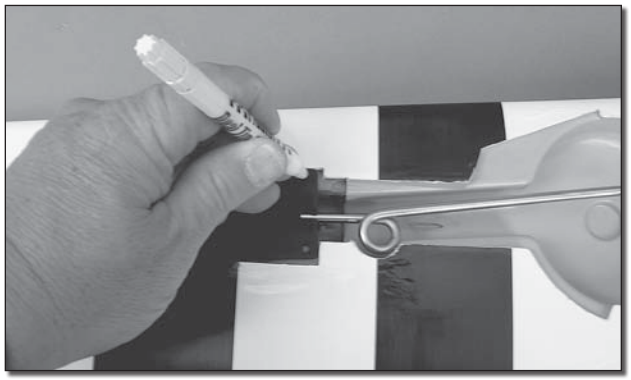
❏ 1. Locate the 3 plywood parts that make up the servo tray. Test fit them into the center of the wing. Adjust the parts as needed. Once you are satisfied with the fit, glue the components in place. You will find it easiest to glue each of the components in place individually rather than gluing it together and then trying to fit it into the opening.

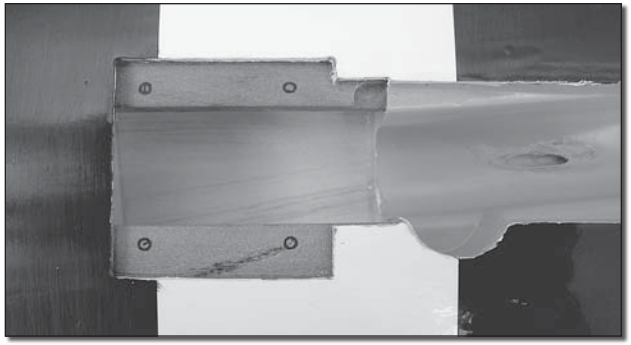


2. Install your retract servo between the mounting rail in the wing center section using the hardware that came with the servo. Be sure to harden the screw holes with thin CA glue.



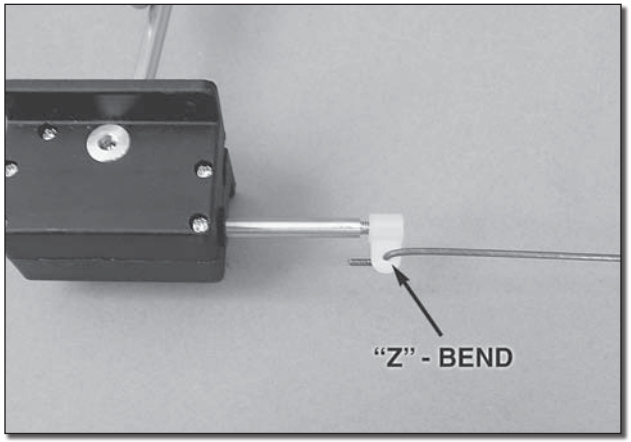
❏ ❏ 3. Remove the set screw from each side of the landing gear. Apply a couple of drops of thread locker onto the set screws. Then re-insert it and tighten it against the landing gear wire. Do this for both gear.



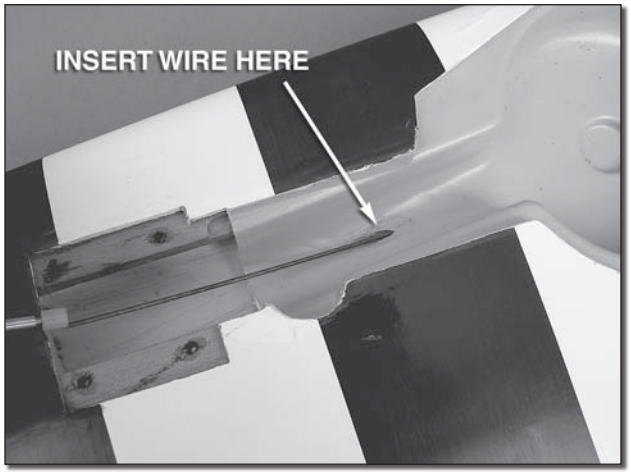


❏ ❏ 4. Position the landing gear onto the landing gear rails as shown here. With a pencil or fine tip marker, mark the location of the holes for mounting the landing gear.

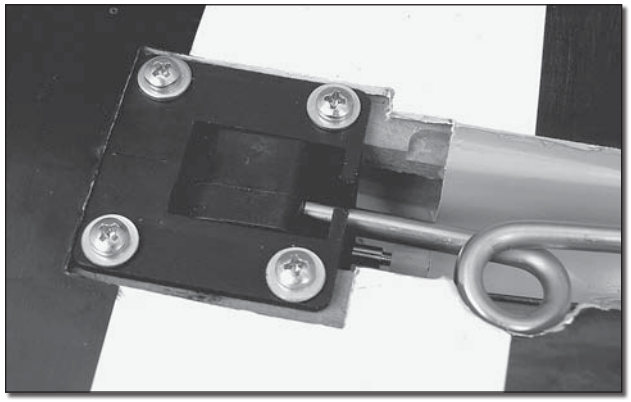
❏ ❏ 5. On the marks you made for the location of the landing gear drill a 7/64" [2.8mm] hole through the rails. Insert and remove a #6 x3/4" [19mm] screw into each of the holes. Apply a couple drops of thin CA into the holes to harden the threads. Allow the glue to harden.



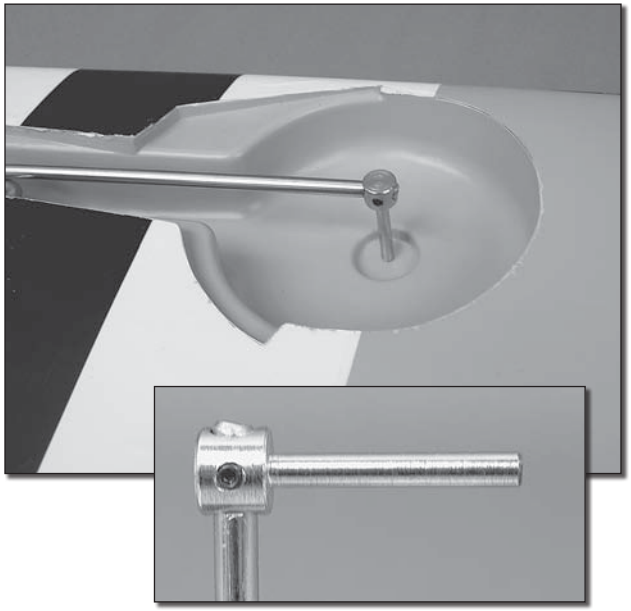
❏ ❏ 6. Locate one of the 12" [305mm] wires with the "Z" bend on the end. Insert the end with the "Z" bend into the connector on the end of the retract unit.



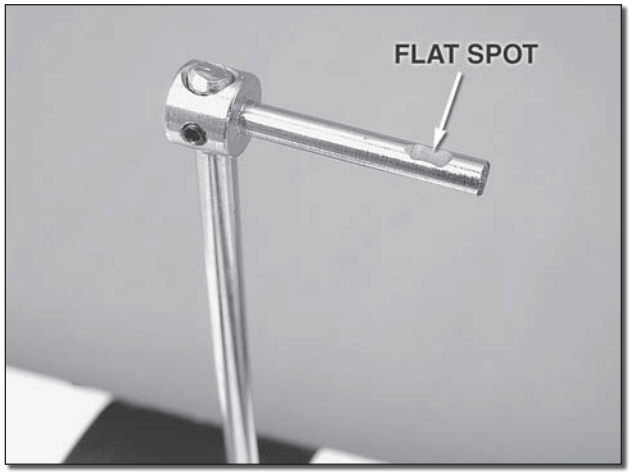
❏ ❏ 7. Insert the wire from the landing gear into the tube located in the wheel well. Using the tube as a guide, push the wire into the wing until the landing gear can rest on the landing gear rails.



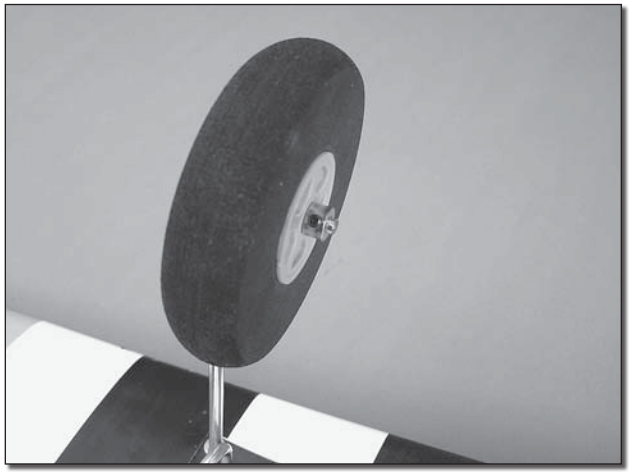
❏ ❏ 8. Mount the landing gear to the rail with four #6 x ¾" [19mm] screws and four #6 flat washers.



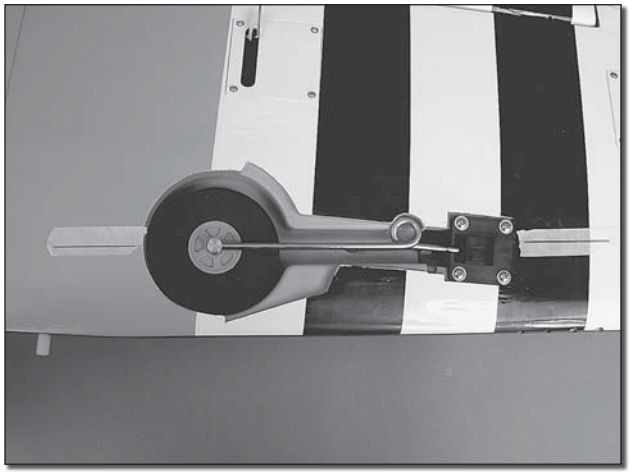
❏ ❏ 9. Apply a drop of thread locker to two 3mm set screws. Then, thread them into the axle (the set screws may already be installed in the axle. If so remove them, apply thread locker, and then re-install them into the axle). Slide the axle onto the landing gear. Tighten the set screws in the axle against the flat spots that have been cut into the end of the landing gear. When the axle is properly installed, the end of the axle will fit into the wheel well as shown.



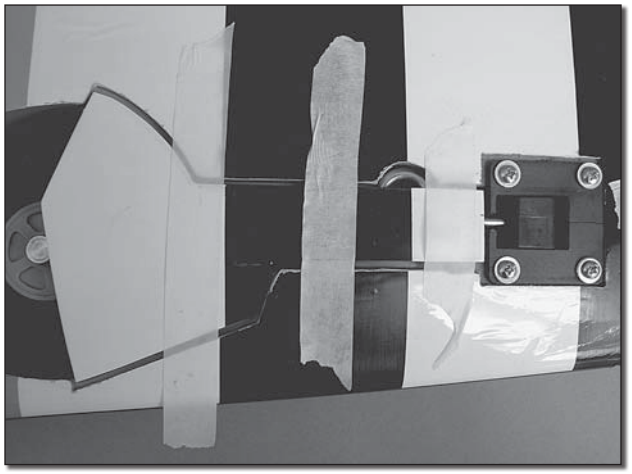
❏ ❏ 10. Using a motor tool or file, grind a flat spot on the end of the axle.



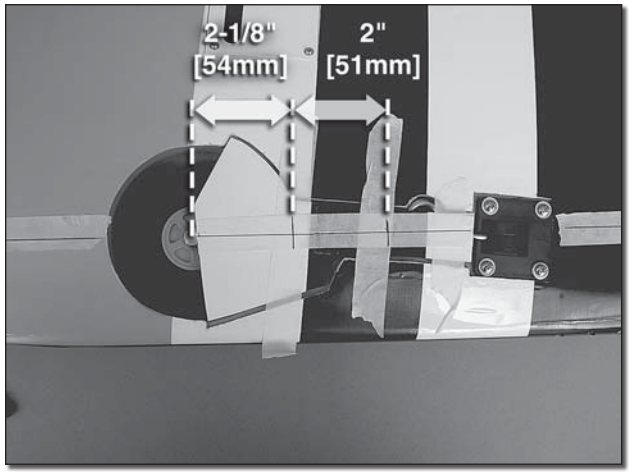
❏ ❏ 11. Install the wheel onto the axle. Apply thread locker to the set screw and tighten the set screw against the flat spot on the axle.



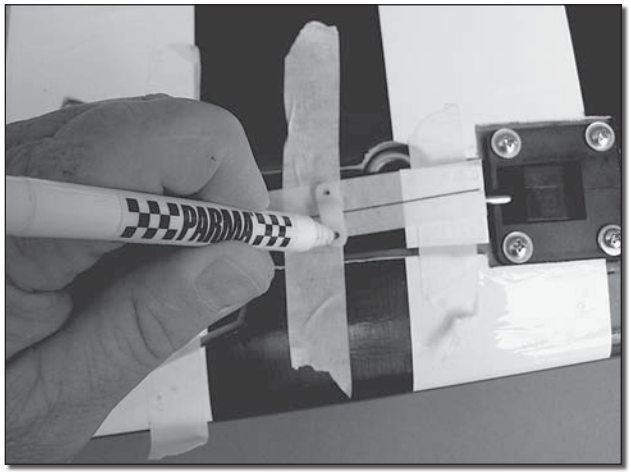
❏ ❏ 12. Apply a piece of masking tape to the surface of the wing at each end of the landing gear. You need to transfer the exact center line of the landing gear to the tape. Draw a line on the tape that is directly down the center of the landing gear wire.

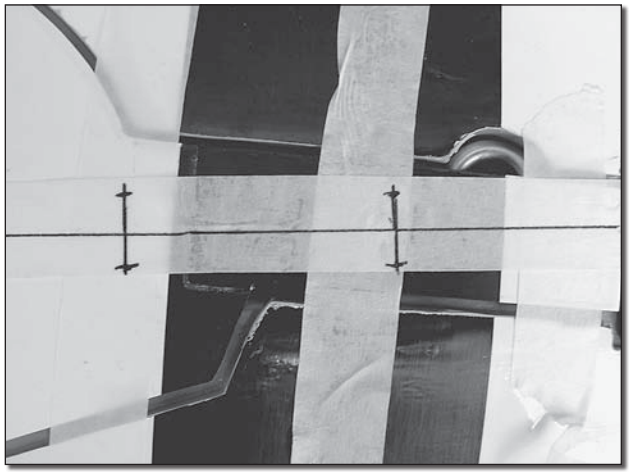


❏ ❏ 13. Tape the landing gear door onto the landing gear. Be sure to center the door in the opening, leaving an equal spacing between the door and the opening on both the leading edge and trailing edge of the door.



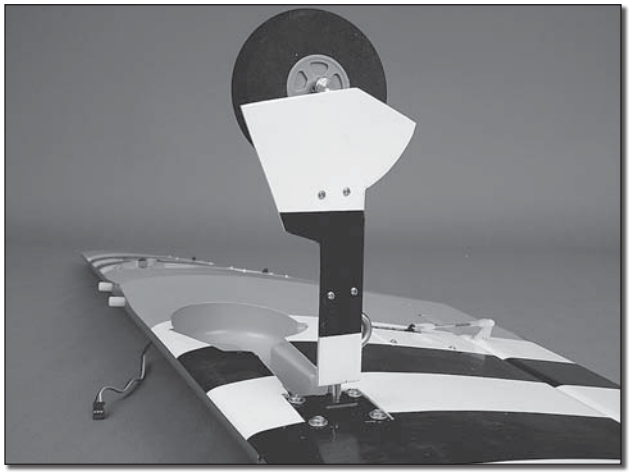
❏ ❏ 14. Apply another piece of masking tape to the door in line with the landing gear wire. Using the lines you previously drew at each end of the landing gear, draw a line on the tape you just applied to the door. This line represents the center of the landing gear wire. From the center of the axle measure up 2-1/8" [54mm] and draw a line perpendicular to the line representing the landing gear wire. From that line measure up another 2" [51mm] and make another line.

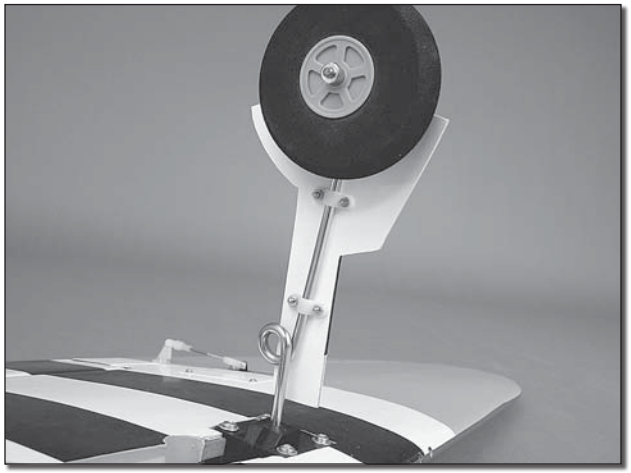




❏ ❏ 15. Place one of the nylon humped landing gear straps on the line you have drawn. Pay careful attention, positioning it so the hump is centered on the line representing the landing gear wire and the mounting holes are on the crossing line. When you are satisfied with the position, mark the hole locations of the strap onto the line. Do this for both lines you have drawn.

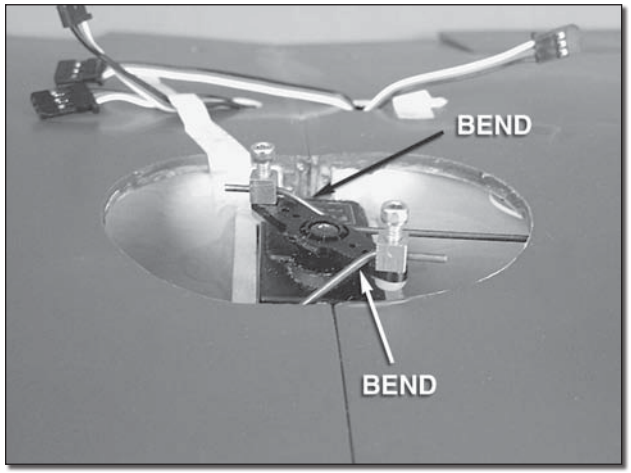
❏ ❏ 16. On each of the four marks drill a 3/32"[2.5mm] hole through the landing gear door.





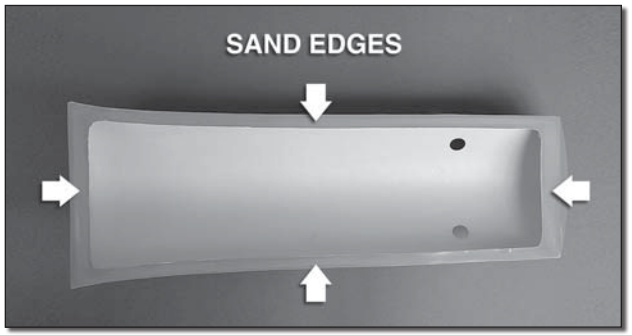
❏ ❏ 17. Attach the door to the landing gear wire with two humped landing gear straps, four 2-56 x 3/8" [10mm] screws and four #2 nuts. Be sure to apply thread locker to the screws. You may wish to apply a drop of paint to the screw heads to make them blend into the door.

❏ 18. Repeat steps 3-17 for the left wing.

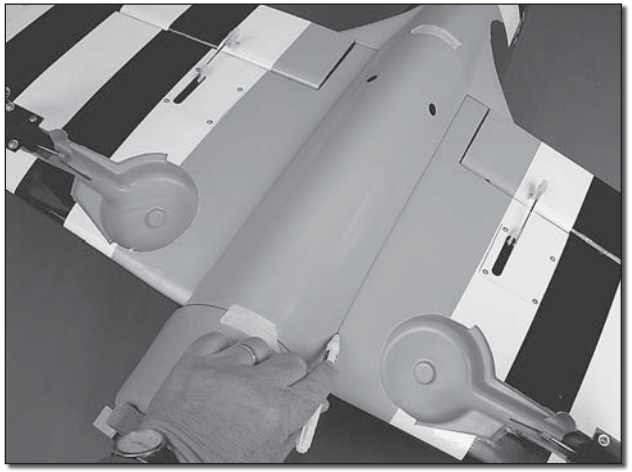


❏ 19. Cut four arms from a six-arm servo arm, leaving two arms opposite each other. Attach a brass screw-lock connector to each arm in the outer hole using a nylon retainer to secure them. Loosely thread a 4-40 x 1/8" [3.2mm] SHCS into each screw-lock connector. Bend the retract wire as shown to allow the wire to be aligned with the hole in the brass screw lock connector. Slide the retract pushrod wires through the screw-lock connectors and press the arm onto the servo spline in the orientation shown. With the retract pushrods all the way in the retracted position, tighten the SHCS in the screw-lock connectors against the pushrods. Remember to apply a drop of threadlocker to the SHCS. Test the operation of the landing gear with your radio system. Confirm that the servo does not bind and that the landing gear fully raise and lower to the locked positions. Make any adjustments necessary with the screw-lock connectors and servo arm position. When satisfied, secure the servo arm to the servo using the servo arm screw included with the servo.

FINISH THE WING



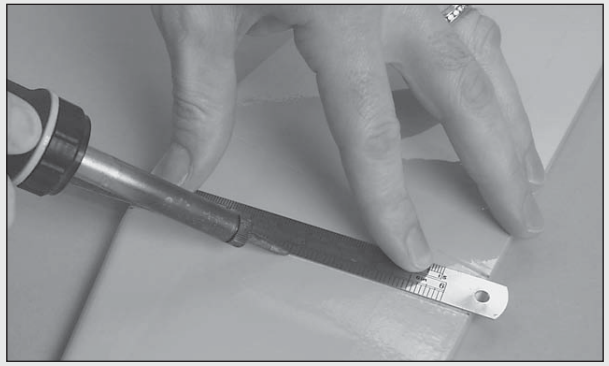
❑ 1. Locate the fiberglass **belly pan**. Sand the painted edge with 220-grit sandpaper and clean the surface with alcohol.



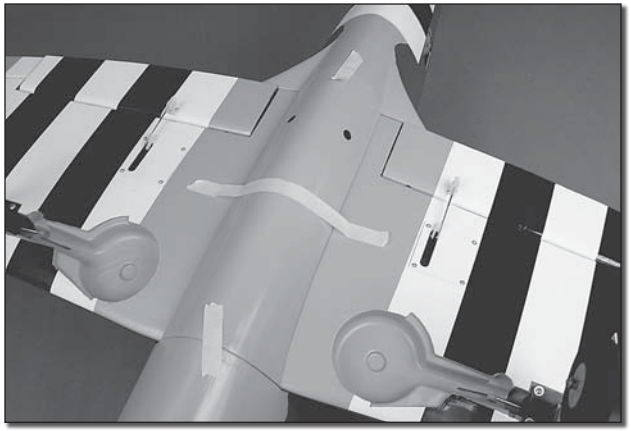
❑ 2. Temporarily install the wing onto the fuselage using two 1/4-20 nylon wing bolts. The wing dowels will fit into receiving holes in the former at the leading edge of the wing. Align the fiberglass belly pan onto the underside of the wing in line with the fuselage and tape it into position. Use a felt-tip pen to trace around the belly pan onto the wing. Remove the belly pan and trim a 3/8" [10mm] strip of covering from the underside of the wing just inside the line you drew. ***Be careful to cut only the covering and not the surface of the wing***. Use a sharp hobby knife or the " Hot Tip" that follows.

HOT TIP

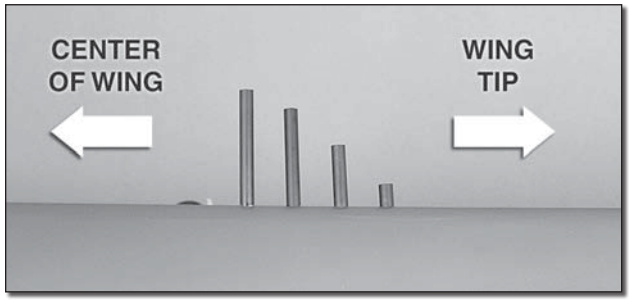
HOW TO CUT COVERING FROM BALSA

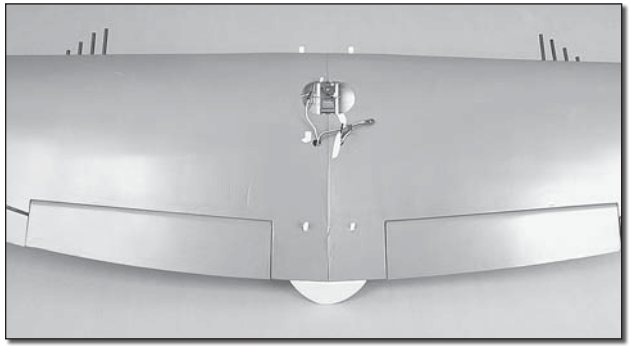


Use a soldering iron to cut the covering from the stab. The tip of the soldering iron doesn't have to be sharp, but a fine tip does work best. Allow the iron to heat fully. Use a straightedge to guide the soldering iron at a rate that will just melt the covering and not burn into the wood. The hotter the soldering iron, the faster it must travel to melt a fine cut. Peel off the covering.



❑ 3. Glue the belly pan to the wing with epoxy. Tape the belly pan in place and put some weight on it to hold it in place while the glue dries.





❑ 4. There are two sets of black tubes that will be installed as machine guns in the leading edge of the wing. The holes for the guns are pre-drilled to the correct depth for each of the guns. The tubes are installed so the longest gun is towards the center of the wing and the shortest is towards the tip. Test fit a tube into each of the holes. Once you are satisfied with the fit, glue the machine guns into the holes in the leading edge of the wing.

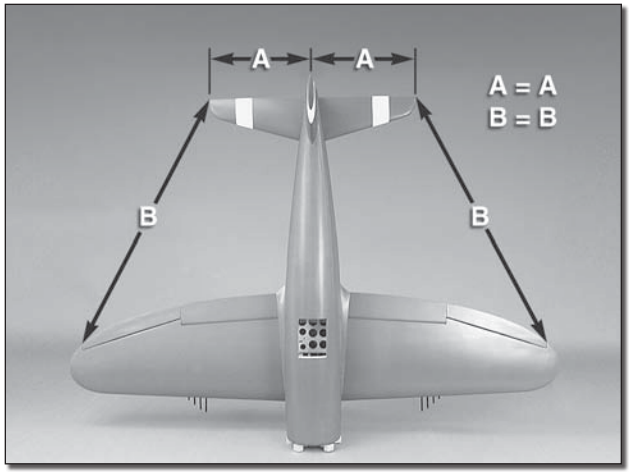
Built in greater quantities than any other US fighter, the P-47 was the heaviest single-engine WWII fighter to go into production and the first piston-powered fighter to exceed 500 mph. The Thunderbolt performed 546,000 combat sorties between March of 1943 and August 1945 and is considered the real forerunner of today's multirole fighters.

ASSEMBLE THE FUSELAGE

INSTALL THE HORIZONTAL STABILIZER, ELEVATORS AND RUDDER

For the installation of the stabilizer you will need to have rubbing alcohol on hand for clean up. If you do not have any, DO NOT START THIS INSTALLATION UNTIL YOU DO!

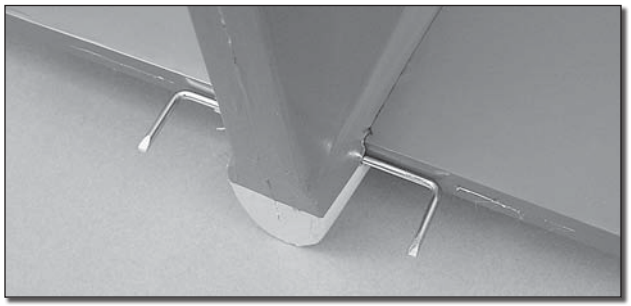
It is suggested that you read the next few steps to better understand the process before actually gluing components in place.



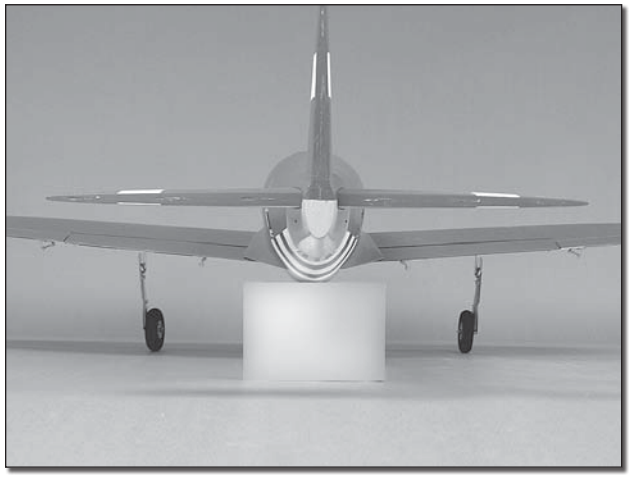
❏ 1. Temporarily attach the wing to the fuselage with two ¼ - 20 nylon wing bolts. Slide the **horizontal stabilizer** in place in the back of the fuselage. Position the stab so that it is equal in length on both sides of the fuselage and that the distance from the wing tip to the stabilizer tip is equal.

❏ 2. When you are satisfied with the positioning, mark the outline of the fuselage onto the top and the bottom of the stabilizer with a fine point felt-tip pen.

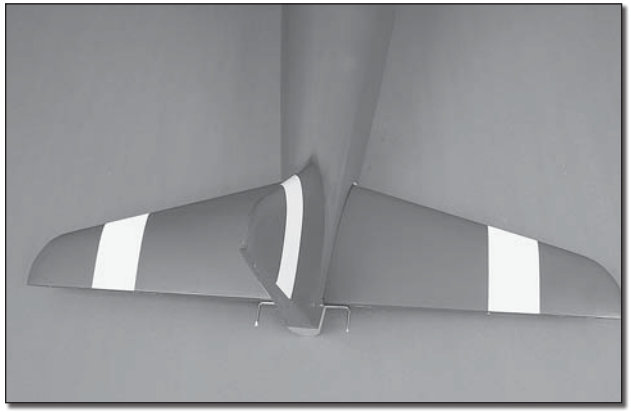
❏ 3. Inside of the line you have marked, cut the covering from the top and bottom of the stabilizer using the same technique used on the bottom of the wing. *Make sure you cut the covering only!*



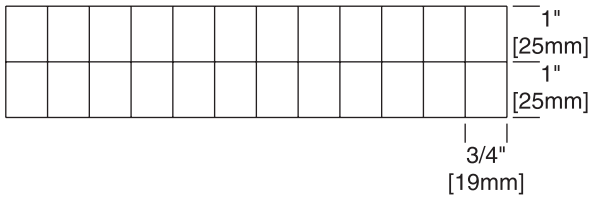
❏ 4. Locate the **elevator joiner wire**, and insert it into the slots in the stab opening. Then insert the stab into the opening in the rear of the fuselage.

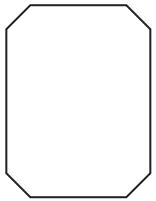


❏ 5. Stand back a few feet and look at the stab in relation to the wing. The stab should be parallel and in line with the wing. If you find that your stab is not aligned, adjust the stab by removing small amounts of the stab saddle with 100 grit sand-paper.

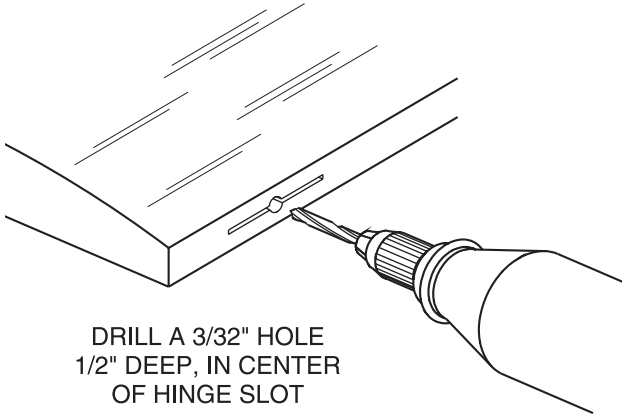


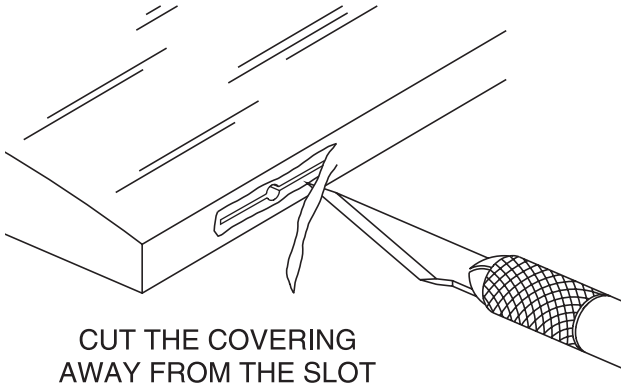
❏ 6. Move the stab to the right and left, exposing the wood where you cut the covering away. Apply 30-minute epoxy to the wood on both the top and bottom of the stab. Work the glue into the stab opening by moving the stab back and forth. When you are satisfied with the penetration of the glue, clean away the excess epoxy from the stab and fuselage using a cloth dampened with alcohol. Once cleaned, double check the stab position and check to be sure the elevator joiner wire moves freely. Set it aside to cure.



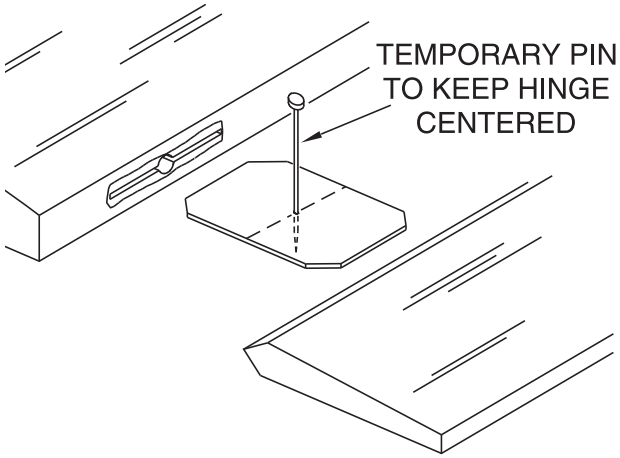


❏ 7. Cut the included CA hinge material into six 3/4" x 1" [19mm x 25mm] individual hinges. Use a hobby knife or scissors to trim the corners from each hinge to make them easier to insert into the hinge slots.

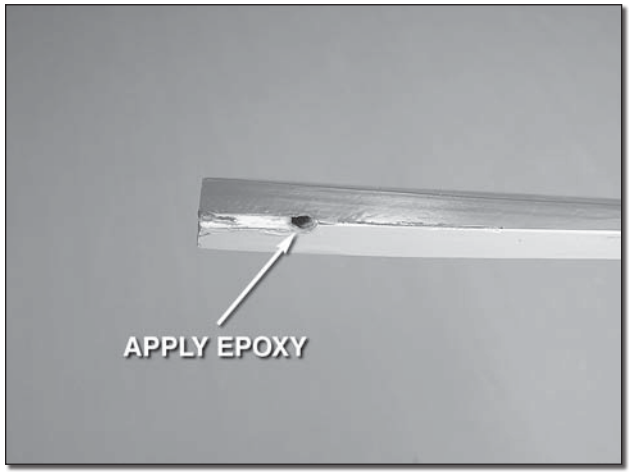


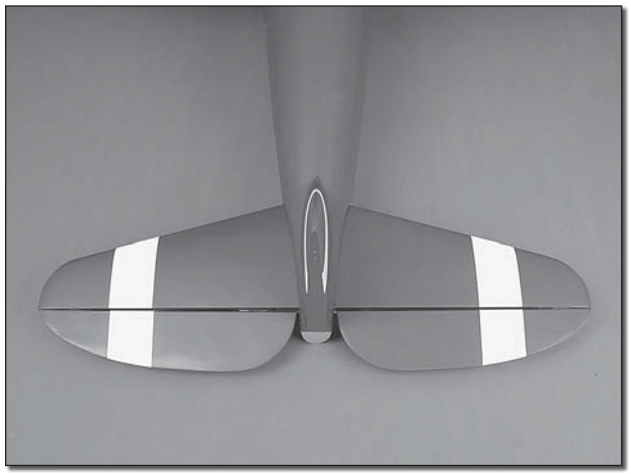


❏ 8. Drill a 3/32" [2.4mm] hole 1/2" [13mm] deep in the center of each hinge slot in the wing panel and **aileron**. Use a sharp hobby knife to carefully cut away the covering just around each hinge slot.

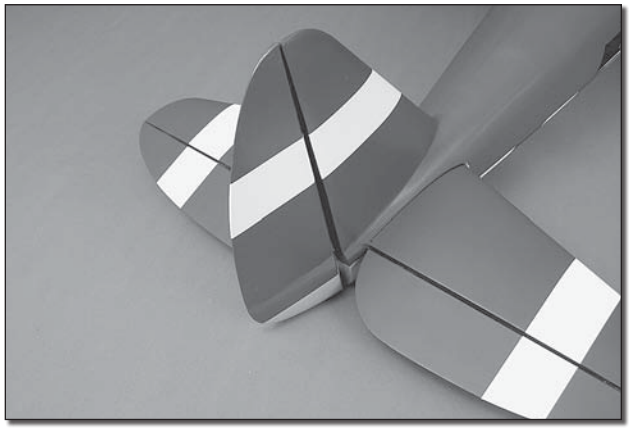


❏ 9. Insert three hinges into each elevator. If the hinges don't remain centered, stick a pin through the middle of the hinge to hold it in position. Slide the hinges into the elevator, sliding the joiner wire into the hole in the elevator. Once you are satisfied everything fits, remove the elevator.

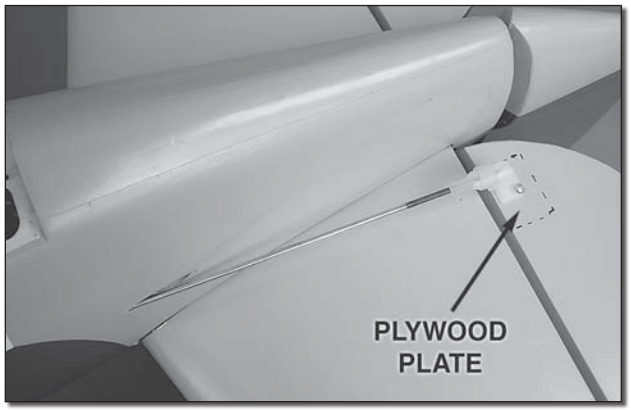




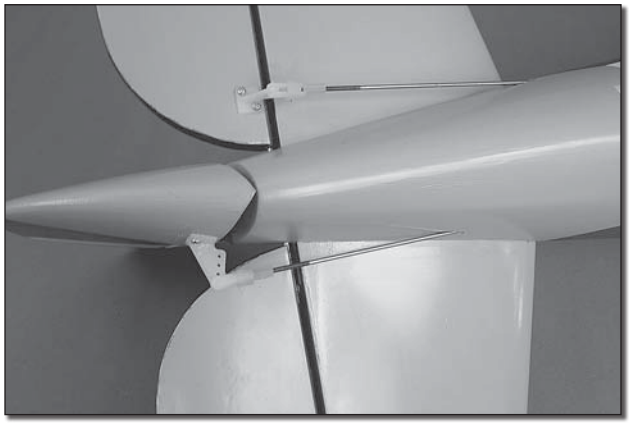
❏ 10. Apply a small amount of epoxy into the hole in each elevator half. Re-install the elevators and hinges to the stab. Remove any pins you may have inserted into the hinges. Adjust the elevator so there is a small gap between the LE of the elevator and the stab. The gap should be small, just enough to see light through or to slip a piece of paper through. Apply six drops of thin CA to the top and bottom of each hinge. Do not use CA accelerator. After the CA has fully hardened, test the hinges by pulling on the elevator. Do this for both elevator halves.



❏ 11. Install three hinges into the rudder the same as done with the elevator. Test fit the rudder to the fin. When you are satisfied with the final fit, apply six drops of thin CA to the top and bottom of each hinge.



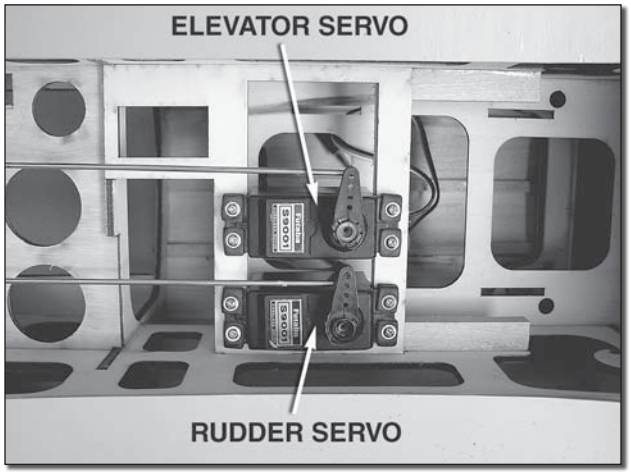
❏ 12. Screw a nylon clevis onto a .074 x 36" [914mm] threaded wire 20 turns. Slide a nylon clevis retainer onto the clevis. Slide the pushrod wire into the pushrod guide tube hole on the right side of the fuselage. Install the clevis into the outer hole of the control horn. Then, slide the silicone retainer over the clevis. Mark the location for the control horn onto the elevator. Drill a 1/16" [1.6mm] hole into the plywood plate in the elevator. ***Do not drill through the elevator.*** Screw the horn to the rudder with #2 x 3/8" [10mm] screws. Remove the screws, and apply a drop of thin CA to harden the threads. After the glue has dried, re-install the screws into the horn.



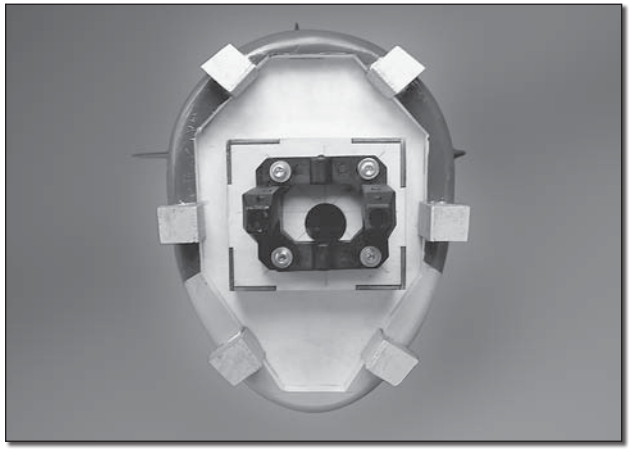
❏ 13. Repeat step 14 for the rudder. The pushrod wire will slide into the pushrod guide tube on the left side of the fuselage.

INSTALL THE SERVOS, ENGINE AND FUEL TANK

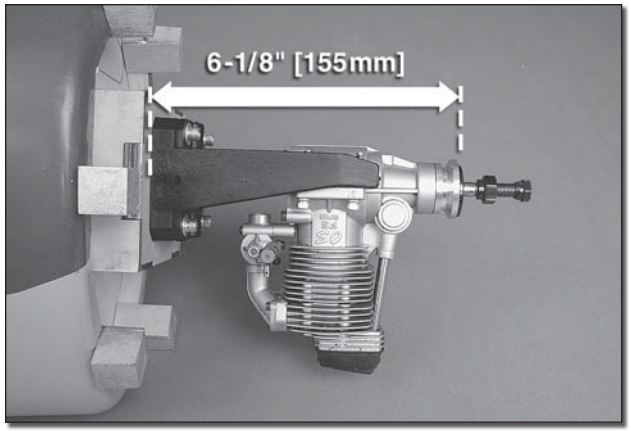
We will be showing the installation of the O.S. .91 engine. If you are installing a larger four-stroke engine or a two stroke engine, you may need to make additional cut outs in the cowl or the fuselage to accommodate the cylinder head and the muffler.



❏ 1. Use the wire pushrods as your guide for positioning the servos. Cut three arms from a four-armed servo arm. Center the servo with your radio system and install the servo arm perpendicular to the servo case as shown. Install the servos using the same procedure used for the other servos, mounting them onto the servo rails. Be sure to harden the screw holes with thin CA.



❏ 2. Bolt the engine mount to the firewall with four 8-32 x 1" [25mm] socket head cap screw, #8 lock washer and #8 flat washer. The engine will be mounted inverted so be sure the mount is attached to the firewall inverted. Place your engine on the mount and adjust the mounting rail position to match and then tighten the bolts.

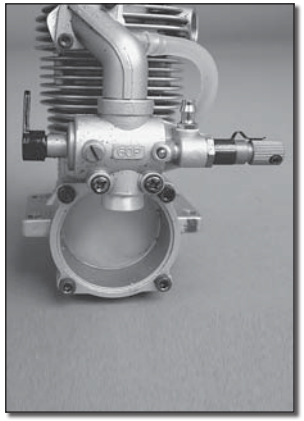


❏ 3. Position the engine on the mount so the distance from the firewall to the front of the thrust washer measures 6-1/8" [155mm]. Mark the location

of the engine on the mount. The Great Planes® "Dead Center" Hole Locator (GPMR8130) works well for this. Drill through the marks you have made with a #29 or 9/64" [3.6mm] drill bit. Tap each hole with an 8-32 tap.

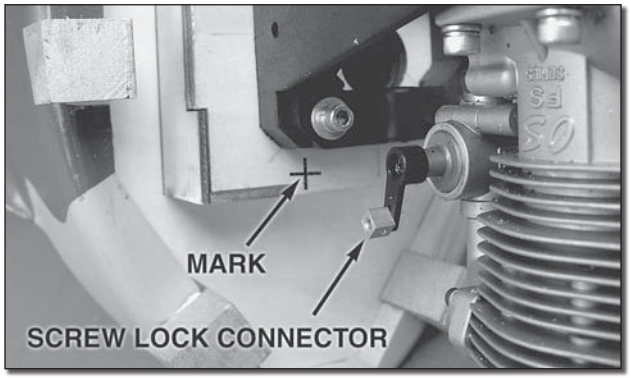
Remove screws to rotate carburetor

Correct position for throttle arm

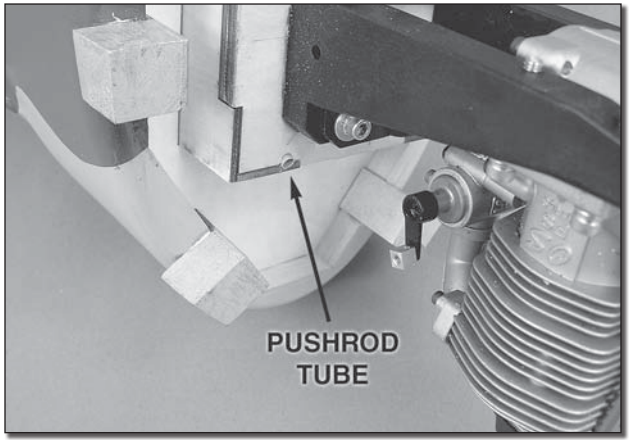


❏ 4. Before installing the engine to the mount, check the location of the throttle arm. Looking from the back of the engine, the arm needs to be on the left side. The O.S. engines allow you to rotate the carburetor. Remove the two screws holding the carburetor to the engine. Remove the carburetor, rotate it 180 degrees, and then re-install the screws. Engines other than O.S. may or may not allow you to rotate the carburetor. If you cannot, you will have to position the throttle servo in a different location than you will be instructed later in this manual.

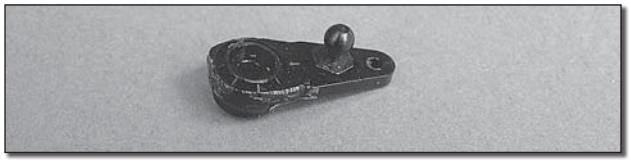
❏ 5. Install the engine to the mount with four each, 8-32 x 1" [25mm] socket head cap screws, #8 lock washers and #8 flat washers.



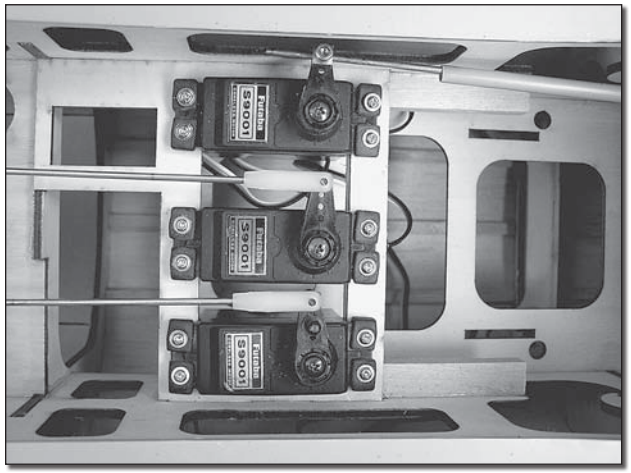
❏ 6. Install a brass screw lock connector to the outer hole of the throttle arm. Lock it to the arm with a nylon retainer. Slide a pushrod wire through the connector, touching it to the firewall. Make a mark where the wire will pass through the firewall.



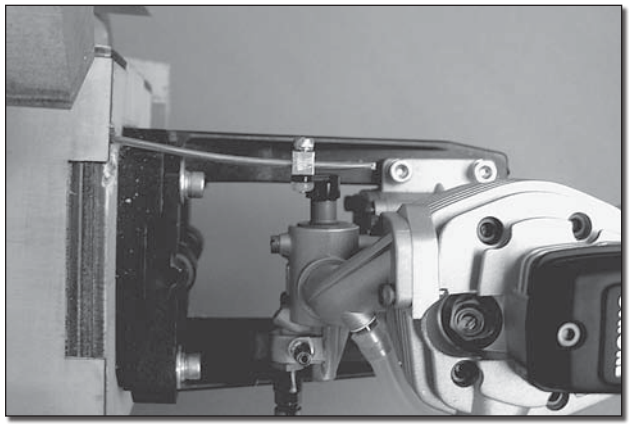
❏ 7. Drill a 3/16" [4.8mm] hole on the mark. Glue a 12" [305mm] plastic tube into the hole.



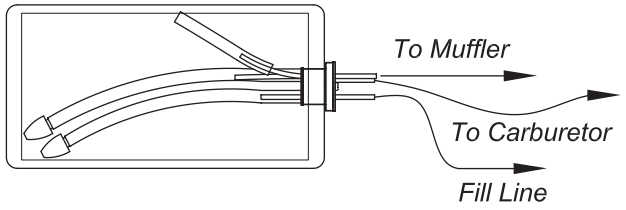
❏ 8. Remove the servo arm from the rudder. Install a ball link into the second hole from the center. Lock it to the servo horn with the 0-80 nut. Re-install the horn to the servo.

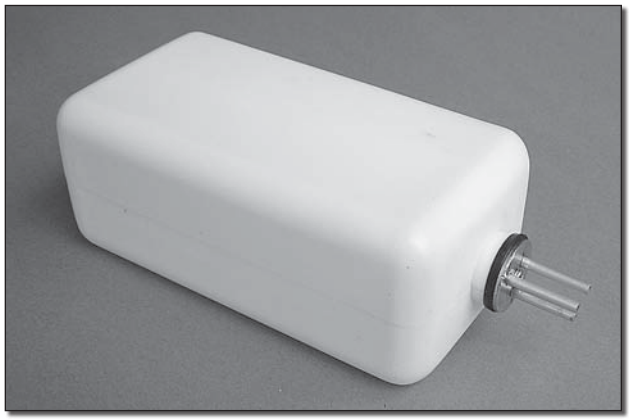


❏ 9. Slide the wire from the throttle into the brass screw lock connector. Lock the wire to the connector with a 4-40 x 1/8" [3mm] socket head cap screw. For the rudder and elevator, center the control surfaces. Make a mark on the pushrod where it crosses the outer hole in the servo arm. Make a 90 degree bend at the mark on the pushrod and cut off the excess pushrod 1/4" [6mm] beyond the bend. Attach the pushrod to the servo arm using a nylon FasLink. Make sure all of the servo horn screws are installed in the servos.



❏ 10. Bend the throttle pushrod slightly to get a smooth movement of the pushrod wire and then secure the wire with a 4-40 x 1/8" [3mm] socket head cap screw. Be sure to apply threadlocker to the bolt.



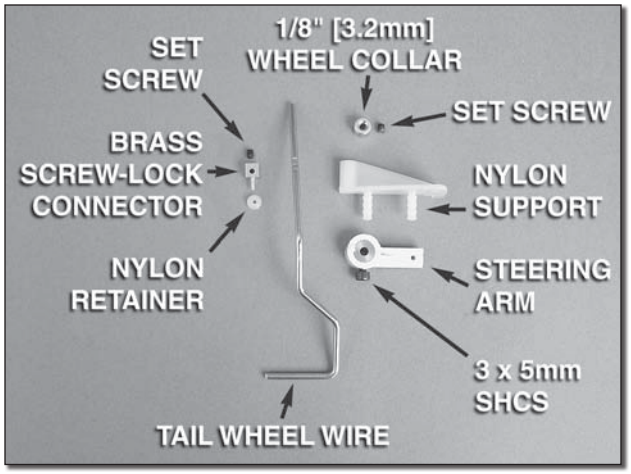


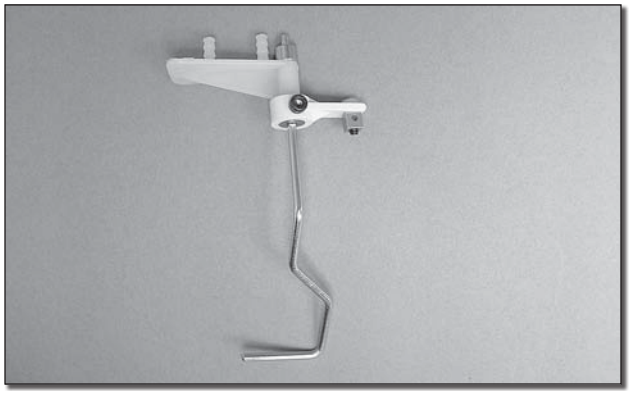
❏ 11. Assemble the **fuel tank** as shown in the sketch. When tightening the center screw be sure not to over tighten it. You just want it snug enough to pull the rubber stopper tight against the tank.

❏ 12. Slide the neck of the fuel tank into the hole in the firewall and rest the tank on the tray. Secure the tank to the tray with two #64 rubber bands.

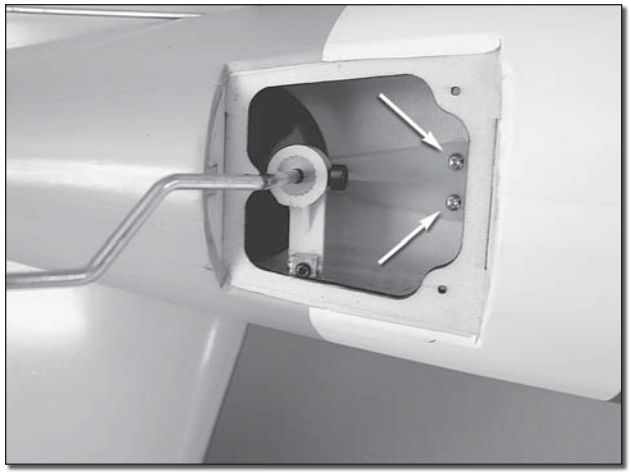
❏ 13. Install silicone fuel tubing (not supplied) onto the aluminum tubes from the fuel tank. One line with the fuel clunk will feed to the fuel inlet at the needle valve. The second line with the fuel clunk will be the line to fill the tank and the other will attach to the pressure tap on the muffler. (The muffler will not be installed at this time. You will do this while fitting the cowl.) The fill line should be plugged after fueling with the aluminum fuel plug provided with the kit.

INSTALL THE TAIL WHEEL AND LINKAGES

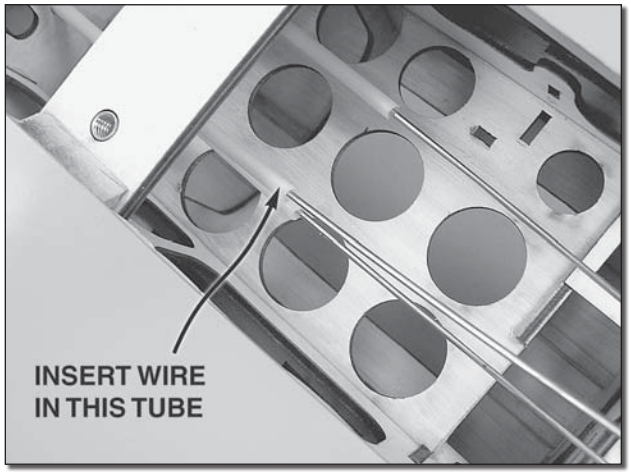


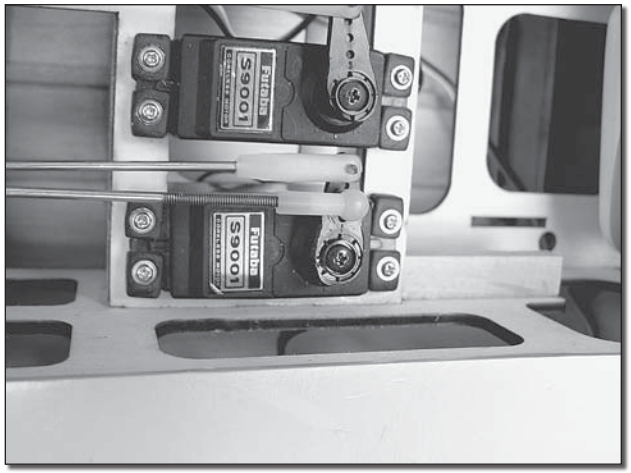


❏ 1. Locate the pieces for the tail wheel assembly. Loosely thread the 3x5mm SHCS into the collar hole in the steering arm. Slide the steering arm onto the tail wheel wire and tighten the SHCS against the flat spot in the wire. Be sure that the steering arm is oriented in the same direction as shown in the picture. Slide the nylon support onto the wire beneath the steering arm. Tighten a 1/8" [3.2mm] wheel collar using a 4-40 set screw onto the wire below the nylon support. The support should still be able to rotate on the wire. Secure a brass screw-lock connector to the linkage hole in the steering arm with a nylon retainer. Loosely thread a 4-40 set screw into the screw-lock connector. *Be sure to apply thread locker to all of the screws*.

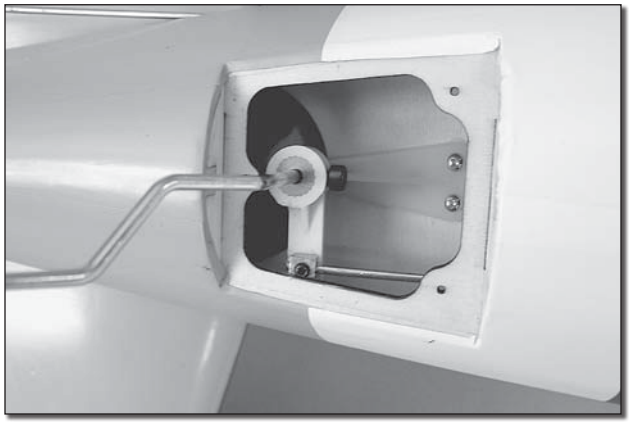


❏ 2. Secure the assembly with two #2 x 3/8" [9.5mm] self-tapping screws.

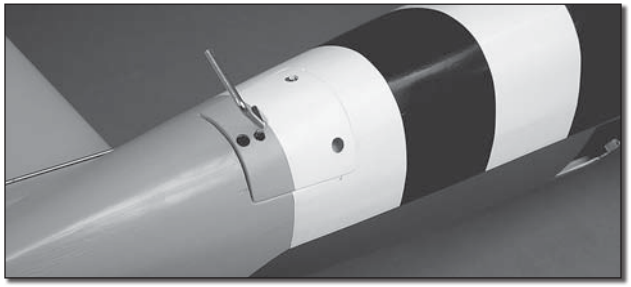




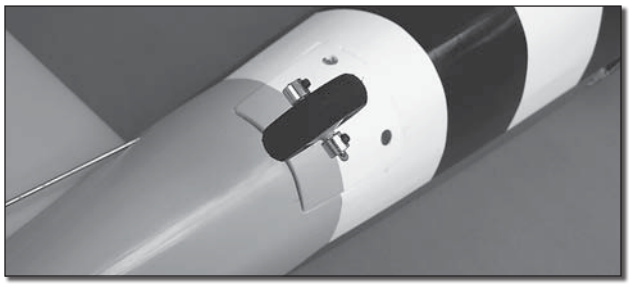
❏ 3. Thread a nylon ball cup onto the end of a 2-56 x 36" [914mm] pushrod threaded on one end. Cut the wire to a length of 27-3/4" [705mm]. Insert the pushrod into the pushrod tube that is closest to the bottom of the fuse. Feed the aft end of the pushrod through the brass screw lock connector on the tail wire steering arm and out the elevator control horn access hole. Push the ball cup onto the ball stud.



❏ 4. Center the tail wheel wire axle and tighten the set screw in the screw-lock connector against the tail wheel pushrod.

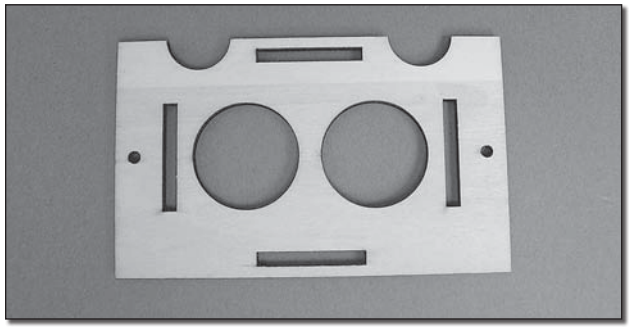


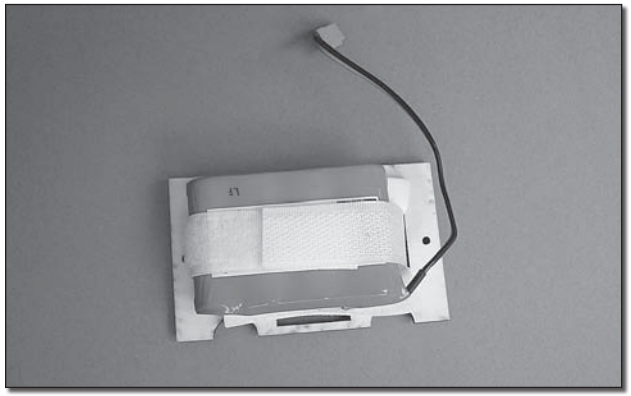
❏ 5. Fit the tail wheel hatch cover in place and secure it with four #2 x 3/8" [9.5mm] screws. Be sure to harden the screw holes with thin CA.



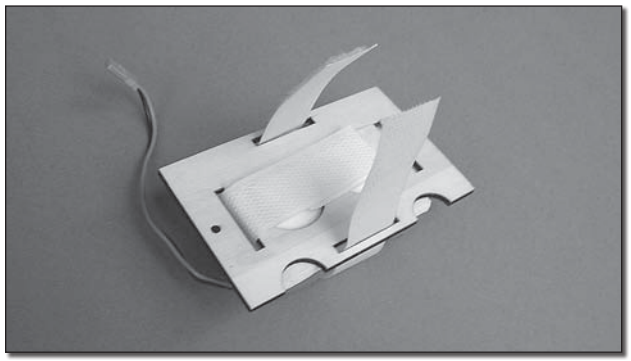
❏ 6. Install the tail wheel onto the tail wheel axle using two 1/8" [3.2mm] wheel collars and two 4-40 set screws. Be sure that the wheel rotates on the axle freely. Oil the axle if necessary.

INSTALL THE RADIO SYSTEM



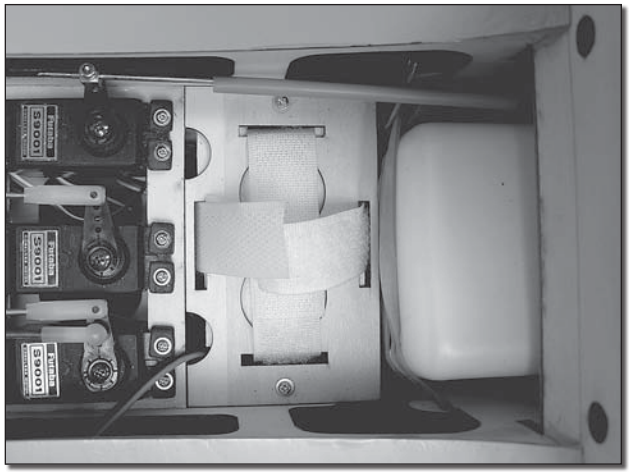


❏ 1. Locate the plywood **battery / receiver tray**. Loop one of the Velcro straps through the slots in the ends of the tray. Place a piece of foam between the tray and your receiver battery. Secure the battery to the tray with the Velcro.

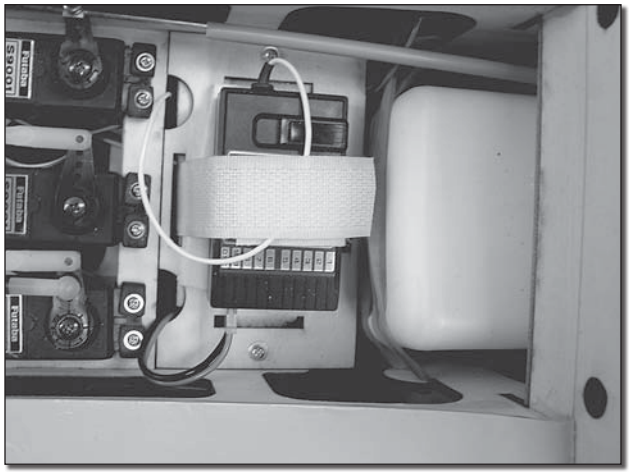


❏ 2. Slide the remaining Velcro through the other two slots in the tray, wrapping them around the top.

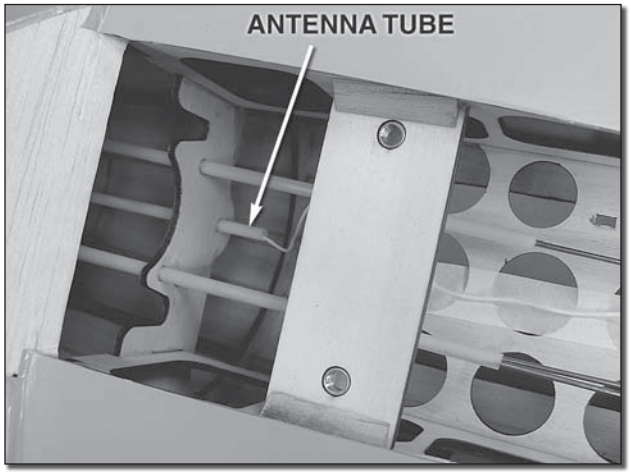
❏ 3. Install your radio switch and charge jack. Ours was mounted on the side of the fuselage. Plug the battery lead into the charge jack. Secure the connection with heat shrink tubing, tape or some similar method to be sure the lead does not come unplugged.



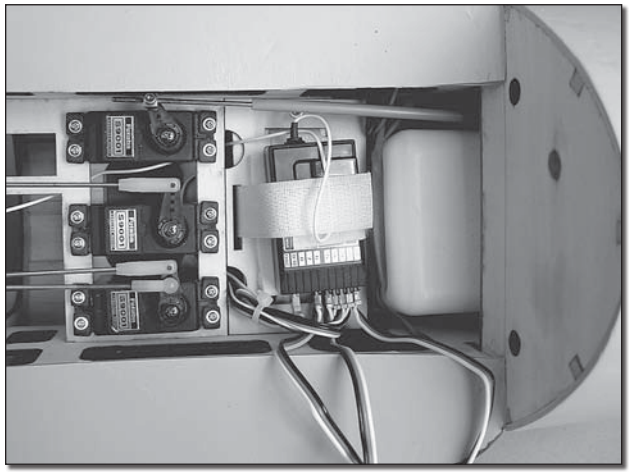
❏ 4. Place the tray into the fuselage and onto the hardwood rails between the servo tray and the fuel tank. When installing the tray the battery should be towards the inside of the fuselage. Drill a 1/16" [1.6mm] hole through the mounting holes. Secure the tray with two #2 x 3/8" [10mm] screws and two #2 flat washers.



❏ 5. Plug the lead from the switch into the receiver. Place a piece of foam between the tray and the receiver and the secure the receiver to the tray with the Velcro.



❏ 6. Route the receiver antenna through the fuselage to the antenna tube located between the pushrod guide tubes.



❏ 7. Install a 6" [152mm] servo extension into the flap, aileron and retractable landing gear channels of the receiver. Plug the elevator, rudder and throttle servos into the receiver. Pay careful attention, routing the wires to assure a clean installation.

❏ 8. Plug the two flap servos and the two aileron servos in the wing into “Y” harnesses. Secure the servos to the “Y” harness with shrink tubing, tape or some other method to keep them from coming unplugged.

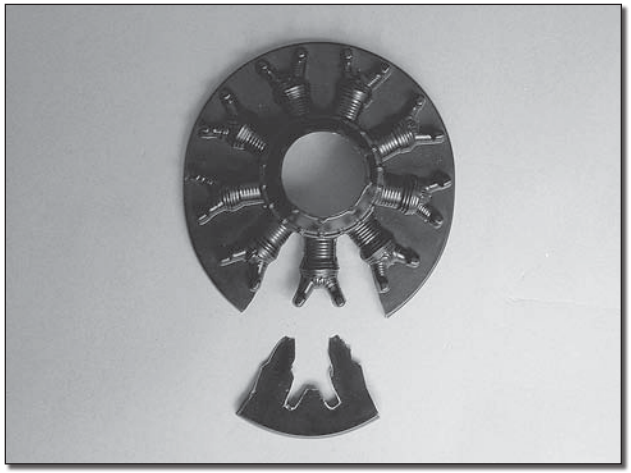
❏ 9. With your radio system turned on, adjust the position of all of the servo arms and linkages until all of the control surfaces are neutral.

P-47s flew more than 546,000 combat sorties between March 1943 and August 1945, destroying 11,874 enemy aircraft, some 9,000 locomotives, and about 6,000 armored vehicles and tanks. Only 0.7 per cent of the fighters of this type dispatched against the enemy were lost in combat. As a testament to the survivability of the P-47, it should be noted that the top ten aces who flew the P-47 returned home safely.

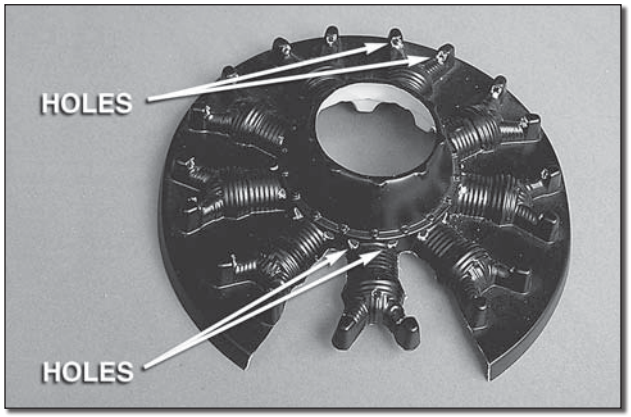
FINISH THE MODEL

INSTALL THE COWL & DUMMY ENGINE

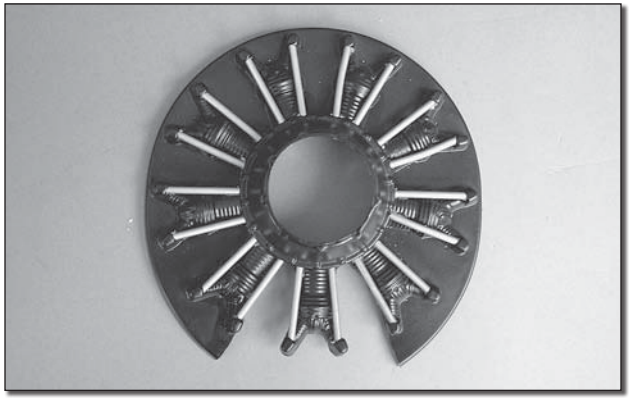
Before installing the cowl you must give some consideration to the mufflers. If you have installed a two-stroke engine you will need to cut a lot of the cowl for the standard muffler. A “Pitts” style muffler will help minimize the amount of the cowl you will need to cut. The four-stroke muffler fits pretty well but a better fit can be achieved if you utilize the additional exhaust header that will be mentioned. We are showing the installation of the O.S. .91 four-stroke engine. Modify the instructions as needed to fit your particular engine.

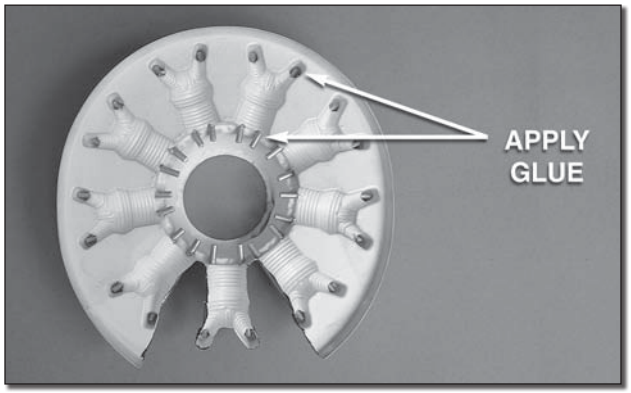


❏ 1. Cut away the portion of the dummy engine that will be in front of the engine cylinder. This is needed for proper cooling of the engine. When determining the exact location to cut, note that the cylinders should be oriented as shown in the picture. We were able to cool the O.S. .91 by only cutting away a small portion of the vacuum formed engine as shown in the picture.



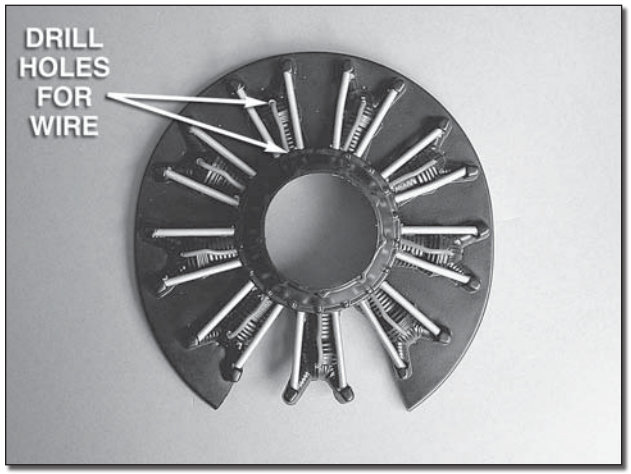
❏ 2. Drill 1/8" [3mm] holes into each of the cylinder heads and at the base of the cylinder as shown.



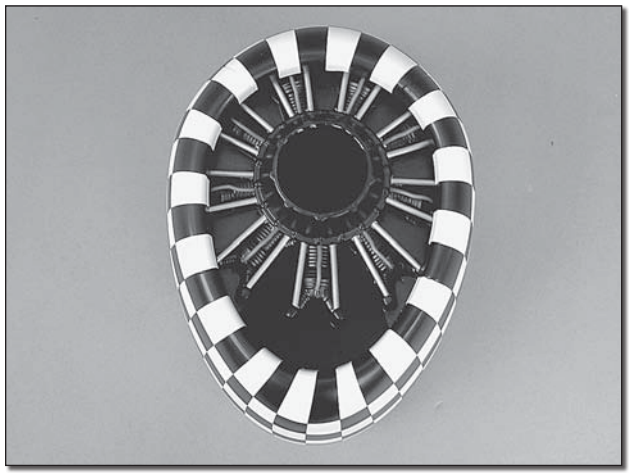


❏ 3. Install one of the 1/8" aluminum tubes into each of the sets of holes. Apply a drop of glue on the backside of the dummy engine where the tube contacts the plastic to keep them in place.

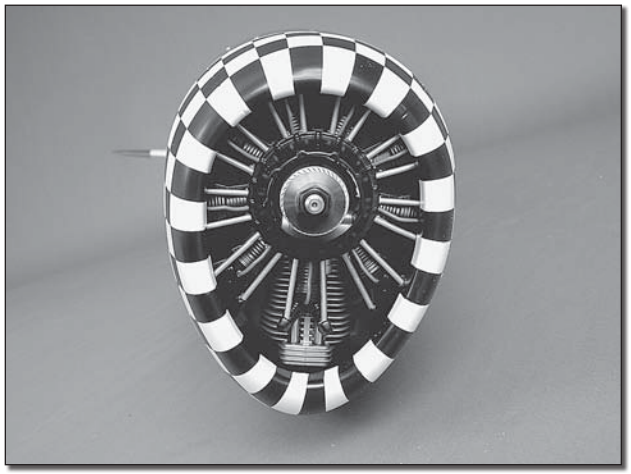
❏ 4. Cut the 12" [305mm] red wire into nine 1-3/8" [35mm] lengths.



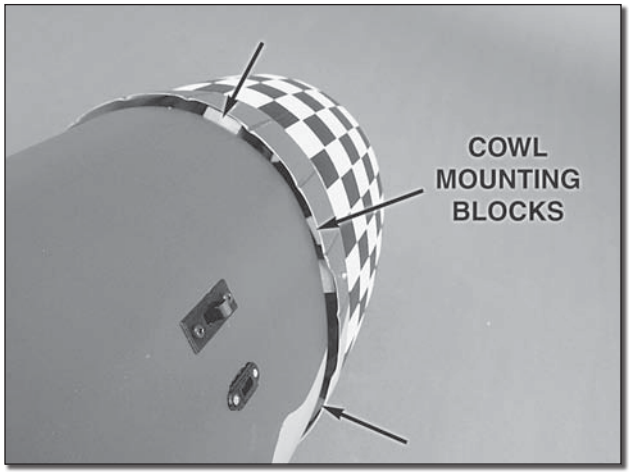
❏ 5. Drill a 1/16" [1.6mm] hole into the cylinder and at the base of the cylinder. Install a red wire into the holes to replicate the spark plug lead. Secure the wire with glue on the back side of the dummy engine in the same way it was done for the tubes.

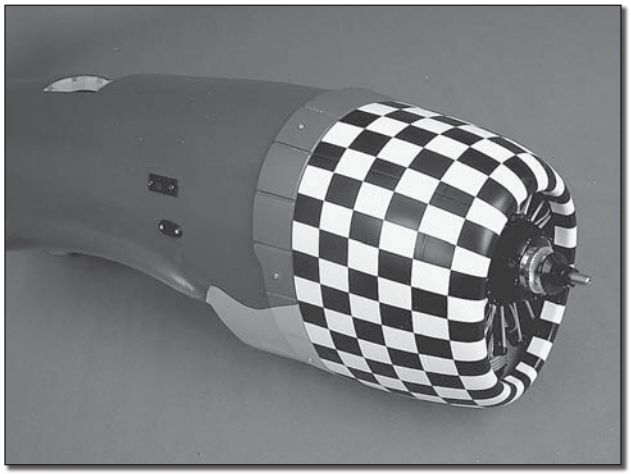


❑ 6. Tack glue the dummy engine into the cowl. Place the cowl onto the fuselage and make sure it centers with the engine crankshaft. Adjust the dummy engine as needed. Pay careful attention to the clearance of the dummy cylinder where it sits in front of the engine. You may need to remove additional material from the back of the dummy engine to get clearance for the engine. Once you are satisfied with the fit, permanently glue the dummy engine to the cowl. A mixture of 6-minute epoxy and micro balloons works well for this.



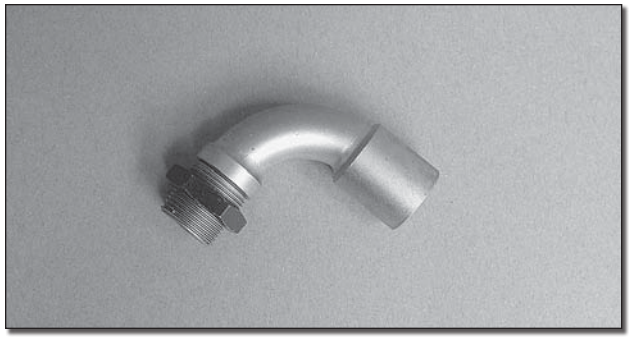
❑ 7. Position the cowl over the engine and onto the fuselage. Check to make sure the dummy engine clears the engine. If necessary trim the dummy engine to get clearance for the engine. Center the cowl on the engine and slide it back onto the fuselage and the cowl mounting blocks.



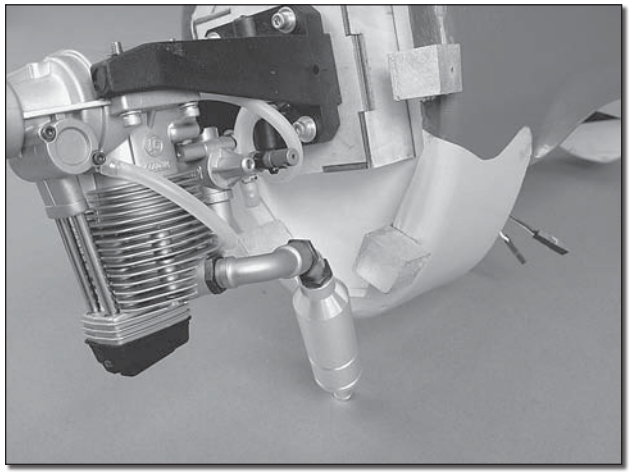


❑ 8. From behind the cowl, the cowl mounting blocks are visible. With the cowl properly positioned, drill a 1/16" [1.6mm] hole through the cowl and into one mounting block. The hole should be approximately ½" [13mm] back from the trailing edge of the cowl. Install a #2 x 3/8" [10mm] screw to hold the cowl in place. (When you are mounting the cowl, #2 washers should also be used. But since we will be removing and installing the cowl several times, don't worry about the washers now.) Do this for each of the five remaining mounting blocks. Check the position of the cowl each time before you drill.

❑ 9. After you have installed the cowl, remove the cowl. Apply a couple drops of thin CA into the holes to harden the threads.



❑ 10. For our installation we used a 90 degree exhaust header (OSMG2624) in conjunction with the stock muffler. This allows you to divert the muffler under the fuselage rather than out the side of the cowl.



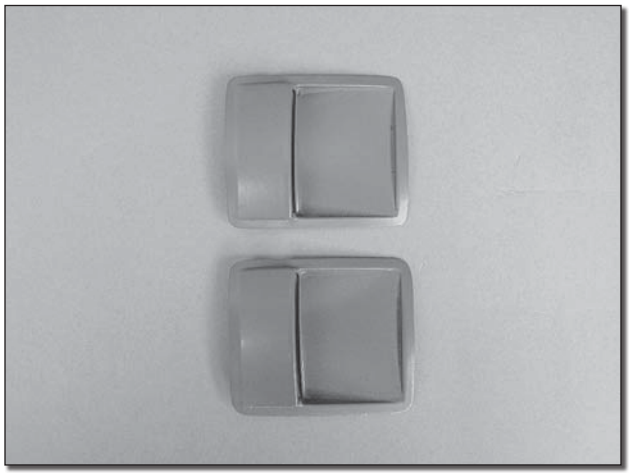
❑ 11. Assemble the muffler and header to position the muffler where you want it to exit the cowl. Be sure to use thread locker to assure everything stays tight. When you are satisfied, install the pressure line to the muffler.

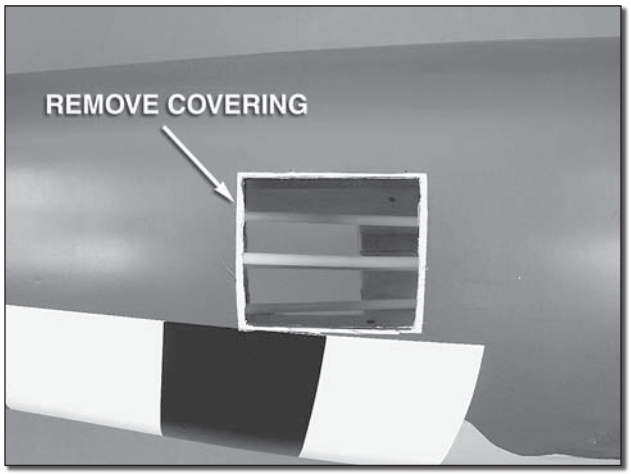
❏ 12. Carefully cut the cowl to allow it to fit around the muffler. You may be tempted to keep the opening in the bottom of the cowl as small as possible by using a remote starter. Please keep in mind that you do have to have some area for the air to escape the cowl. If you do not, you will most likely experience engine overheating. Cutting the cowl as shown, we had no overheating issues and there was adequate room for the glow driver. Regardless of your engine choice, you must leave an area for exit air of at least 6 square inches [39 square centimeters]. The area around the cowl is not sufficient for adequate cooling.

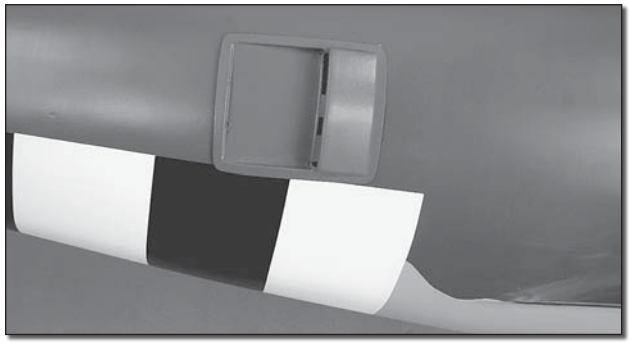
❏ 13. Finish cutting any additional openings in the cowl. The needle valve will most likely require an extension to make adjustments from outside of the cowl. See your engine manufacturer's manual for additional information.

INSTALL THE SCALE DETAILS

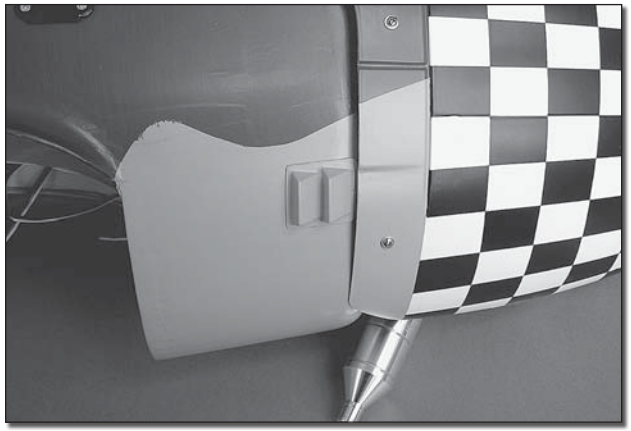
For all of the detail pieces it is important that you lightly scuff the back side of the plastic with 220-grit sandpaper to get good adhesion.



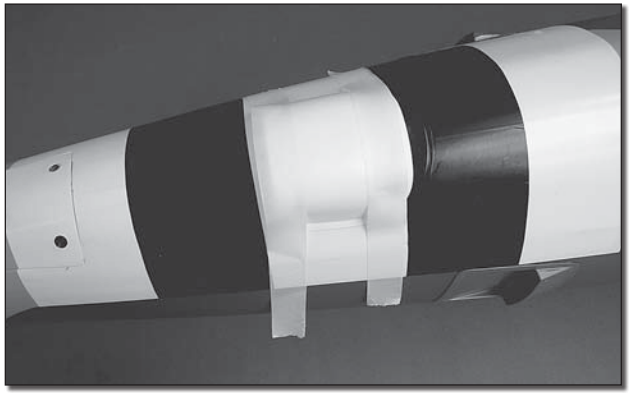


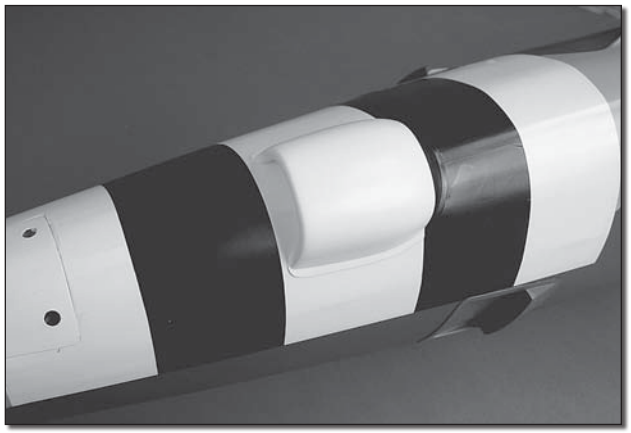


❏ 1. Glue the air exhaust panels facing rearward as shown. Carefully remove 1/16" [1.6mm] of covering from around the opening using the same technique used earlier. Removing the covering will provide a better glue bond. Do this for both sides of the fuselage.



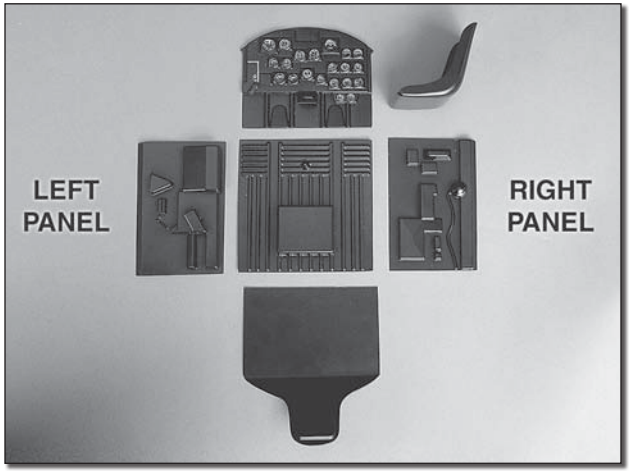
❏ 2. Mark the location for the forward exhaust scoops. Cut a small amount of covering away from the fuselage and then glue the scoops in place.



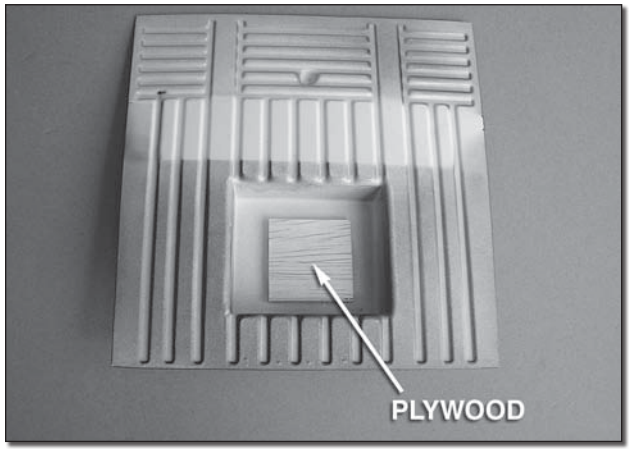


❏ 3. Mark the location for the bottom scoop. This is in the center of the fuselage and should be aligned with the black and white stripes. This scoop does not have a lot of gluing area, making it difficult to cut enough covering away to make a difference. It is suggested that you glue this directly to the covering with 6-minute epoxy. In our testing this held very well. Mix a small amount of epoxy and tape the scoop in place. Clean up any glue residue with alcohol.

INSTALL THE COCKPIT INTERIOR, PILOT AND CANOPY

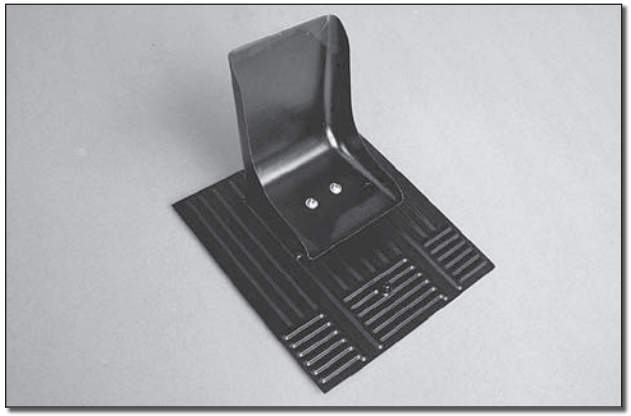


❏ 1. The cockpit is made up of the floor, two side panels, instrument panel, back/head rest and the seat. The components are pre-painted but scale minded modelers may wish to add additional detail and color to their cockpit. Now is a good time to make these additions.



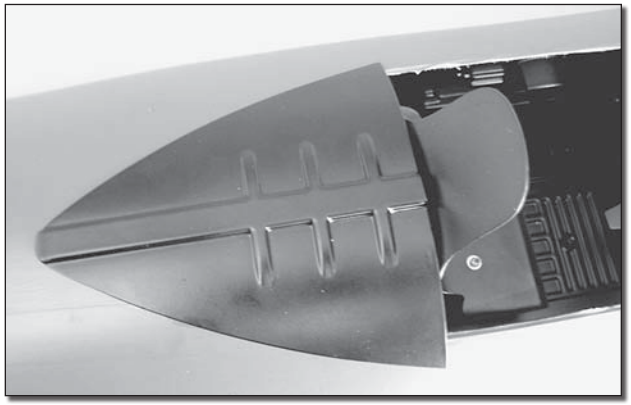
❏ 2. If you will be installing a pilot he will be glued to the seat. To be sure the weight of the pilot coupled with stresses in flight does not cause the seat to come loose, it is recommended that you glue a 1" [25mm] square piece of plywood (not included) under the riser on the floor. This will allow you to glue and screw the seat in place.

❏ 3. Test fit the interior to the fuselage. Install the back/head rest first followed by the floor, instrument panel and side panels. Trim as needed to get a good fit.



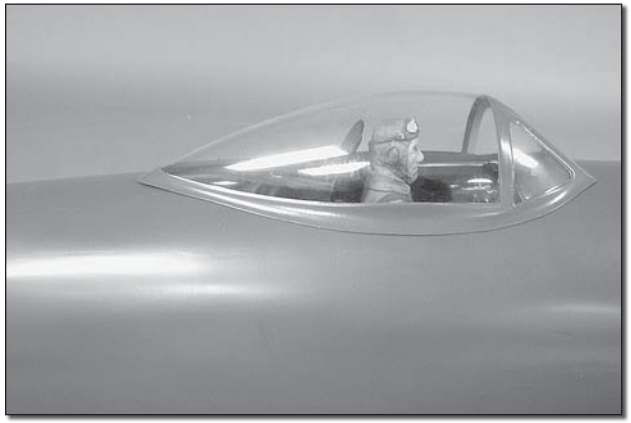
❏ 4. Epoxy the seat in place. When the glue has cured, drill two 1/16" [1.6mm] holes through the seat and into the plywood. Screw the seat in place with #2 x 3/8" [10mm] screws and #2 flat washers.

❑ 5. Glue all of the components into the fuselage. Install the back/head rest first followed by the floor, instrument panel and side panels. **Note:** The side panel with the throttle quadrant goes on the left side.



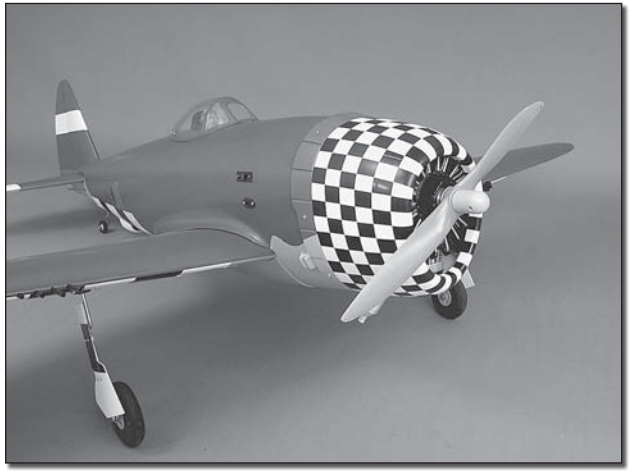
❑ 6. Glue the back deck behind to the top of the fuselage behind the cockpit area.

❑ 7. We have found that the 1/7th scale WWII American Pilot bust from Century Jet Models works well in this model. They offer both a full body (CJMQ 9038) and a bust. You will have to cut away some of the body to fit the full body pilot. This may make you consider using the bust only. (CJMQ 9036) Both versions require minor assembly and are unpainted. If you are installing a pilot glue him in place now. If you will be doing this later, skip installing the canopy until you have the pilot completed.



❑ 8. Glue the canopy to the covering with Super Z RC56 canopy glue. Tape the canopy in place until the glue dries.

INSTALL THE PROPELLER AND SPINNER



❑ 1. The spinner included with this kit can be tightened against the propeller without the use of a drive washer.

APPLY THE DECALS

We have included three different trim schemes for this model, giving you some flexibility in the final look of the model. Please refer to the sketches on this page for the placement of the major decals.

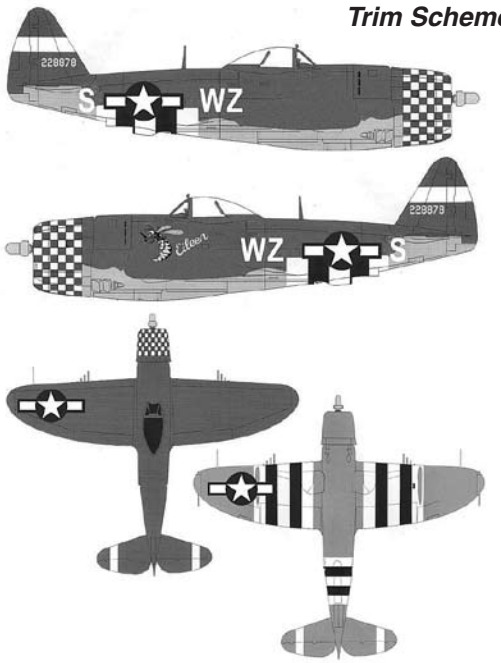
1. Use scissors or a sharp hobby knife to cut the decals from the sheet.

2. Be certain the model is clean and free from oily fingerprints and dust. Prepare a dishpan or small bucket with a mixture of liquid dish soap and warm water—about one teaspoon of soap per gallon of water. Submerse the decal in the soap and water and peel off the paper backing. **Note:** Even though the decals have a "sticky-back" and are not the water transfer type, submersing them in soap & water allows accurate positioning and reduces air bubbles underneath.

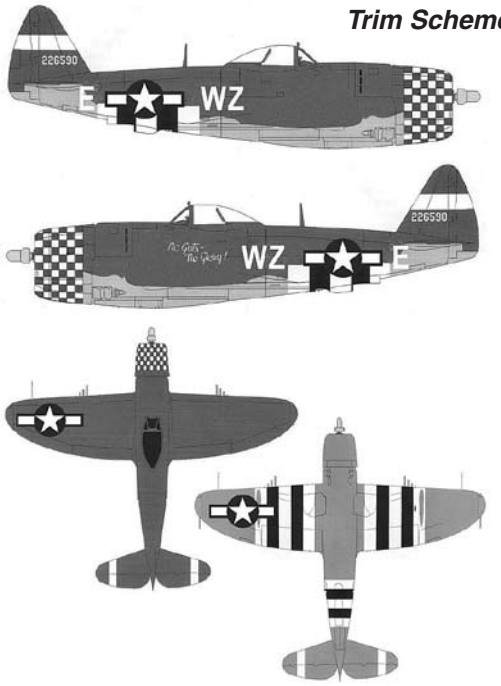
3. Position the decal on the model where desired. Holding the decal down, use a paper towel to wipe most of the water away.

4. Use a piece of soft balsa or something similar to squeegee remaining water from under the decal. Apply the rest of the decals the same way.

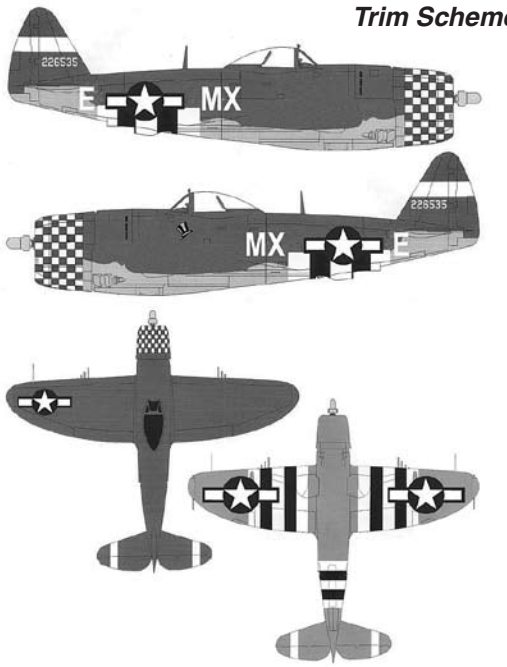
Trim Scheme 1



Trim Scheme 2



Trim Scheme 3



Before the war was over, a total of 15,579 Thunderbolts were built, about two-thirds of which reached operational squadrons overseas.

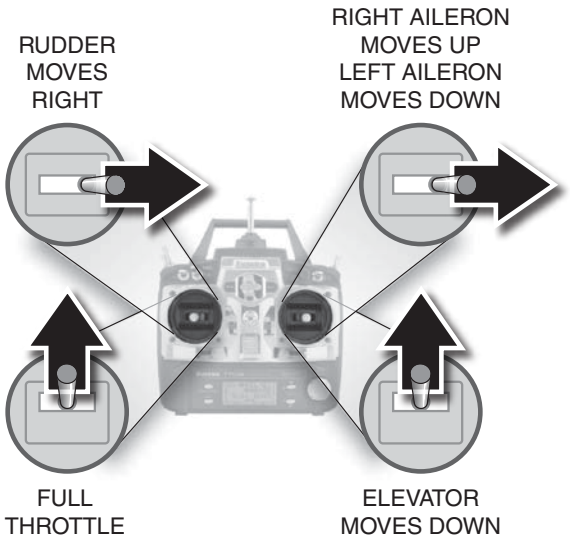
GET THE MODEL READY TO FLY

CHECK THE CONTROL DIRECTIONS

❏ 1. Turn on the transmitter and receiver and center the trims. If necessary, remove the servo arms from the servos and reposition them so they are centered. Reinstall the screws that hold on the servo arms.

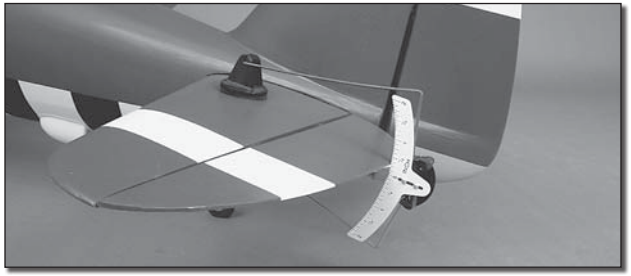
❏ 2. With the transmitter and receiver still on, check all the control surfaces to see if they are centered. If necessary, adjust the clevises on the pushrods to center the control surfaces.

4-CHANNEL RADIO SETUP (STANDARD MODE 2)



❏ 3. Make certain that the control surfaces and the carburetor respond in the correct direction as shown in the diagram. If any of the controls respond in the wrong direction, use the servo reversing in the transmitter to reverse the servos connected to those controls. Be certain the control surfaces have remained centered. Adjust if necessary.

SET THE CONTROL THROWS



Use a Great Planes AccuThrow (or a ruler) to accurately measure and set the control throw of each control surface as indicated in the chart that follows. If your radio does not have dual rates, we recommend setting the throws at the **low** rate setting.

NOTE: The throws are measured at the **widest part** of the elevators, rudder and ailerons.

These are the recommended control surface throws:

	HIGH RATE		LOW RATE	
ELEVATOR	Up	Down	Up	Down
	1/2" [13mm] 11°	1/2" [13mm] 11°	3/8" [10mm] 10°	3/8" [10mm] 10°
RUDDER	Right	Left	Right	Left
	1-3/8" [35mm] 21°	1-3/8" [35mm] 21°	1" [25mm] 15°	1" [25mm] 15°
AILERONS	Up	Down	Up	Down
	9/16" [14mm] 16°	9/16" [14mm] 16°	3/8" [10mm] 11°	3/8" [10mm] 11°
FLAPS	FULL	Down	ONE HALF	Down
		2" [51mm] 36°		7/8" [22mm] 16°

Note: When flaps are deployed you can expect the airplane to balloon slightly. To minimize this we mixed 1/32" [0.8mm] down elevator trim when the flaps were deployed. If you have a flap to elevator mix you may wish to consider this mix as well.

IMPORTANT: The P-47 ARF has been **extensively** flown and tested to arrive at the throws at which it flies best. Flying your model at these throws will provide you with the greatest chance for successful first flights. If, after you have become accustomed to the way the P-47 flies, you would like to change the throws to suit your taste, that is fine. However, too much control throw could make the model difficult to control, so remember, "more is not always better."

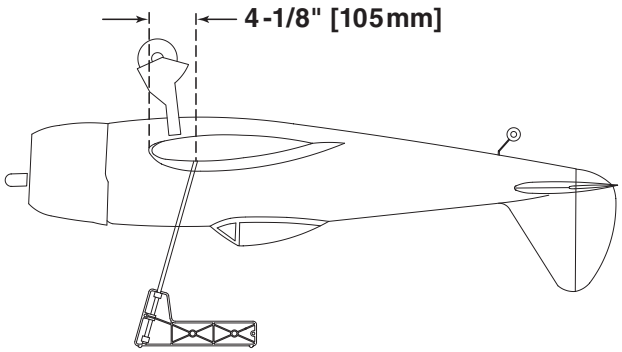
BALANCE THE MODEL (C.G.)

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

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

❏ 1. Use a felt-tip pen or 1/8" [3mm]-wide tape to accurately mark the C.G. on the **top** of the wing on both sides of the fuselage. The C.G. is located 4-1/8" [105mm] back from the leading edge of the wing where it meets the fuse.

This is where your model should balance for the first flights. Later, you may wish to experiment by shifting the C.G. up to 3/8" [10mm] forward or 3/8" [10mm] back to change the flying characteristics. Moving the C.G. forward may improve the smoothness and stability, but the model may then require more speed for takeoff and make it more difficult to slow for landing. Moving the C.G. aft makes the model more maneuverable, but could also cause it to become too difficult to control. In any case, **start at the recommended balance point** and do not at any time balance the model outside the specified range.



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

❏ 3. If the tail drops, the model is "tail heavy" and the battery pack and/or receiver must be shifted forward or weight must be added to the nose to balance. If the nose drops, the model is "nose heavy" and the battery pack and/or receiver must be shifted aft or weight must be added to the tail to balance. If possible, relocate the battery pack and receiver to minimize or eliminate any additional ballast required. If additional weight is required, nose weight may be easily added by using a "spinner weight" (GPMQ4645 for the 1 oz. [28g] weight, or GPMQ4646 for the 2 oz. [57g] weight). If spinner weight is not practical or is not enough, use Great Planes (GPMQ4485) "stick-on" lead. A good place to add stick-on nose weight is to the firewall (don't attach weight to the cowl—it is not intended to support weight). Begin by placing incrementally increasing amounts of weight on the bottom of the fuse over the firewall until the model balances. Once you have determined the amount of weight required, it can be permanently attached. If required, tail weight may be added by cutting open the bottom of the fuse and gluing it permanently inside.

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

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

BALANCE THE MODEL LATERALLY

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

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

PREFLIGHT

IDENTIFY YOUR MODEL

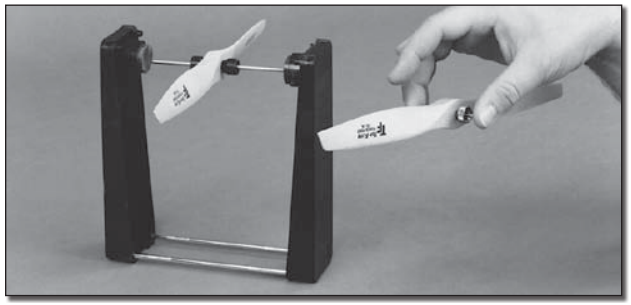
No matter if you fly at an AMA sanctioned R/C club site or if you fly somewhere on your own, you should always have your name, address, telephone number and AMA number on or inside your model. It is **required** at all AMA R/C club flying sites and AMA sanctioned flying events. Fill out the identification tag on page 33 and place it on or inside your model.

CHARGE THE BATTERIES

Follow the battery charging instructions that came with your radio control system to charge the batteries. 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.

CAUTION: Unless the instructions that came with your radio system state differently, the **initial** charge on **new** transmitter and receiver batteries should be done for 15 hours **using the slow-charger that came with the radio system**. This will "condition" the batteries so that the next charge may be done using the fast-charger of your choice. If the initial charge is done with a fast-charger, the batteries may not reach their full capacity and you may be flying with batteries that are only partially charged.

BALANCE PROPELLERS



Carefully balance your propeller and spare propellers before you fly. An unbalanced prop can be the single most significant cause of vibration that can damage your model. Not only will engine

mounting screws and bolts loosen, possibly with disastrous effect, but vibration may also damage your radio receiver and battery. Vibration can also cause your fuel to foam, which will, in turn, cause your engine to run hot or quit.

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

GROUND CHECK

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

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. Repeat this test **with the engine running** at various speeds with an assistant holding the model, using hand signals to show you what is happening. If the control surfaces do not respond correctly, **do not fly!** Find and correct the problem first. Look for loose servo connections or broken wires, corroded wires on old servo connectors, poor solder joints in your battery pack or a defective cell, or a damaged receiver crystal from a previous crash.

ENGINE SAFETY PRECAUTIONS

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

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

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

Use safety glasses when starting or running engines.

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

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

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

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

Make all engine adjustments from behind the rotating propeller.

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

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

AMA SAFETY CODE (excerpts)

Read and abide by the following excerpts from the Academy of Model Aeronautics Safety Code. For the complete Safety Code refer to *Model Aviation* magazine, the AMA web site or the Code that came with your AMA license.

GENERAL

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

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

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

5) I will not fly my model unless it is identified with my name and address or AMA number, on or in the model. Note: This does not apply to models while being flown indoors.

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

RADIO CONTROL

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

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

3) At all flying sites a straight or curved line(s) must be established in front of which all flying takes place with the other side for spectators. Only personnel involved with flying the aircraft are allowed at or in the front of the flight line. Intentional flying behind the flight line is prohibited.

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

5) **I will not knowingly operate my model within three miles of any pre-existing flying site except in accordance with the frequency sharing agreement listed** [in the complete AMA Safety Code].

9) Under no circumstances may a pilot or other person touch a powered model in flight; **nor should any part of the model other than the landing gear, intentionally touch the ground, except while landing.**

CHECK LIST

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

❏ 18. Tighten the propeller nut and spinner.

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

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

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

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

FLYING

The P-47 ARF is a great-flying model that flies smoothly and predictably. The P-47 does not, however, possess the self-recovery characteristics of a primary R/C trainer and should be flown only by experienced R/C pilots.

FUEL MIXTURE ADJUSTMENTS

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

CAUTION (THIS APPLIES TO ALL R/C AIRPLANES): If, while flying, you notice an alarming or unusual sound such as a low-pitched "buzz," this may indicate control surface *flutter.* Flutter occurs when a control surface (such as an aileron or elevator) or a flying surface (such as a wing or stab) rapidly vibrates up and down (thus causing the noise). In extreme cases, if not detected immediately, flutter can actually cause the control surface to detach or the flying surface to fail, thus causing loss of control followed by an impending crash. The best thing to do when flutter is detected is to slow the model **immediately** by reducing power, then land as soon as safely possible. Identify which surface fluttered (so the problem may be resolved) by checking all the servo grommets for deterioration or signs of vibration. Make certain all pushrod linkages are secure and free of play. If it fluttered once, under similar circumstances it will probably flutter again unless the problem is fixed. Some things which can cause flutter are; Excessive hinge gap; Not mounting control horns solidly; Poor fit of clevis pin in horn; Side-play of wire pushrods caused by large bends; Excessive free play in servo gears; Insecure servo mounting; and one of the most prevalent causes of flutter; Flying an over-powered model at excessive speeds.

TAKEOFF

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

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

FLIGHT

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

Take it easy with the P-47 ARF for the first few flights, gradually getting acquainted with it as you gain confidence. Adjust the trims to maintain straight and level flight. After flying around for a while, and while still at a safe altitude with plenty of fuel, practice slow flight and execute practice landing approaches by reducing the throttle to see how the model handles at slower speeds. Add power to see how she climbs as well. Continue to fly around, executing various maneuvers and making mental notes (or having your assistant write them down) of what trim or C.G. changes may be required to fine tune the model so it flies the way you like. Mind your fuel level, but use this first flight to become familiar with your model before landing.

LANDING

To initiate a landing approach, lower the throttle while on the downwind leg. Allow the nose of the model to pitch downward to gradually bleed off altitude. Deploy the flaps. A small amount of ballooning will occur but the plane should begin to settle as you lose speed. We found that mixing in 2 degrees of down elevator minimized this tendency. You may wish to experiment with a flap to elevator mix). When deploying the flaps do not allow the plane to pitch up and stall. Make elevator corrections as needed to maintain a steady descent. (***Note:*** *Flaps are not required for landing but they will substantially reduce the landing speed. We recommend the use of flaps for the P-47.*) Continue to lose altitude, but maintain airspeed by keeping the nose down as you turn onto the crosswind leg. Make your final turn toward the runway (into the wind) keeping the nose down to maintain airspeed and control. Level the attitude when the model reaches the runway threshold, modulating the throttle as necessary to maintain your glide path and airspeed. If you are going to overshoot, smoothly advance the throttle (always ready on the right rudder to counteract torque) and climb out to make another attempt. When you're ready to make your landing decrease the engine and touch down level on the main wheels. The tail will settle on the runway as you begin to lose speed. Once the model is on the runway and has lost flying speed, hold up elevator to place the tail on the ground, regaining tail wheel control. From our experience, this plane lands best if you do a two point landing on the main wheels rather than trying to flare to a three point landing.

One final note about flying your model. Have a goal or flight plan in mind for **every** flight. This can be learning a new maneuver(s), improving a maneuver(s) you already know, or learning how the model behaves in certain conditions (such as on high or low rates). This is not necessarily to improve your skills (*though*

it is never a bad idea!), but more importantly so you do not surprise yourself by impulsively attempting a maneuver and suddenly finding that you've run out of time, altitude or airspeed. Every maneuver should be deliberate, not impulsive. For example, if you're going to do a loop, check your altitude, mind the wind direction (anticipating rudder corrections that will be required to maintain heading), remember to throttle back at the top, and make certain you are on the desired rates (high/low rates). A flight plan greatly reduces the chances of crashing your model just because of poor planning and impulsive moves. **Remember to think.**

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

GOOD LUCK AND GREAT FLYING!

This model belongs to:

_____
Name

_____
Address

_____
City, State, Zip

_____
Phone number

_____
AMA number

O.S.® FS-91 Surpass™ II

- Displacement: 0.92 cu in
- Bore: 1.09 in
- Stroke: 0.98 in
- RPM Range: 2,000-12,000
- Output: 1.6 bhp @ 11,000 rpm
- Weight w/o Muffler: 22.6 oz
- Weight w/Muffler: 24.5 oz
- Includes: glow plug, muffler, header, 60P Carb

The power that lasts!

The FS-91-S II is a sound investment, no matter how you look at it. It's more than the deeper, richer sound of a 4-stroke exhaust. It can swing larger, more aggressively pitched props than a 2-stroke. It can deliver more straight-up climbing power than you'd imagine while offering more fuel economy than you'd expect. Sturdy, ringed piston design contributes to trademark O.S. durability and long life. 2-Year limited warranty protection is included as well, along with a permanently lubricated, rubber-sealed rear ball bearing and corrosion-resistant plating on the crankshaft, camshaft and piston. A reversible 60P carb offers more installation ease and options for the pilot.

OSMG0896

Futaba®

10C 10-Channel FASST™ Computer System

FUTABA ADVANCED SPREAD SPECTRUM TECHNOLOGY
2.4GHz FASST

Pro-level features—

Sport system price—

Fastest response anywhere!

FUTK9250	10C FASST Tx/Rx Air Mode 2
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FUTK9252	10C FASST Tx/Rx Air Mode 1
FUTK9253	10C FASST Tx/Rx Heli Mode 1

What sets the Futaba 10C apart from 9-channel systems is its ability to deliver the fastest response, best resolution and most dependability in all of R/C. Response is almost two times faster than the nearest system. That's matched to cutting-edge 2048 resolution and the virtually "bulletproof" RF link FASST systems offer. Easy Link™ locks the receiver to the transmitter's signal with the touch of a button — and that's just one of the FASST features that make the 10C a better choice. But with the 10C, better also includes offering: logic switches (courtesy of Smart Switch™ technology); 4 flight modes and 7-point throttle and pitch curves for helis; 7-point throttle curves and two gyro settings for airplanes; and butterfly-to-elevator mixing and a motor cut menu for sailplanes, among many other things. More memory, more mixes, a bigger, brighter, backlit LCD — the 10C offers more all the way around…and offers it for far less than you'd expect.

TOP FLITE®

P-51D MUSTANG

GOLD ARF EDITION™

1/7 Scale P-51 Mustang ARF

- Wingspan: 64.5 in
- Wing Area: 721 in²
- Weight: 8.8 -10 lb
- Wing Loading: 28-32 oz/ft²
- Length: 56 in
- Requires: 2-stroke .60-.91 or 4-stroke .91-1.20 engine, 6-channel radio w/7 standard & 1 retract servo

Surpasses all other ARFs in appearance, performance and construction!

The Mustang has long been a modeler favorite among WWII-era aircraft and this impressive ARF is one reason why! Flight-ready in just 18-25 hours, this Allied wonder features precisely interlocking wood parts, prebuilt sections and a factory-applied MonoKote® trim scheme. A matte finish and historically accurate insignia and markings add to the realistic looks without adding to the assembly work. Molded parts — including a painted fiberglass cowl and air scoop and clear plastic canopy — help define the Mustang's bold, clean look with maximum speed and minimum work. Decals help add realistic touches to the instrument panel, and both are included as parts of a detailed cockpit interior. Other features include mechanical retracts and a high-quality aluminum spinner. Its scale details make it display-worthy, but dual aileron servos in both wing halves make tighter takeoffs and mid-air maneuvers a must!

TOPA0950


TOP FLITE®