

GOTHA G.IV HEAVY BOMBER

1 / 15TH SPORT-SCALE ARF R/C MODEL AIRPLANE

INSTRUCTION MANUAL

*Pictured with optional
front- and rear-facing
machine guns, twin
Uranus 28309 motors
and 8x6 propellers.*



The Gotha G.IV heavy bomber was used by the Imperial German Air Service during World War I. Designed for long-range service, on 25 May 1917, Gotha G.IVs bombing London caused the most severe casualties of any bombing raid of the war.

Up to 1,100 pounds (500 kg) of bombs were carried externally. The Gotha G.IV pilot's seat was offset to port and a connecting walkway allowed crew members to move between gun stations. An unusual innovation was a "gun tunnel" – the underside of the rear fuselage was open, and there was a slot in the upper surface of the fuselage that allowed the rear gunner to fire down through the fuselage to provide defense against attacks from below and behind as shown at the right.



This sport-scale ARF twin electric-powered pusher is designed for mid-to-advanced-level ARF-assemblers and pilots, features a 62 1/2-inch wingspan, outer wing panels that are removable, and scale-looking engine nacelles and landing gear.

We invite you to enjoy the pride of ownership and the joy of flying this beautiful ARF sport-scale model of the famous GOTH A G.IV heavy bomber.

Maxford [®] USA

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I. SAFETY PRECAUTIONS & ASSEMBLY TIPS

(IMPORTANT – READ THIS SECTION BEFORE YOU BEGIN ASSEMBLY)

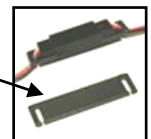
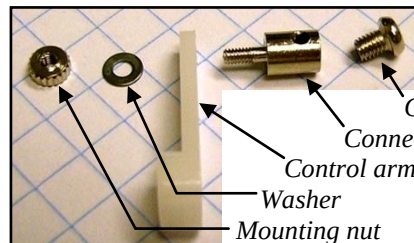
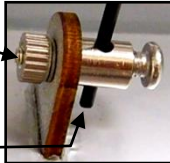
1. This product should not be considered a toy, but rather a sophisticated, working model that functions much like a full-scale airplane. Because of its performance capabilities, this product, if not assembled and operated correctly, could cause injury to you or spectators and damage to property. Maxford USA provides you with a high-quality, thoroughly tested model airplane kit with assembly instructions. However, the quality and capabilities of your finished model airplane depend on how you assemble it, and your safety depends on how you use and fly it. Any testing or flying of this model airplane is done entirely at your own risk.
2. Assemble this model airplane according to these instructions. Do not alter or modify the model beyond the assembly and power-system options covered in these instructions, as doing so may result in an unsafe or unworkable model. If the instructions differ from the photos, the written instructions should be considered correct. If you have any question or concern about these instructions, before you proceed with assembly of this product, contact your dealer or speak to a Maxford USA customer service representative at 562-529-3988 (Monday through Friday, except national holidays, 9 AM to 5 PM Pacific Time).
3. While this kit has been flight-tested to meet or exceed our rigid performance and reliability standards in normal use, if you elect to perform any extremely high-stress flying, such as racing or advanced aerobatics, or if you install a much larger power system than specified, you (the buyer or user of this product) are solely responsible for taking any and all necessary steps to reinforce the high-stress points and/or substitute hardware that is more suitable for such increased stresses.
4. Throughout the lifetime of this model, use only the Maxford USA-recommended power system and a new or well-maintained radio-control system.
5. It is your responsibility to install the receiver and connect the R/C components in such a way that this model airplane passes all applicable safety/range tests and that the power system and controls operate correctly and smoothly.
6. Recheck the operation of this model airplane before every flight to ensure that all equipment is still operating correctly and that the model has remained structurally sound. Also before every flight, check all electrical, control and structural connections; do not fly without replacing any that you find damaged or worn.
7. Before you begin assembly of this model airplane, read all instructions and test-fit each part to ensure you fully understand the instructions and that no parts are missing, damaged or unsatisfactory. Temperature and/or humidity differences between the factory, our warehouse and your home or workshop may dictate the need for slight adjustments to the wings, struts and/or the vertical or horizontal stabilizer's mounting surfaces to ensure proper alignment; however, we recommend you contact us before you attempt any such adjustments.

8. To help ensure the security of any servo-to-extension connections, optional Maxford USA servo-extension safety clips are recommended.

9. Assemble EZ-Link connectors (which may be included or an option for this model) as shown at the right.

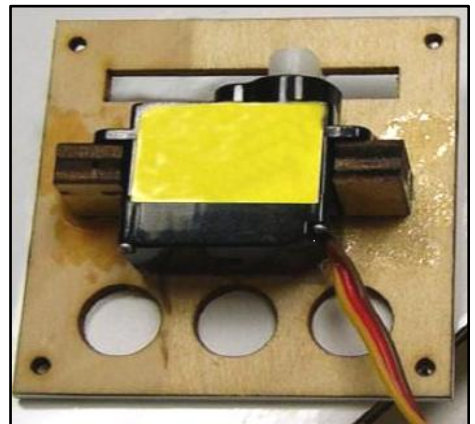
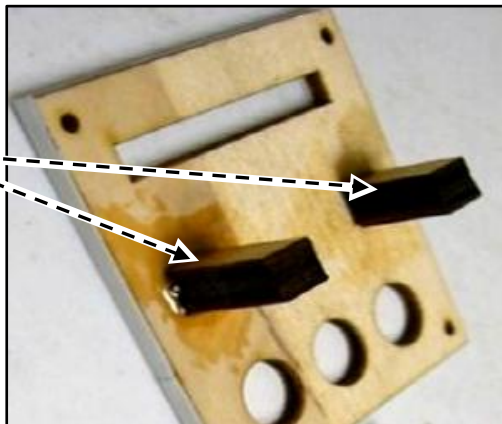
While applying threadlock compound or CA adhesive, be careful to **NOT** glue the EZ-Link connector to the control arm or mounting tab.

Be careful to not let the pushrod bind

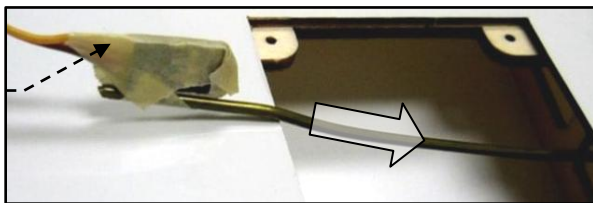


10. As shown at the right, this model allows customers some choice in aileron servo selection:

- a. Test-fit your aileron servos and the supplied wood mounting pedestals to the servo hatch covers.
- b. Use epoxy to attach the mounting pedestals to each servo hatch cover. Use the hardware provided with your servos to mount the aileron servos to their hatch covers.
- c. Using your radio or a servo tester, center the aileron servos.



- d. Insert a piece of stiff wire through the wing from the root into the servo bay. Tape the end of the servo extension to the wire and pull it through the wing.-----
- e. Guide the servo wire into the servo bay as instructed for the model you are assembling. Cover the servo bay with the servo-hatch. Secure the hatch to the wing with screws or glue.



11. If you are not an experienced ARF assembler or R/C pilot or have not flown this type of model before, we strongly urge you to get assistance from an experienced ARF assembler or R/C pilot.
12. You may use 30-minute epoxy to attach critical parts permanently (such as where the horizontal and vertical stabilizers attach at the end of the fuselage) and apply threadlock compound to secure all airframe components from vibration.
13. If you have concern about the security of any factory fabrication procedure(s), you may apply 30-minute epoxy around the perimeter of such part(s) as an extra safety precaution.
14. This model may include some plastic, fiberglass and/or carbon-fiber-reinforced parts. If you drill, grind or sand any such part, always wear safety goggles, a particle mask and rubber gloves to guard yourself from eye, skin and respiratory-tract irritation; never blow into the part as the dust may blow back into your face.
15. Minor production details may vary.
16. Check the Mylar covering material's joints and surfaces; if necessary, carefully use an iron (do NOT set the iron's temperature too high) to secure the edges and to tighten any loosened areas. Recheck and retighten from time to time.
17. Read all instructions included with your batteries and charger. Failure to follow all instructions could result in permanent damage to the battery, its surroundings, and bodily harm! If you crash this model airplane, check whether the batteries are damaged. Do NOT attempt to use or recharge a damaged battery.

II. WARRANTY, LIABILITY WAIVER & RETURN POLICY

Maxford USA guarantees this kit to be free from defects in material and workmanship at the time of purchase. All our products have been inspected in our factory and are checked again when shipped from our warehouse. However, Maxford USA cannot directly control the materials you may use or your final assembly process. Therefore, Maxford USA cannot in any way guarantee the performance of your finished model airplane. Furthermore, in purchasing, assembling and/or using this product, you (the buyer or user of this product) exempt, waive, and relieve Maxford USA from all current or future liability for any personal injury, property damage, or wrongful death, and if you (the buyer or user of this product) are involved in any claim or suit, you agree that you will not sue Maxford USA or any of its representatives.

If you do not fully accept the above liability and waiver, you may request a return-merchandise authorization number (RMA#) as explained below in item 2. If you think there is a missing, damaged or unsatisfactory part, please read our after-sales service and return policy:

1. Inspect your order upon delivery for any missing, damaged or unsatisfactory part(s). If you believe there is a problem, you must call us at 562-529-3988 (Monday through Friday except holidays, between the hours of 9 AM and 5 PM Pacific time) before you begin assembly and within 10 days from receipt of your purchase. During this telephone conversation, and with your support, we will determine how to resolve your concern.
2. To request a return-merchandise authorization number (RMA#), call 562-529-3988 (Monday through Friday except holidays, between the hours of 9 AM to 5 PM Pacific Time). If we elect to issue you an RMA#, you must clearly mark this RMA# on the outside of the package. (No return or exchange will be authorized after 10 days from the date of your receipt of the product; any package delivered to us without a Maxford USA RMA# is subject to being returned to the sender, as received, with return postage payable upon delivery.) Returned merchandise must be in its original condition as received from Maxford USA, with no assembly or modification, in the product's original packing materials, complete with all manuals and accessories. Return shipping and insurance charges must be prepaid by you, the buyer.
3. Returned merchandise that is accepted by Maxford USA for credit is subject to a 10% to 20% restocking fee (the final amount will be determined by Maxford USA upon receipt and examination of the returned merchandise).

Return address:

Maxford USA
15939 Illinois Avenue, #B-C
Paramount, CA 90723

IMPORTANT: Print the RMA# issued by Maxford USA on your package near our address.

III. SPECIFICATIONS*

Wingspan	62 1/2-inches
Wing Area	609 sq in
Length	33 inches
ARF weight	2 pounds 7 ounces
Flying weight	4 pounds 6 ounces (depending on your radio and power system)
Wing loading	16.5 oz/sq ft
Recommended power system (not included)	Two(2) Maxford USA U28309 motors, two(2) 25A ESCs and two(2) 3S/2,200 mAh LiPo batteries in parallel, or equivalent electric power system
Propellers (not included)	Two(2) slow fly 8x6, or as recommended by the power system's maker (NOTE: See page 5 for the option to use counter-rotating propellers)
Radio (not included)	Minimum of 4 channels (NOTE: At least 5 channels are needed if you setup differential ailerons)
Servos (not included)	Two(2) analog micro-servos for rudder & elevator plus two(2) analog micro-servos for the ailerons
Center of gravity (CG)	2-inches to 2 1/8-inches behind the leading edge of the top wing measured where the top wing's outer wing panels meet the top wing's center section.

*(All dimensions and weights are approximate.)

IV. PARTS LIST

A. SUPPLIED ITEMS:

- Prebuilt Mylar-covered fuselage, wings, ailerons, horizontal stabilizer, elevator, vertical stabilizer and rudder.
- Wheels and composite landing gear struts.
- Simulated propeller guards and pilot's control cable controls at each side of the fuselage.
- All necessary hardware items, including a custom-built, preinstalled harness to connect your LiPo flight batteries and servos to your electronic speed controls and receiver.
- Preinstalled connectors for electronic speed controls and two Lipo flight batteries in parallel.
- Prepainted twin engine nacelles.



B. ITEMS YOU NEED TO SUPPLY TO COMPLETE THIS MODEL:

- Epoxy and cyanoacrylate (CA) adhesives and threadlock compound.
- Low-tack masking tape and common hand tools (screwdriver, pliers, etc.).
- Your 4- (or more) channel radio system; two 10- to 15-inch servo extensions, 2 micro servos and a 6-inch Y-harness (not necessary with differential ailerons) for the ailerons; and 2 micro servos for the rudder and elevator.
- Two(2) Maxford USA U28309 motors, two(2) 25A ESCs and two(2) 3S minimum 2,200 mAh LiPo batteries, or an equivalent power system.
- Two(2) slow-fly 8-inch diameter x 6-inch pitch propellers, or as specified for your motors.

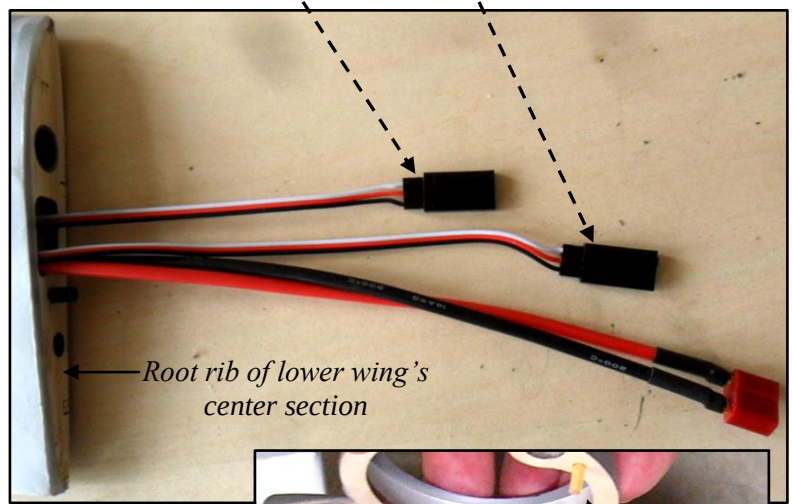
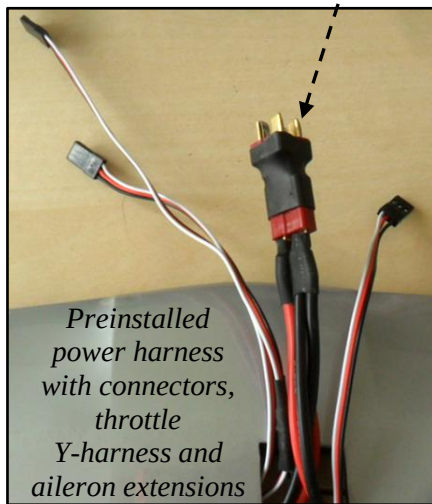
C. OPTIONAL DETAIL-UPGRADE ITEMS:

- Simulated front- and rear-facing machine guns and gun mounting hardware as shown at the right.

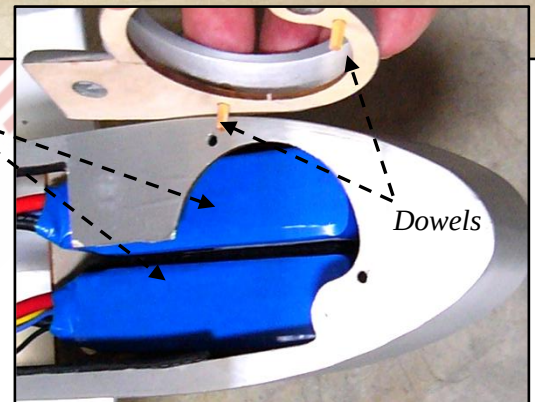


V. SPECIAL FEATURES:

- Adjustable motor box in each nacelle, able to accommodate a large range of motor sizes.
- Easy-to-remove nacelle fronts, secured with powerful permanent magnets.
 - Preinstalled power harness with included parallel connector for flight batteries.
 - Preinstalled throttle Y-harness and aileron extensions.



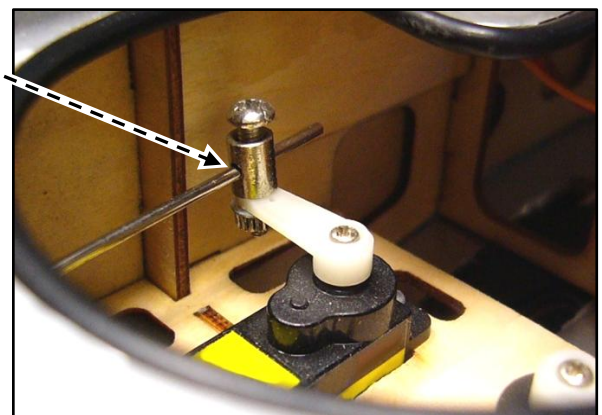
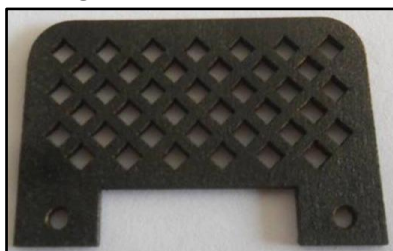
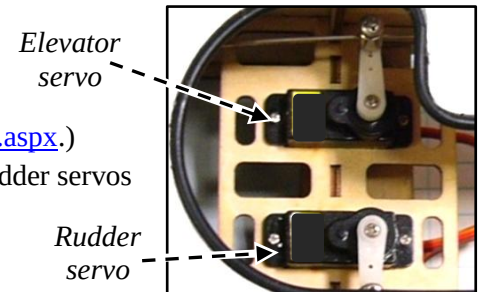
- The battery compartment easily accommodates two(2) 2,200 mAh LiPo batteries in parallel.
- Battery hatch is aligned with wooden dowels and secured in position with two sets of strong magnets.
- Included scale-looking stick-on markings.
- Replacement parts are available.



VI. ASSEMBLY INSTRUCTIONS

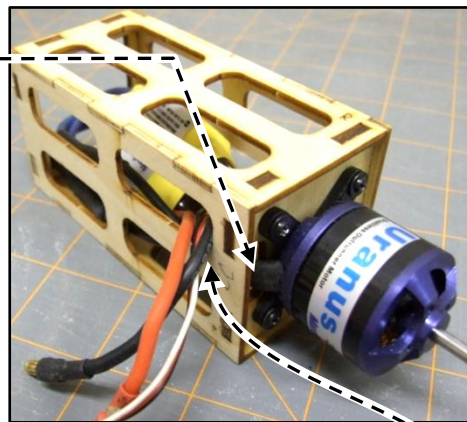
A. FUSELAGE:

1. Attach EZ-Link connectors to the outer ends of the output arms of your rudder and elevator servos.
2. Use your radio or a servo tester to center the elevator and rudder servos. (You may learn about servo testers at <http://www.maxfordusa.com/servo.aspx>.)
3. Use the hardware provided with your servos to install the elevator and rudder servos in the fuselage as shown at the right.
4. Guide the elevator's and rudder's pushrods into their EZ-Link connectors and attach the servo output arms to the rudder and elevator servos.
5. Temporarily tighten the EZ-Link connectors onto the elevator and rudder pushrods.
6. Attach a simulated propeller guard to each side of the fuselage by driving wood screws through the openings in the propeller guards and into the sides of the fuselage.



B. MOTORS & ELECTRONIC SPEED CONTROLS:

1. Guide each motor's 3 wires through the slotted opening in the firewall and into the motor mounting box. -----
2. Connect the 3 wires from the electronic speed control to the 3 wires on the motor inside each motor-mounting box.
3. Using the hardware provided with your motors, center and mount the motors onto the rear-facing 'firewall' surface of each motor-mounting box. (NOTE: Position the slotted opening at the rear of each motor box BELOW each motor. If you use machine screws to mount the motors, be sure to use threadlock compound.)
4. Connect and test-run each motor to observe its direction of rotation. Setup both motors to rotate in the clockwise direction as viewed from the rear of the airplane. (NOTE: This model was test-flown with two identical propellers rotating in the same direction; it was also test-flown with counter-rotating propellers – which 'look cool.' If you will use counter-rotating propellers, be careful to mark the "L" and "R" motor boxes. Whichever option you choose, both propellers must be mounted with their front/curved surfaces facing toward the motor in the direction of flight.)
5. Guide the ESC-to-battery wires and the ESC-to-receiver wire out through one of the holes closest to the firewall in the bottom of the motor box as shown above. -----



C. LANDING GEAR:

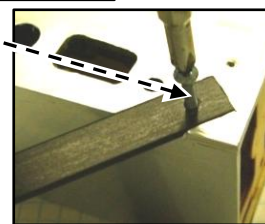
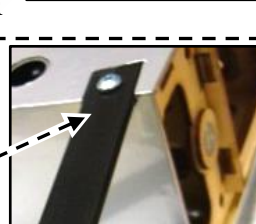
1. Identify and remove the 4 REAR landing gear struts from the parts package. (Each is approx. 5 1/4 inches long.) -----
2. Identify and remove the 4 FRONT landing gear struts from the parts package. (Each FRONT strut is approx. 3 3/4 inches long.)-----
3. As shown at the right, test-fit the ends of the REAR struts into the recesses near the rear on each side of the nacelles. Secure the REAR struts to the nacelles with 5/8 inch (15 mm) wood screws.
4. Position the FRONT struts in the recesses near the front on each side of the nacelles. Secure all 4 FRONT struts to the nacelles with 5/8 inch (15 mm) wood screws as pictured at the right. -----



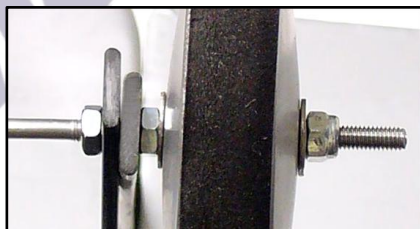
Shown on 1/4-inch squares



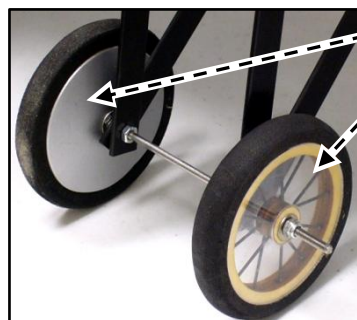
5. As shown at the right, test-fit an axle and 4 nuts through the openings in the lower ends of each set of struts. Adjust the nuts to center the axles and to firmly press against the struts. Use CA adhesive to secure the ends of each pair of front and rear struts together and to firmly anchor the nuts against the struts and to the axles.



6. When the CA adhesive is cured, position a washer and a wheel on the ends of the axles and place a washer and a self-locking nut on the end of each axle.



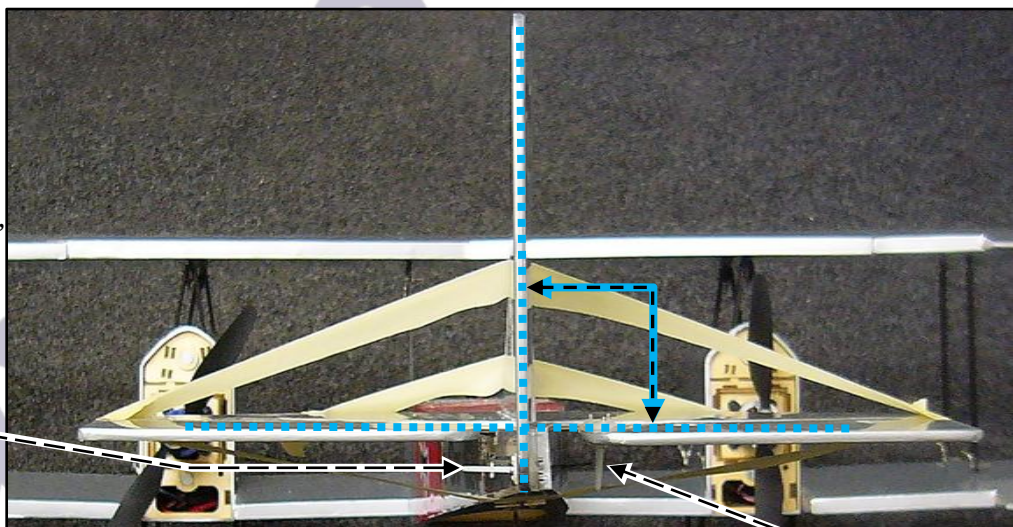
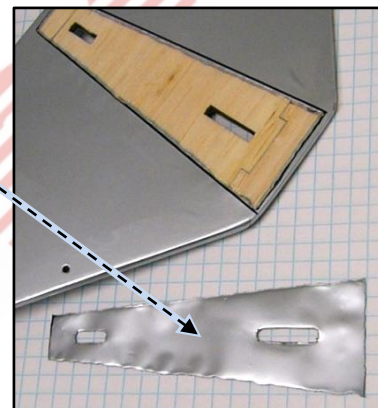
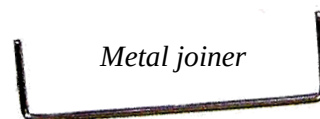
7. Adjust the self-locking nuts to allow the wheels to turn freely.
8. If desired, cut off any excess axle outside each self-locking nut. (NOTE: As supplied, the axles allow a variety of sizes and types of wheels to be used.)
9. Apply a small amount of CA adhesive to secure the self-locking nuts onto their axles for added security.



Stock and optional 2½-inch spoked wheels are pictured at the left. (Please see <http://www.maxfordusa.com/vintagestyle3spokedwheels-2.aspx> for more information about spoked wheels.)

D. TAIL SECTION:

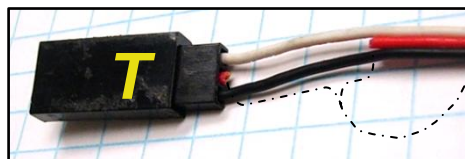
1. If necessary, cut through any Mylar covering the openings in each half of the elevator for the metal joiner.
2. Test-fit the metal joiner into its openings in both halves of the elevator.
3. Use epoxy to secure the elevator's metal joiner into each half of the elevator.
4. Place the elevator on a flat surface until the epoxy cures fully to ensure both halves of the elevator will be securely glued together and at the same angle.
5. If necessary, cut through any Mylar covering the precut CA-hinge slots for the rudder and elevator.
6. Test-fit the elevator and its CA hinges to the horizontal stabilizer and the rudder and its CA hinges to the vertical stabilizer. Stick a pin through the center of each hinge to keep them centered as you push the control surfaces together. Be careful to leave enough space between each control surface and its adjoining panel so the control surfaces can move freely up and down or left and right approx. 1-inch (25 mm).
7. Apply CA adhesive to permanently attach the elevator to the horizontal stabilizer and the rudder to the vertical stabilizer.
8. Test-fit the horizontal stabilizer by aligning the slots at the center of the horizontal stabilizer with the slots in the platform at the top rear of the fuselage.
9. As shown at the right, ensure a good wood-to-wood glue joint by using a soldering iron to burn through carefully and remove the excess Mylar covering material from the bottom of the horizontal stabilizer.
10. Test-fit the vertical stabilizer to ensure its mounting tabs fit fully through the openings in the horizontal stabilizer and down into the platform.
11. Use epoxy to permanently secure the horizontal and vertical stabilizers in their positions. Before the epoxy cures fully, 'fine-tune' as necessary to ensure the vertical stabilizer is at 90 degrees to the horizontal stabilizer.
12. Use masking tape to hold the stabilizers in position until the epoxy cures fully.
13. Twist a control horn onto the Z-bend in the end of the rudder's pushrod. The rudder pushrod should be in the outer hole of the horn. With the pushrod attached to the control horn, attach the rudder's control horn to the left side of the rudder (viewed as though you were sitting in the cockpit) as shown at the right.
14. Twist a control horn onto the Z-bend in the end of the elevator's pushrod. The elevator's pushrod should be in the next-to-outer hole. With the control horn attached to the pushrod, attach the elevator's control horn to the bottom-right side of the elevator.
15. Remove all masking tape from the wing panels and tail section when the epoxy has cured fully.



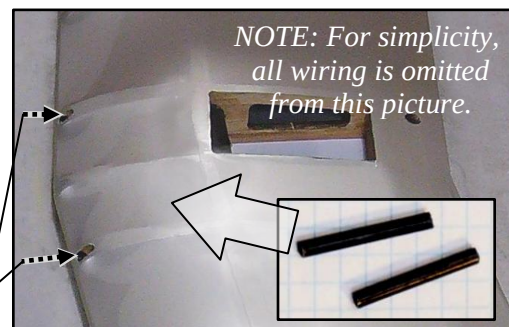
E. LOWER WING'S CENTER SECTION & ENGINE NACELLES:

1. Using a meter or a servo tester, identify and write "A" on both ends of the two preinstalled extensions for the ailerons. (NOTE: A gold or silver Sharpie pen works great for this purpose.)
2. Write a "T" (for 'Throttle') on all three of the connectors on the preinstalled Y-harness.
(NOTE: Decide now if you will power your receiver and servos – as we did in all test-flying – with one of the battery eliminator circuits in your electronic speed controls; or, you may elect to setup your Gotha G.IV heavy bomber to carry the extra weight of a separate UBEC/SBEC or a receiver battery and power switch.)

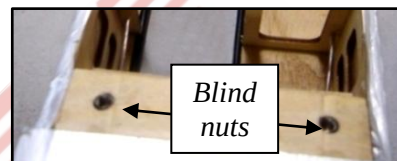
3. If you will power your receiver and servos with the battery eliminator circuit in one of your ESCs, cut the red wire in one the supplied throttle leads as pictured below. If you will use a separate UBEC/SBEC or receiver battery and switch: Cut the red wires in BOTH throttle leads. In either case, tape the loose ends of any cut wires to prevent short circuits.



- Cut middle (usually red) wire. Shown before covering with electrical tape.



4. Use epoxy to permanently secure 2 composite rods (each approx. 1 1/4-inch / 33 mm long) into the openings in the leading edge of the lower wing's center section as shown at the right.
5. Attach the lower wing's center section to the fuselage using the two 1-inch long bolts and washers provided and the blind nuts preinstalled in the fuselage.

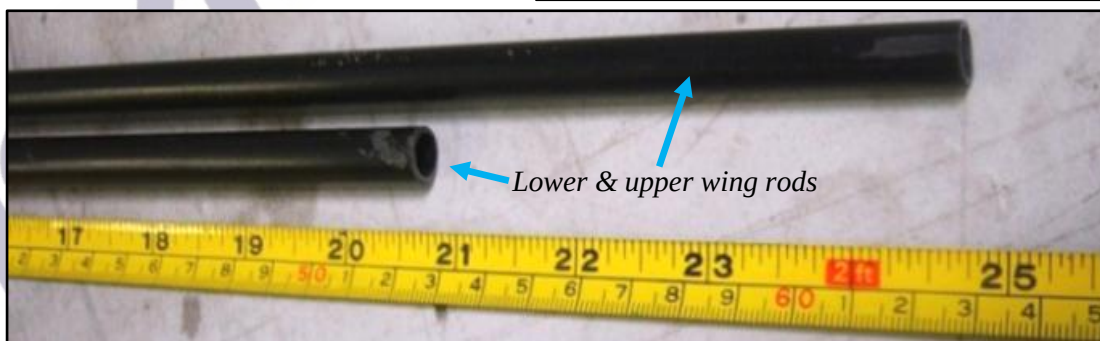
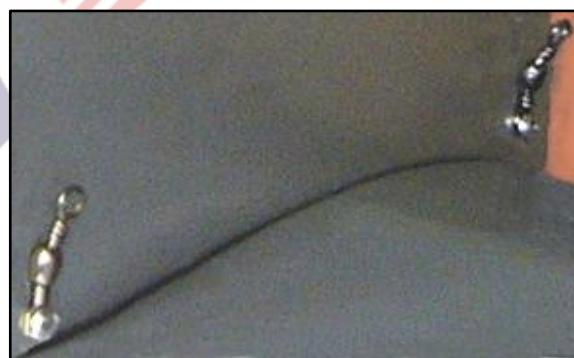


(NOTE: Connectors are preinstalled at each end of the power harness to connect your flight battery to your ESCs. If you prefer to use another type of connector, you may remove the preinstalled connectors and install your preferred type of connector.)

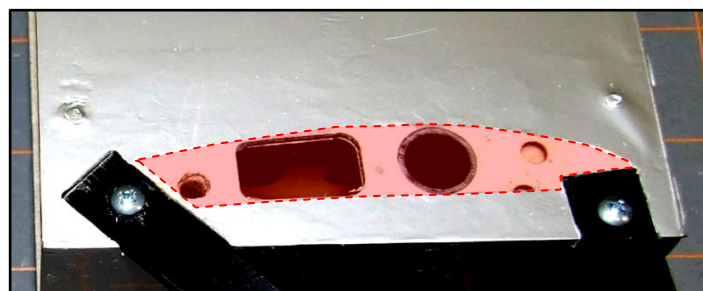
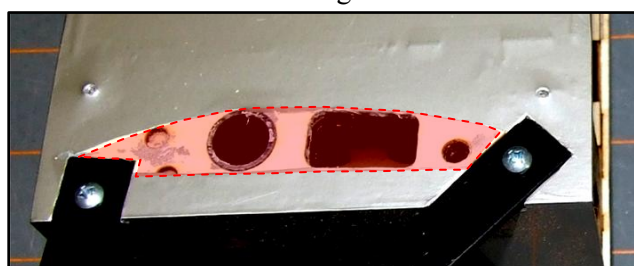
6. To connect your ESCs to the power harness: As shown at the right, solder the supplied male connectors (or whatever connectors you prefer) to each of your ESC's black and red power wires. Use heat-shrink tubing to safely insulate the bare metal at each solder joint as shown.



7. Attach two swivels to each side of the nacelles using the provided 3/8-inch / 10mm screws. (Four swivels per nacelle.)
8. Attach one swivel to each side of the fuselage just above the leading edge of the wing saddle.
9. Insert the approx. 20 3/4-inch (525 mm) long lower wing rod midway through the lower wing's center section.



10. Carefully center and tack-glue the lower wing rod in place.
11. As outlined below, trim away the Mylar covering on the sides of the nacelles where each nacelle will be glued to the root rib of the lower wing's center section.

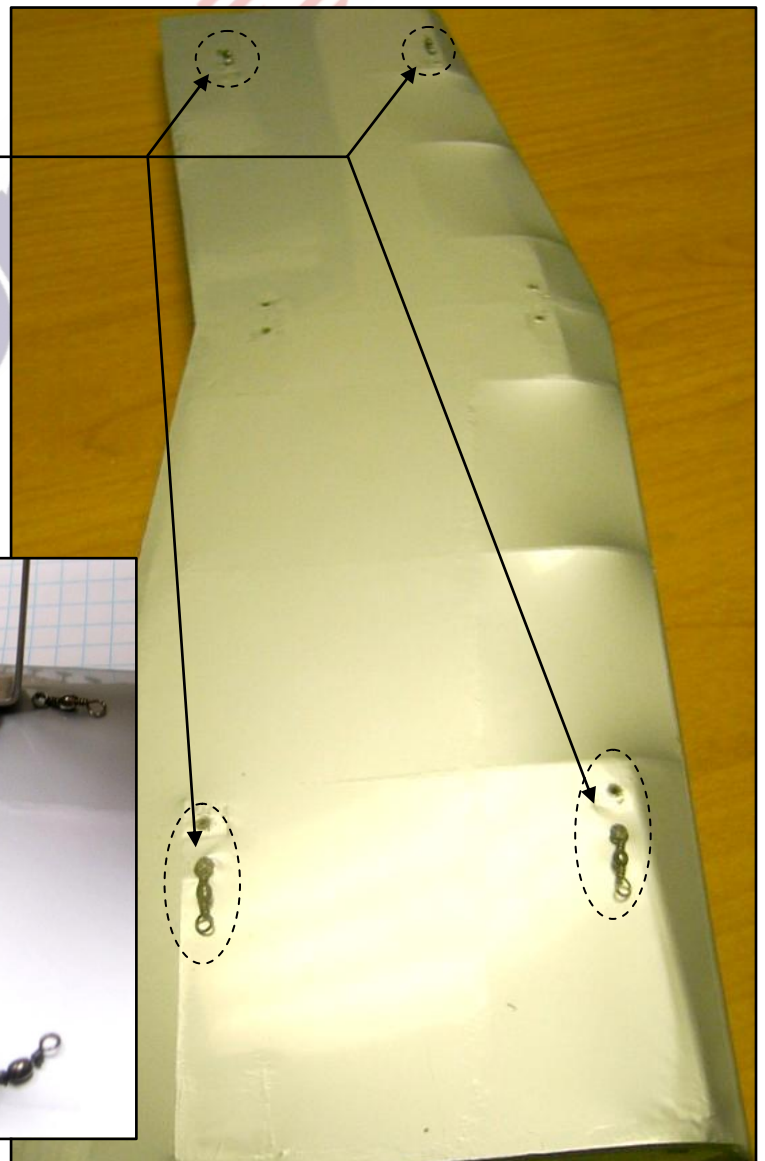
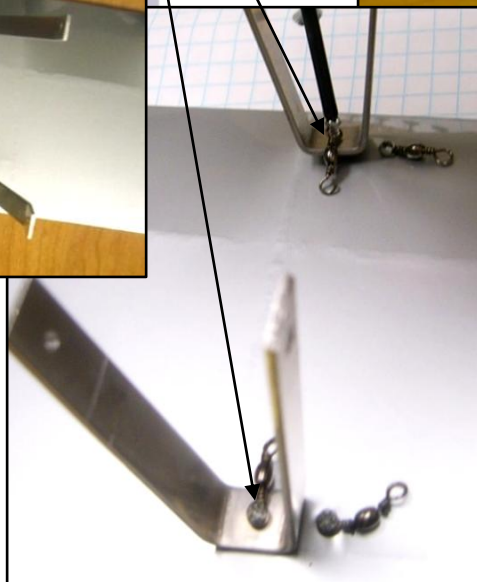


12. Position the nacelles onto the free ends of the lower wing rod and slide the nacelles toward the root ribs of the lower wing's center section. (NOTE: If you will use counter-rotating propellers, be sure to observe your "L" and "R" markings.)
13. As each nacelle nears the root rib of the lower wing's center section:
 - a) Guide the connectors labeled 'T' (for throttle) into the nacelles.
 - b) Guide the ends of the harness with the flight-battery-to-ESC connectors into the nacelles.
 - c) Guide the connectors labeled 'A' (for aileron) into the nacelles, then pull the aileron connectors fully through and out the other side of each nacelle.
 - d) Use CA or epoxy to glue the nacelles to the outer ribs of the lower wing's center section.
14. As you slide the motor-mounting boxes into their openings in the nacelles, connect each ESC's power leads to the harness's flight-battery-to-ESC connectors and each ESC's throttle lead to the connector labeled 'T.'
15. Position the 'excess' length of the power and throttle wires inside the lower compartment of each nacelle.
16. Connect the rudder and elevator servos and throttle lead to your receiver. Connect the aileron extensions to a 6-inch Y harness and to your receiver – or connect the aileron extensions directly to your receiver if you use aileron differential. Position your receiver behind the space for the batteries.

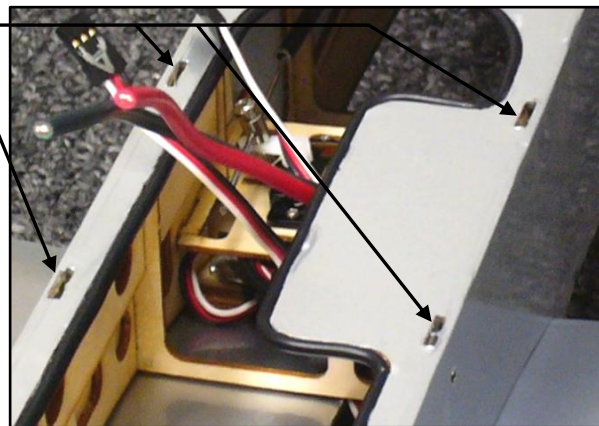
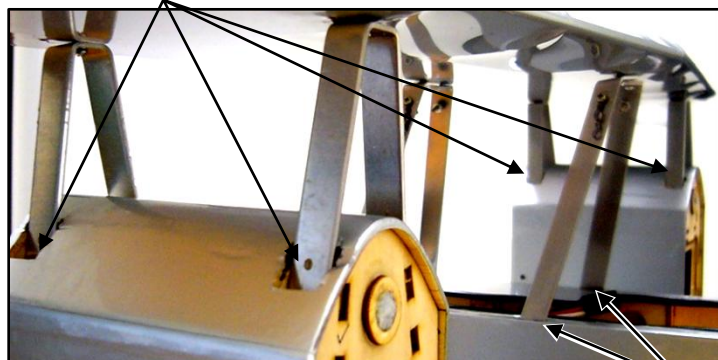


F. UPPER WING'S CENTER SECTION:

1. Use four 3/8-inch / 1 cm long screws to attach four swivels at the outer guide-holes in the bottom of the upper wing's center section (pictured at the right.)
2. Use four 3/8-inch / 1 cm long wood screws to loosely attach the engine nacelle's upper struts and swivels into their guide-holes as shown.
3. Use four 3/8-inch / 1 cm long wood screws to loosely attach the four cabane struts near the center of the bottom of the upper wing's center section as shown below.



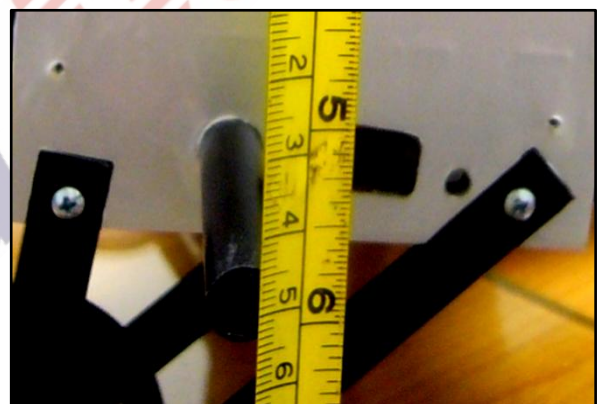
4. Align and test-fit the cabane struts into the slots on each side of the cockpit as shown at the right.
5. Align and test-fit the nacelle struts into their openings at the tops of the nacelles as shown below.



(NOTE: Re-form the bends in these struts to fit their openings if necessary. With the upper wing's center section properly positioned, the upper and lower wing's center sections have the same angle of attack and there is approx. 6 inches (or 52 mm) between the centers of the upper and lower wing's wing rods as shown at the right.)

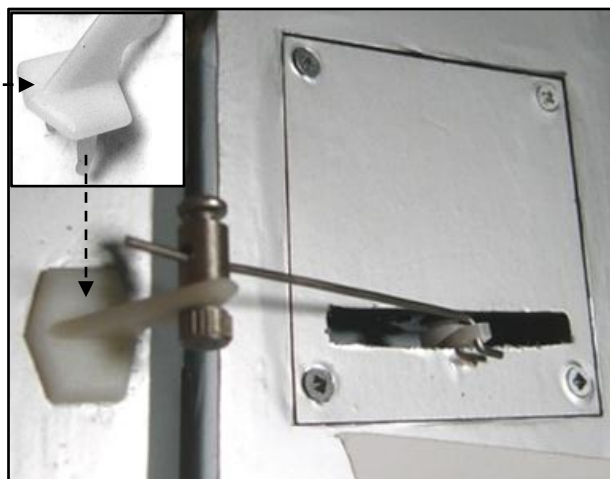
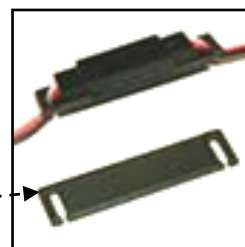


6. When you are content with the fit of the upper wing's center section to the fuselage and nacelles, secure the nacelle's struts to the nacelles with 3/8-inch / 1 cm long screws and securely tighten all of the screws that attach the struts to the top wing's center section. (NOTE: A conservative modeler may also secure the cabane struts to the fuselage with screws or glue.)
7. Insert and center the upper wing rod through the upper wing's center section, tack-glue it in position.



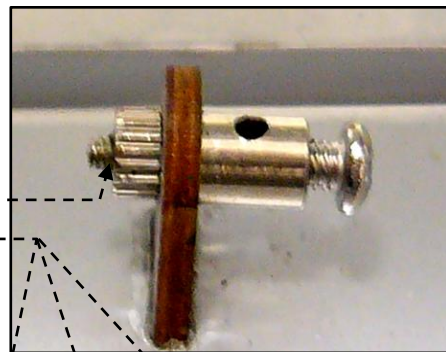
G. OUTER WING PANELS & AILERONS:

1. Test-fit the ailerons and CA hinges to their wing panels. (NOTE: Cut any excess Mylar covering the CA hinge slots as necessary.)
2. Center the CA hinges in their slots, stick a pin through each hinge to keep it centered.
3. Use CA adhesive to attach the ailerons to their wing panels.
4. Depending on the length of the wires preinstalled on your aileron servos, attach a 10- to 15-inch servo extension to each of the 2 aileron servos. (REMINDER: We recommend you use safety clips to secure all such connections - as shown at the right. See <http://www.maxfordusa.com/servoextensionsafetyclip.aspx> for more information.)
5. As shown at the right, test-fit the supplied aileron horns into the predrilled holes in the ailerons and glue. -----
6. Center and attach your aileron servos to their hatch covers. (NOTE: See pages 2 and 3 for details.)
7. Use 3/8-inch / 1 cm long screws to attach the hatch covers and aileron servos into their wing panels.
8. Attach the EZ-Link connectors and pushrods to the control horns and servo output arms as shown at the right. (The pushrods should be in the outer hole of their servo arms and the EZ-link connectors should be in the center hole of the horns.)



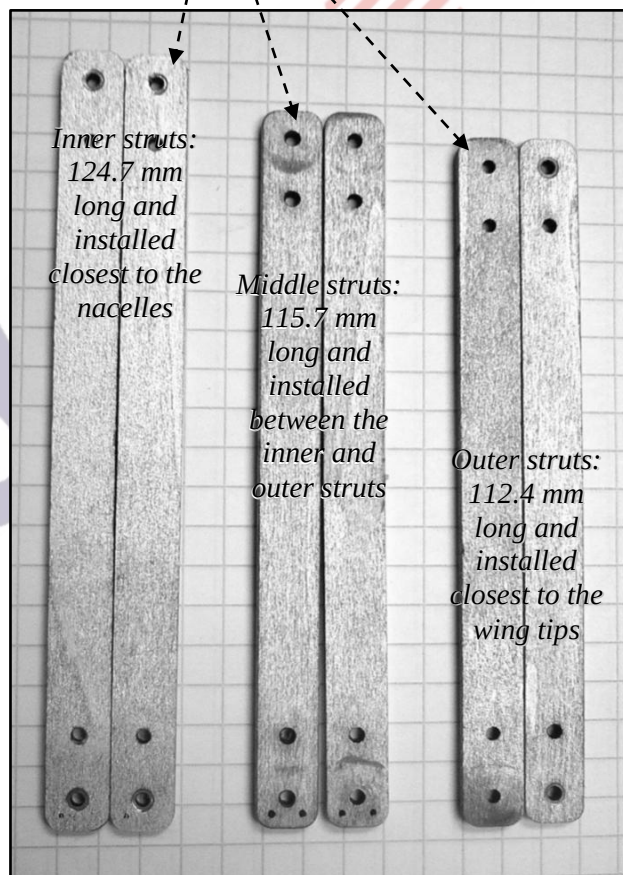
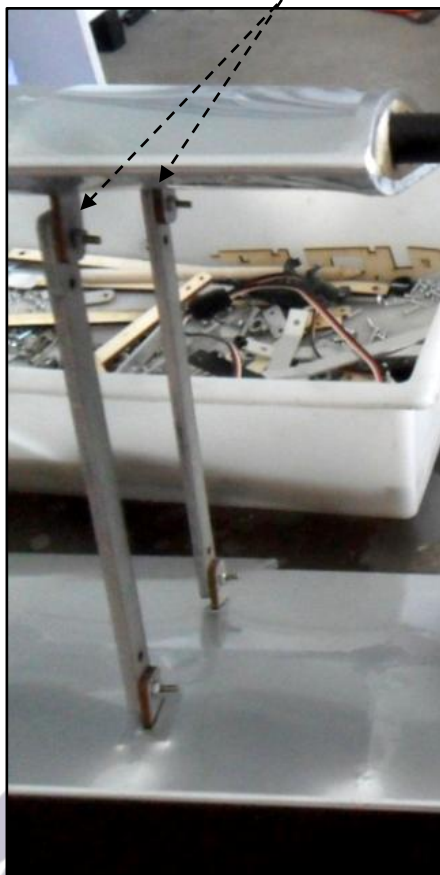
9. While holding the lower ailerons 'level' (even with their adjacent wing panels), firmly snug (but do not overly tighten) each EZ-Link connector onto its aileron pushrod.
10. Leaving approx. 1/2-inch / 13 mm of aileron pushrod length behind each EZ Link connector to allow for 'fine-tuning' of the lower ailerons, cut off and discard the ends of the aileron pushrods that extend excessively behind their EZ-Link connectors.

11. Attach EZ-Link connectors to the preinstalled wooden control horns on the upper and lower wing's ailerons as shown at the right.
(NOTE: While applying threadlock compound or CA adhesive, be careful to **NOT** glue the EZ-Link connectors to their mounting tabs.)



12. Identify the wing struts (pictured below on 1/4-inch graph paper).-----
(NOTE: Front and back struts are the same length.)
13. As shown below, test-fit all the struts toward the outside of each of the wing panels' preinstalled wooden mounting tabs.

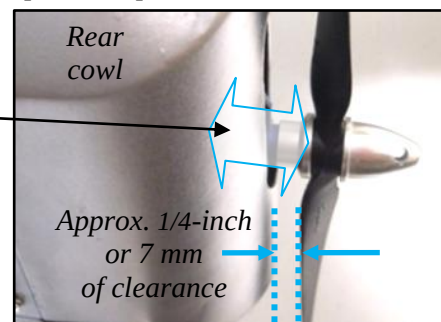
14. Using 1/8-inch (2 mm) diameter bolts and matching nuts, loosely attach the wing struts to the preinstalled wooden tabs in the bottoms of the upper wing panels and the tops of the lower wing panels.
15. Slide each set of top and bottom wing panels onto their wing rods. Double-check that the upper and lower wings have the same angle of attack. Use the 'wiggle room' where each strut connects to its tab to fine-tune the fit of the wing panels to their center sections as required.



16. Since the Gotha G.IV will fit in a compact car's rear seat, it is not necessary to remove the outer wing panels; therefore, we recommend gluing the lower wing panels to their nacelles and the upper wing panels to the upper wing's center section. However, if you must be able to remove the outer wing panels: Secure the lower wing panels to their nacelles with transparent tape and apply transparent tape across the joint formed where the top wing's outer panels meet the upper wing's center section – and it will be necessary to install the wing wires.
17. When you are content with the alignment of the wing panels, struts and center sections, securely tighten each nut onto its 2 mm (1/8-inch) diameter bolt on all the struts. Apply threadlock compound to protect from vibration.

H. FINISHING TOUCHES:

1. Slide each motor box forward or back as necessary to position each nacelle's rear cowl over its motor as shown at the right.
2. Test-fit the propellers and adjust the motor-mounting boxes to provide approx. 1/4-inch / 7 mm of clearance between the fronts of the propeller blades and the rear of the cowls.



3. Secure the mounting boxes within their nacelles using glue or by driving 5/16-inch screws through the guide holes on each side of each nacelle as shown at the right. -----

4. Being careful to maintain approx. 1/4-inch / 7 mm of propeller clearance, use transparent tape or 3/8-inch / 1 cm long screws to attach the rear cowls to their nacelles. (NOTE: You may use the small gaps between the nacelle and wing panel to help fit the rear cowl to the nacelles.) -----

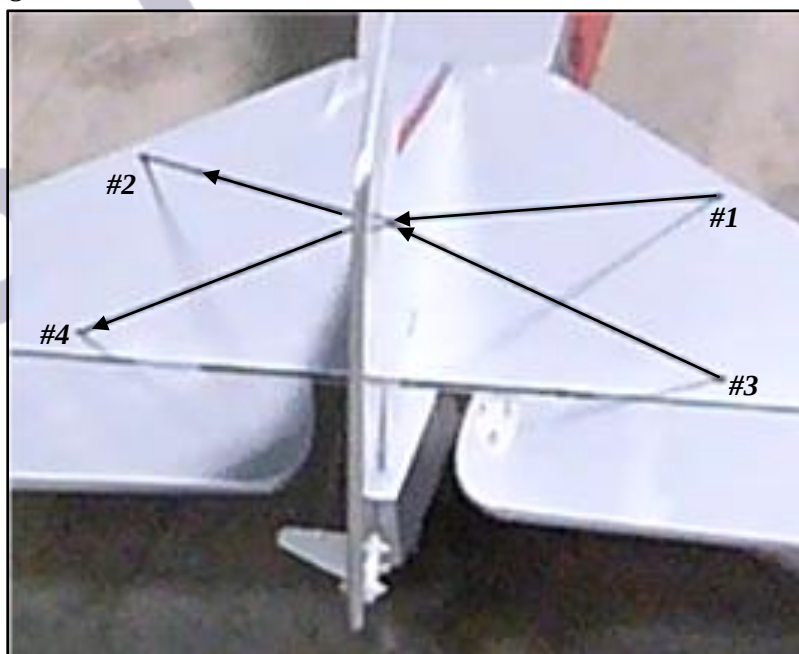
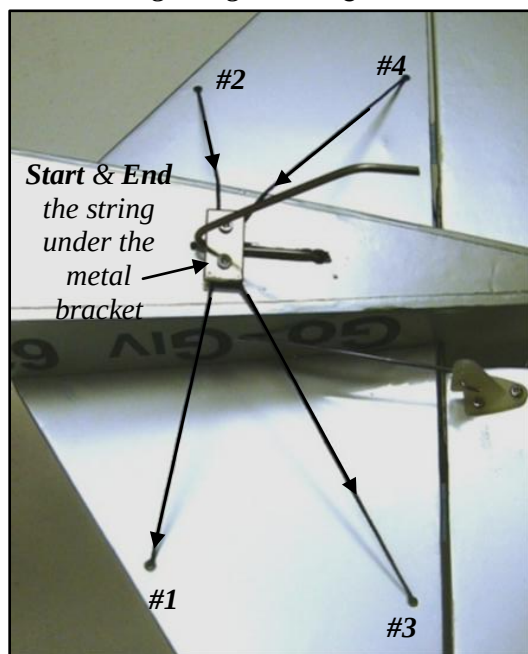
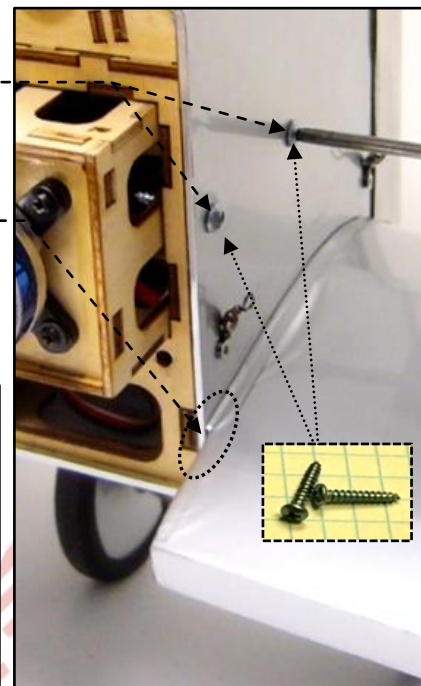
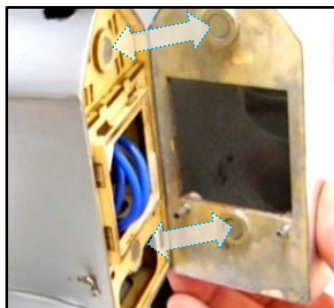
5. If both propellers rotate in the same direction, install identical propellers using the hardware supplied with your motors. If you use counter-rotating propellers, install a tractor propeller on your left motor (as viewed from the cockpit) and a pusher propeller on your right motor. Mount both propellers with their front/curved surfaces toward each of the motors.

6. As shown at the right, position the front cowls on the nacelles and allow their magnets to hold them in position.

7. Guide the straight portion of the tail skid down into its opening in the bottom of the tail.

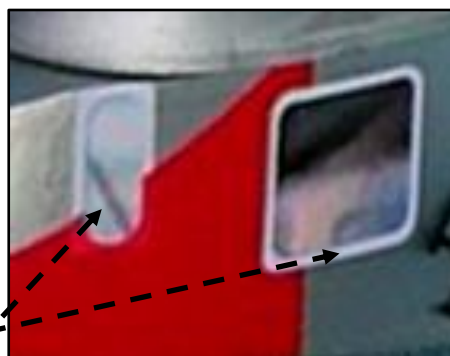
8. As shown below, attach the tail skid loosely to the bottom of the fuselage using two(2) 3/8-inch / 1 cm long wood screws and a metal bracket. (NOTE: Installation of the supplied black string to simulate the empennage braces is optional, but will certainly enhance the appearance of your Gotha G.IV.)

9. Simulate the empennage braces by wrapping one end of the supplied black string under the tail skid's metal bracket and guiding the string's free end through and around the tail section as shown below:

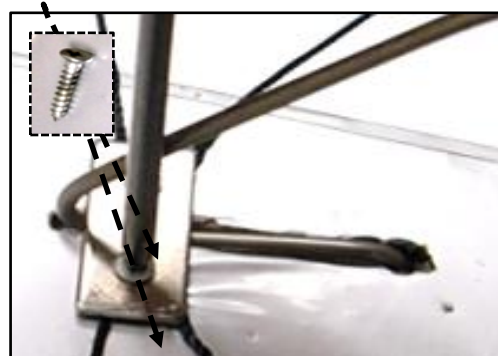


10. Securely anchor the string under the tail skid's metal mounting bracket by tightening the two(2) 3/8-inch (1 cm) long wood screws.

11. Trim the stick-on markings, then peel and apply as shown on the following page and throughout this manual.



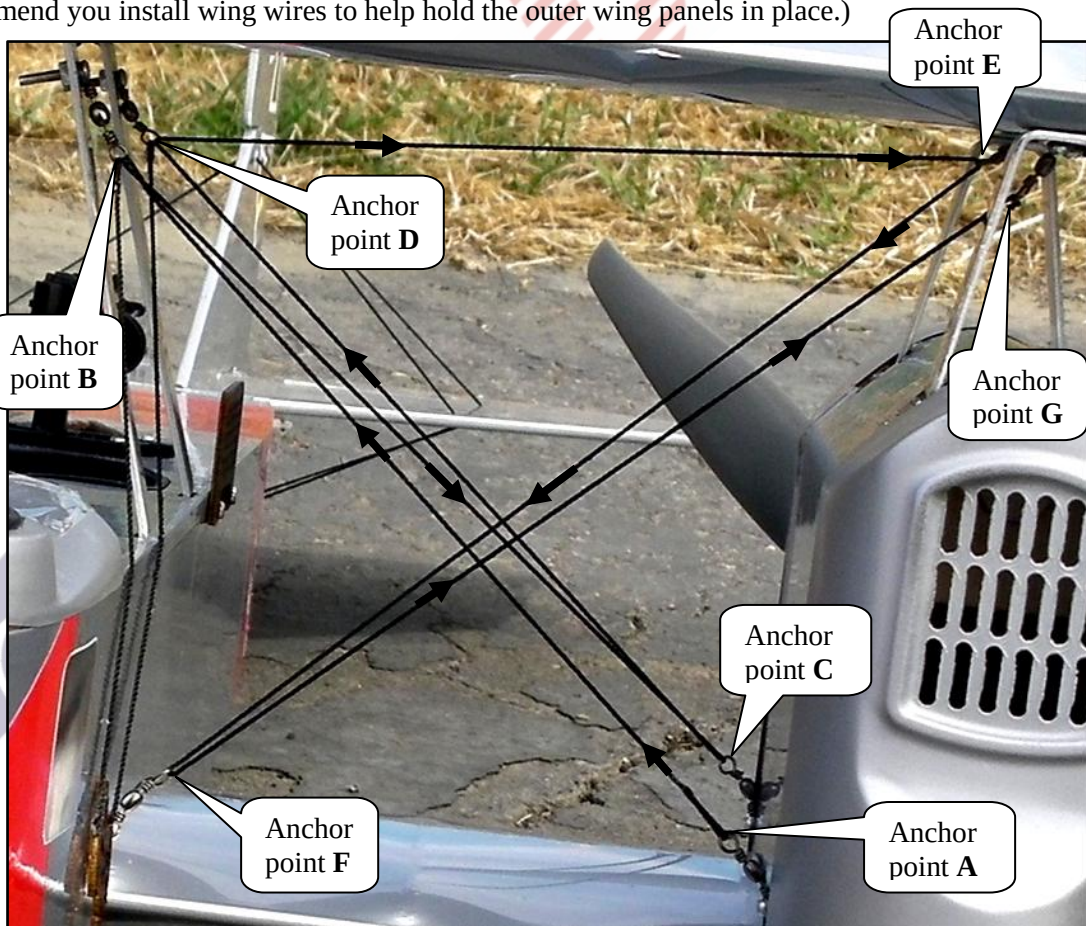
Nose windows





(WING-WIRE NOTE: If the outer wing panels are glued, the wing wires are optional. If the outer wing panels are not glued, we recommend you install wing wires to help hold the outer wing panels in place.)

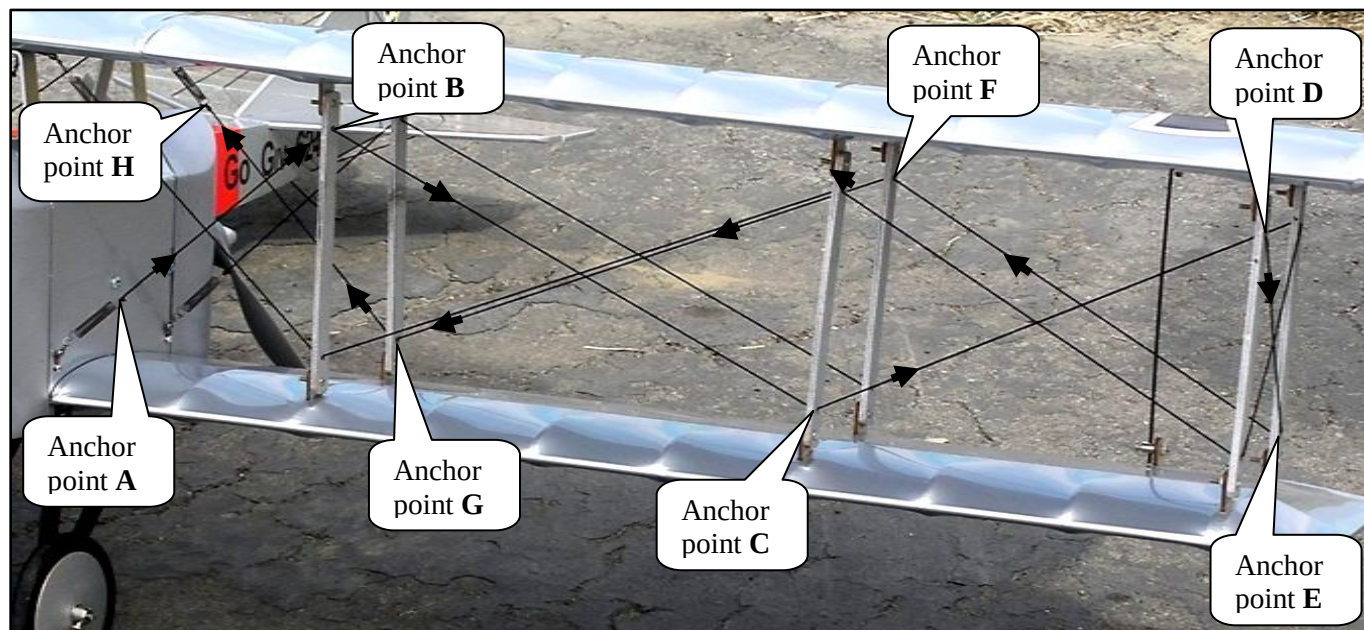
12. To simulate the wing wires between the fuselage and the left nacelle, tie one end of the supplied black string to the swivel at anchor point **A** as shown at the right. (NOTE: If wing wires will NOT be installed, proceed to step 27 on page 14.)



13. Guide the string along the path from anchor point **A** through anchor point **G**.
14. When the string reaches the swivel at anchor point **G**, pull the string 'snug' and tie it to the swivel at anchor point **G**.
15. Secure the knots at **A** and **G** with CA adhesive and trim off the loose ends.
16. Simulate the wing wires between the fuselage and the right nacelle by repeating the above steps 12 through 15 in the same (but mirrored) manner.
17. As shown on the following page, to simulate the wing wires between the left nacelle and the left-side wing struts, attach a spring to the free end of the swivels at the outside front and outside rear of both the left- and right-side nacelles. (NOTE: As an option, the springs may be replaced with fishing-tackle clips, not supplied.)

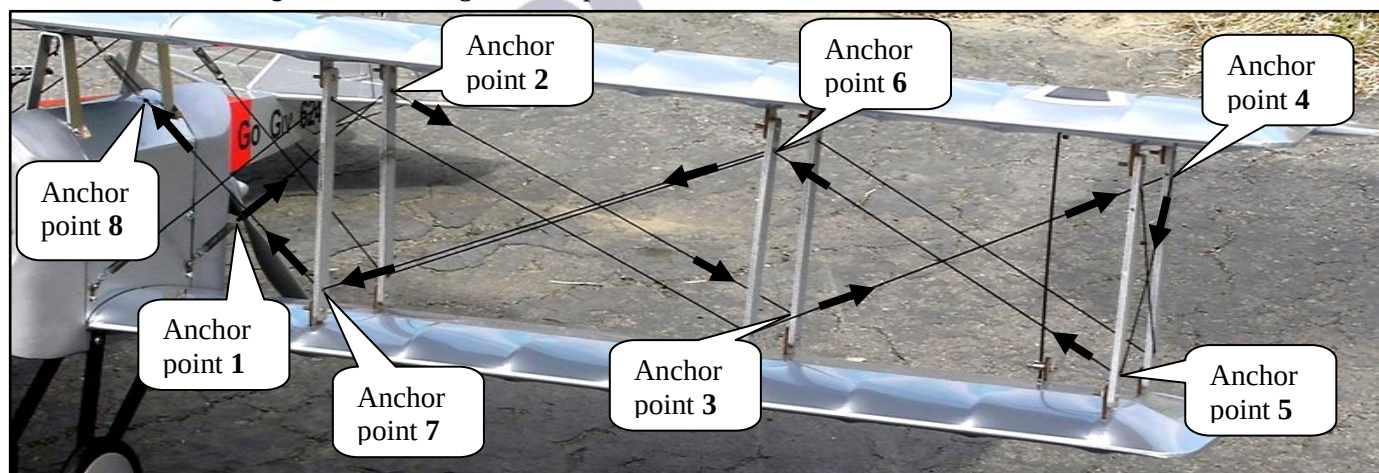


18. Tie the end of the supplied black string to the free end of this spring (shown as anchor point **A** in the diagram below).
19. Guide the string along the path from anchor point **A** through anchor point **H** as shown below.



(NOTE: Anchor points **B**, **C**, **D**, **E**, **F** and **G** are simply the holes in the ends of the struts; there are no swivels.)

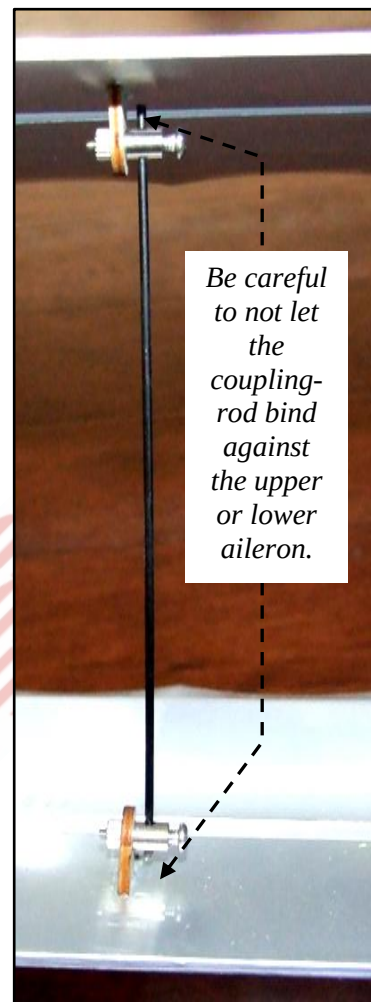
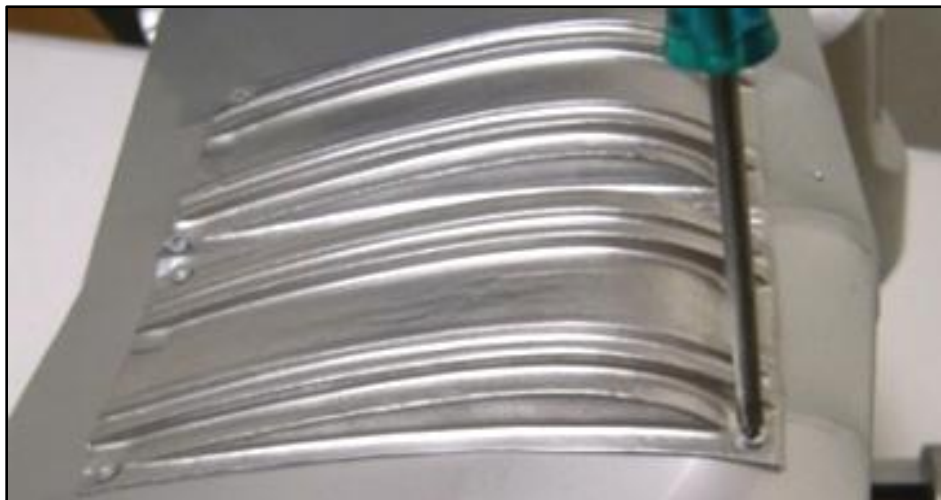
20. When the string reaches the end of the spring at anchor point **H**, pull the string 'snug' enough to expand the springs at anchor points **A** and **H** to twice their relaxed lengths and tie the string to anchor point **H**.
21. Secure the knots at **A** and **H** with CA adhesive and trim off the loose ends.
22. Tie one end of the supplied black string to anchor point **1** in the diagram below (the free end of the swivel at the outside rear of the left nacelle).
23. Simulate the remaining left side's wing wires as pictured below:



(NOTE: No swivels are used on the struts; anchor points **1** and **8** are the free ends of springs; and anchor points **2**, **3**, **4**, **5**, **6** and **7** are simply the holes in the ends of the struts.)

24. When the string gets to the free end of the spring at anchor point **8**, pull the string 'snug' enough to expand the springs at anchor points **1** and **8** to twice their relaxed lengths and tie the string to the spring at anchor point **8**.
25. Secure the knots at **1** and **8** with CA adhesive and trim off the loose ends.
26. Repeat the above steps 18 through 25 in the same (but mirrored) manner to simulate the wing wires on the right side of the wing's outer panels.

27. Connect the aileron's carbon-fiber coupling-rods and EZ-Link connectors to the ailerons as pictured at the right.
28. While holding each pair of lower and upper ailerons 'level' (even with their adjacent wing panels), firmly snug (but do not overly tighten) the EZ-Link connectors onto their coupling-rods.
29. Ensure the ends of the coupling-rods do not bind against their ailerons: Cut and discard the excess from the ends of the aileron's coupling-rods that extend excessively beyond their EZ-Link connectors.
30. Use 8 small wood screws to attach the simulated auxiliary fuel tanks to the top wing as pictured below.

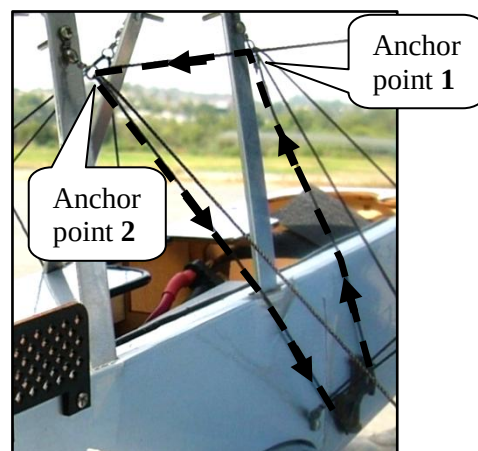


31. If you install the optional machine guns: Use wood screws to attach the front machine gun to the base of the front gunner's firing ring; attach the rear machine gun to the deck behind the rear gunner, aligned with the triangular shaped opening in the top of the fuselage.



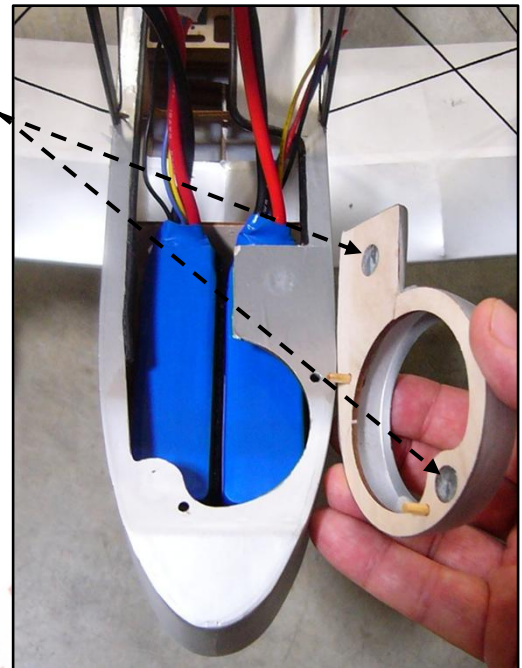
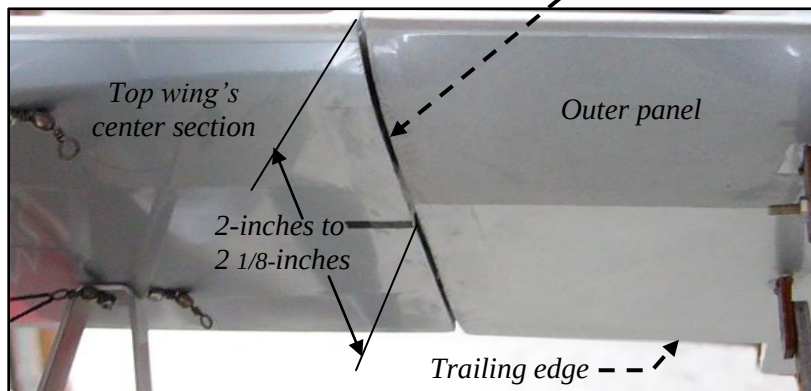
32. Use 2 mm bolts and matching nuts to attach the simulated pilot's control wheels to both sides of the fuselage as pictured below. (IMPORTANT: These bolts are located inside the battery compartment; position the heads of these bolts INSIDE the fuselage with their nuts on the outside.)
33. Install simulated control cables at both sides of the fuselage as shown at the right or all the way to the tail for simulated elevator control.

***Congratulations!
Assembly is finished!***



VII. SETUP & ADJUSTMENTS

1. Position your LiPo batteries in the fuselage's nose compartment, fit the pegs under the nose-gun mounting ring into their corresponding openings in the top of the fuselage and ensure this gun mount is well-secured to the nose by its preinstalled magnets. - - - - -
2. Center of gravity (CG): For your initial flight your Gotha G.IV bomber should be balanced when lifted at a point between 2-inches to 2 1/8-inches behind the leading edge of the top wing, measured where the top wing's center section meets the outer panels.



When correctly balanced, the airplane will hang level, neither nose up nor nose down.

3. Servo end-point adjustments: For your first flights, set your high rates at the travels listed below and add 30% expo or set your low rates at 70%.

<u>Control Surface</u>	<u>Recommended Maximum Deflection</u>
a. Elevator	1/2 inch (13mm) up and down from center measured at the elevator's outer corners.
b. Ailerons	5/8 inches (16mm) up and down from center measured next to the lower ailerons' adjoining wing panels.
c. Rudder	1 inch (25mm) left and right from center measured at the rudder's top-rear corner.

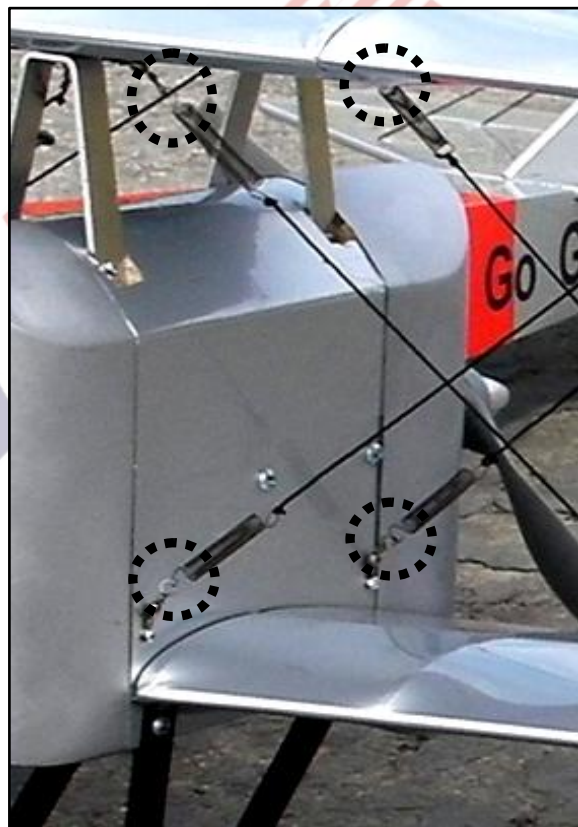
(NOTE: If you wish to set up differential ailerons, start with UP travel at 5/8 inch and DOWN travel at 50%; if you employ aileron-rudder mixing, start with a maximum of +25% in both directions – better yet, if you are flying mode 2, be prepared to make good use of your transmitter's left stick.)

4. Check the Mylar covering material's joints and surfaces. If necessary, use an iron on medium heat to secure the edges and to tighten any loosened areas. Recheck and retighten from time to time; be careful to not apply too much heat as you secure the edges or tighten the Mylar. If any trim becomes loosened, press it down and/or apply clear tape. Never apply heat to any trim, insignia, marking or plastic part.
5. Ensure the propellers are securely attached to your motors and that each propeller remains undamaged and correctly balanced.

VIII. STORAGE, FIELD SETUP & PREFLIGHT CHECKS

(NOTE: As shown at the right, the Gotha G.IV heavy bomber will fit in a compact car. Therefore, removing the wing panels should not be necessary and is not recommended.)

1. Preparation for transport and storage:
 - a. Disconnect the springs (or fishing-tackle clips) and aileron extensions as shown at the right.
 - b. Slide the outer wing panels off from their wing rods.
2. Reverse the above procedure to reinstall the outer wing panels.
3. Preflight checks:
 - a. Double-check the security of your motors and propellers.
 - b. Make sure the front and back cowl structures remain securely attached to the nacelles. (If in doubt, apply transparent tape at the sides of each assembly.)
 - c. Be sure all screws and other connections (both mechanical and electrical) throughout the air frame are secure.
 - d. Always set your transmitter's throttle to minimum before turning ON your transmitter.
 - e. Double-check control directions of the ailerons, elevator and rudder.
 - f. As with all radio-controlled model airplanes, this model must pass the radio range ground check recommended by your radio's manufacturer or you may not fly safely.
 - g. Carefully operate your radio-control and power system according to their manufacturer's instructions.
 - h. Carefully perform whatever additional preflight safety checks you or your AMA-chartered club may think are necessary.



**CONGRATULATIONS
ON YOUR NEW
GOTHA G.IV HEAVY BOMBER.**

IX. FLYING TIPS

The Gotha G.IV is a heavy bomber and is not designed for aerobatics. During your initial flights we recommend you:

1. Strive for scale-like maneuvers with slow, flat turns.
2. The Gotha G.IV heavy bomber is not intended for aerobatic flying.
3. As always, gently increase the throttle take and off directly into the wind whenever possible.
4. In the air, be careful to maintain reasonable scale-like flying-speeds for all maneuvers; it slows quickly when power is reduced.
5. When landing, 'fly' it to the ground with power on (an extended 'gliding' approach is not recommended).

**ENJOY MORE FLYING-FUN ONCE
YOU BECOME FAMILIAR WITH YOUR
GOTHA G.IV HEAVY BOMBER.**

HAPPY LANDINGS!



Reminder ...

- *This product is NOT a toy.*
- *The quality and capabilities of your finished model airplane depend on how you assemble it.*
- *Your safety depends on how you use and fly it. Any testing, flying and use of this model airplane is done entirely at your own risk.*

PLEASE ENJOY YOUR HOBBY AND FLY SAFELY!

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