Antonov An-2

SPORT-SCALE ARF RADIO-CONTROLLED MODEL AIRPLANE

INSTRUCTION MANUAL



The Antonov An-2 (nicknamed “Annushka” or “Annie,” with the NATO reporting name “Colt”) is a single-engine biplane utility and agricultural aircraft designed in the USSR in 1946. Besides being used as an agricultural and light-utility transport, it has been used as a parachute-drop aircraft and many other tasks suited to such a large, slow-flying biplane; its slow flight ability made it suited for short, unimproved fields; and some variants were built for cold weather and other extreme environments.

The Guinness Book of World Records states that the 45-year production run for the An-2 was for a time the longest ever for any aircraft – exceeded only recently by the Lockheed C-130 Hercules.

By 1960 the USSR had produced over 5,000 of this aircraft. Since 1960, most An-2s were built at the WSK aerospace factory in the city of Mielec in southeastern Poland – with over 13,000 made there before full production ended in 1991. Limited production from parts’ stock and maintenance coverage continued until 2001, when four were produced for Vietnam. China is also licensed to build a version of the An-2 known as the Shijiazhuang Y-5.

The RC version we designed is approximately 1/11 scale, with a 62” wingspan. It gives customers the choice of electric or glow-power systems, and, like the original, this ARF radio-controlled An-2 also includes fully functional flaps and is available in both land and water-based versions.

We invite you to enjoy the pride of ownership and the joy of flying this beautiful model of the Antonov An-2 Russian biplane.

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 as 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.
(Note: Temperature and/or humidity differences between the factory, our warehouse and your home or workshop may indicate the need for slight adjustments to the wing saddle, struts and/or the vertical or horizontal stabilizer's mounting surfaces to ensure proper alignment of these surfaces; however, we recommend you contact us before you attempt any such adjustments.)
8. To help ensure the security of your servo connections, we recommend use of optional Maxford USA servo-extension safety clips.
9. If you are not an experienced R/C pilot or have not flown this type of model before, we strongly urge you to get assistance from an experienced R/C pilot.



10. 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 a threadlock compound to secure all airframe components from vibration.
11. 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.
12. This model includes some plastic, fiberglass and carbon-fiber-reinforced parts. If you drill, grind or sand such a part, always wear safety goggles, a particle mask and rubber gloves to guard yourself from eye, skin and respiratory-tract irritation and never blow into the part as the dust may blow back into your face.
13. 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.
14. Read all instructions included with your battery 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 battery is damaged. Do NOT attempt to use or recharge a damaged battery.

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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 can NOT in any way guarantee the performance of your finished model airplane. Furthermore, in purchasing 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 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 near the above address.

III. PARTS LIST:

1. Included items

- Scale-looking fiberglass cowl.
- Canopy/hatch secured with magnets.
- Prebuilt and precovered horizontal stabilizer, elevator, vertical stabilizer & rudder.
- Interplane and horizontal stabilizer struts.
- Stearable tail gear.
- Realistic-looking dummy engine.
- Complete set of scale stick-on markings.
- Hardware package.
- All-wood built-up fuselage with adjustable motor box, precovered with iron-on Mylar film.
- This illustrated Instruction Manual

2. Items you must supply

- 5-minute epoxy, cyanoacrylate (CA) adhesives and threadlock compound.
- A high-speed motor tool, low-tack masking tape and common hand tools (screwdrivers, pliers, etc.).
- A five- (or more) channel radio system with 6 mini servos (7 mini servos with glow power), two 12-inch servo extensions and two 6-inch Y cables (one for the ailerons and one for the flaps).
- 400 to 600 Watt motor and compatible electronic speed control and battery or 40-class 2-cycle glow or equivalent 4-cycle engine.
- 11- or 12-inch diameter x 6- or 7-inch pitch propeller (or as specified for your motor or engine).

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IV. SPECIAL FEATURES:



- 95% preassembled ARF with a realistic-looking cockpit canopy/ hatch, steerable tail wheel and stick-on scale markings.
- Functional flaps.
- Wing wires to enhance scale appearance while remaining in place when the wings are removed.
- Includes plywood wing supports for safely removing and storing the wings as left and right pairs.



- Scale-looking landing gear.
- Fuselage, wings and empennage are jig-assembled, laser-cut balsa and light plywood.
- Preinstalled fuselage side and door windows.
- Adjustable-depth motor-mounting box is included for an electric power system; customer also has option to use a glow-engine power system.
- Float version is an option, just like the original Antonov An-2.
- Maxford USA's Maxlok system features metal pins and magnets for easy wing removal, transport and storage. As a Maxlok key is inserted into its opening in the bottom of the wing, it passes through a tab that is part of each outer wing panel to lock the wing solidly in position. Maxlok keys are held by magnets inside the wing. To disassemble the wing for transport or storage, simply remove the Maxlok key and the wing panels come apart easily. Maxlok is another unique design of Maxford USA. As well as Maxford USA's Max-Cowling, Maxlok will be used in our future designs. (For more about Maxford USA's Max-Cowling see http://www.maxfordusa.com/gm-gb-lnd-gear-m-2.aspx.)



V. SPECIFICATIONS:*

- Wingspan ..... 62 inches
- Wing area ..... 739 square inches
- Length ..... 42 inches
- ARF weight ..... Land: 4 pounds 10 ounces / Float: 6 pounds 7 ounces
- Power system ..... Electric power: 400 to 600 Watt outer-rotor motor (such as Uranus 35425V2), or Glow power: 40-class 2-cycle or equivalent 4-cycle engine
- Propeller ..... 11- or 12-inch diameter x 6- or 7-inch pitch (or larger, per your motor's or engine's maker)
- Radio ..... Minimum of 5 channels
- Servos ..... 6 mini servos for electric power / 7 mini servos for glow power

* (Dimensions and weights are approximate.)

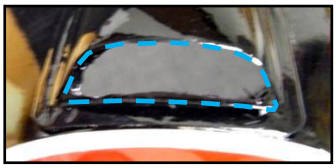
VI. ASSEMBLY INSTRUCTIONS:

1. **Rudder & Elevator Servos** –
   a. Using hardware supplied with your servos, install the rudder and elevator servos in their servo tray.
   b. Connect the EZ Link connectors to the servo arms. Guide the EZ Link connectors onto the rudder and elevator pushrods. (Do NOT tighten the EZ Link connectors onto the pushrods at this time.) Mount the servo arms onto the servos. Connect the servos to your receiver and position the receiver in the space behind the servos.

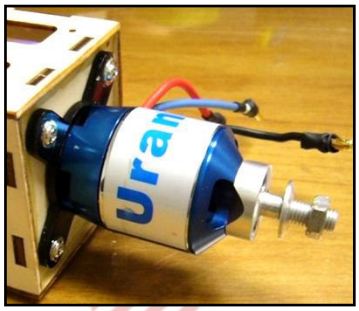


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2. **Motor or Glow Engine, Cowl and Dummy Engine** –



a. If you wish to enlarge the air inlet in the cowl's air scoop, we recommend you wear a dust mask and use a router bit and/or a sanding drum in a high-speed motor tool.

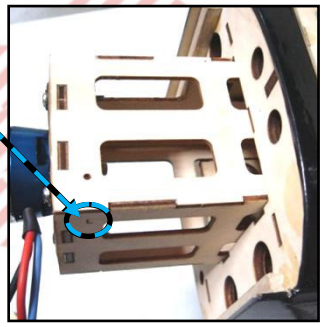


b. Test-fit your motor's propeller shaft to the dummy engine in the An-2's fiberglass cowl. We recommend you wear a dust mask and use a sanding drum in a high-speed motor tool if you need to increase the diameter of the opening in the dummy engine.

c. If necessary, solder any required connectors to your motor, ESC and/or battery.

d. Using the hardware provided with your motor, mount the motor centered on the front of the motor box. (NOTE: We suggest you use threadlock compound to protect the motor-mounting bolts from vibration.)

e. Slide the motor-mounting box into the opening in the firewall.



f. Temporarily place your ESC in the battery compartment and position your An-2's battery on the tray in front of the servos. Use hook-and-loop material to secure your battery to the tray.

L = *Motor box's left side*

g. Connect your ESC to the motor and ESC's throttle lead to your radio receiver's throttle channel; set your transmitter's throttle and throttle trim controls to minimum and switch ON your transmitter; *WITH NO PROPELLER* on your motor, switch ON your transmitter and connect the ESC to your An-2's battery; after you hear a series of initialization sounds, slowly raise the transmitter's throttle to *NO MORE THAN 25%* of maximum. (NOTE: During this test, run your motor slowly and only for the few seconds necessary to observe its direction of rotation.) Return the throttle to minimum and disconnect the ESC from the battery.



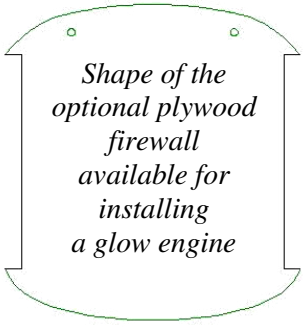
h. If the motor rotated in the clockwise (correct) direction as viewed from the rear of the airplane: Switch OFF the transmitter and set your battery and transmitter aside.

i. If the motor powered up in the counterclockwise (wrong) direction: Swap either two of the three ESC-to-motor wires and repeat the test to ensure the motor rotates in the correct direction.

j. Secure your ESC in the battery compartment. (NOTE: We recommend using an optional nylon-tie wrap to secure your ESC.) ***If you are using an electric power system, proceed to step "u," on page 6.***

If you are using a glow engine: There are no industry-standard dimensions for glow-engine mufflers, carburetor placement, linkages, nor engine mounts. Therefore, glow-engine installation instruction steps "k" through "t" are generalized. Adjust the instructions as necessary to meet the requirements of your particular engine, muffler, carburetor linkages and adjustments and your engine mount. If you need guidance or assistance, contact the maker of your engine, or talk to your local RC club's friendly engine-installation 'guru.'

k. Use epoxy to attach an optional plywood firewall to the front of the An-2's front fuselage former.



Shape of the optional plywood firewall available for installing a glow engine

l. Apply a light coating of epoxy to fuel-proof all exposed wood in the area on and around the firewall.

m. Test-fit your engine and engine mount to the firewall and fiberglass cowl to place the engine's propeller backplate approx. 1/4 inch in front of the cowl.

n. We recommend you wear a dust mask and use a sanding drum in a high-speed motor tool if you need to increase the diameter of the opening in the dummy engine.

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o. We also recommend you wear a dust mask to make any openings in the supplied fiberglass cowl for your engine's muffler, fuel-pressure line, fuel-filler line, and/or to access the carburetor's adjustment screws.

p. Use blind nuts and bolts to attach your glow-engine mount to the firewall.

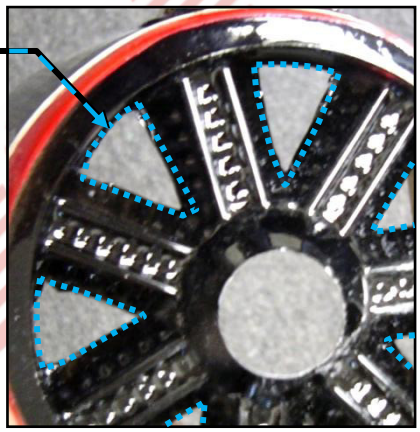
q. Using the hardware recommended by your engine's manufacturer, attach your engine to its mount.

r. Test-fit your throttle pushrod and fuel tank. Select which of the two servo-tray openings nearest the engine may be best suited for your throttle servo. Install your throttle servo and connect the throttle servo's lead to your receiver.

s. Make any required openings in the firewall for your tank's clunk, pressure and filler lines. Install your fuel tank and route the necessary lines from your tank, through the firewall, and to your engine.

t. Make an opening in the firewall to connect your throttle pushrod between the throttle servo and the throttle arm on your engine's carburetor. Install your throttle pushrod.

u. We recommend you wear a dust mask and use a router bit and/or sanding drum in a high-speed motor tool if you choose to remove any excess molding flashing from the spaces between the dummy engine's cylinder heads.



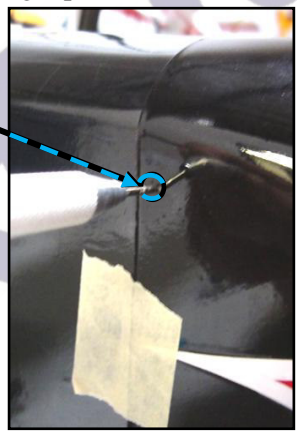
v. Slide the cowl over the motor or engine with its air scoop at the top.



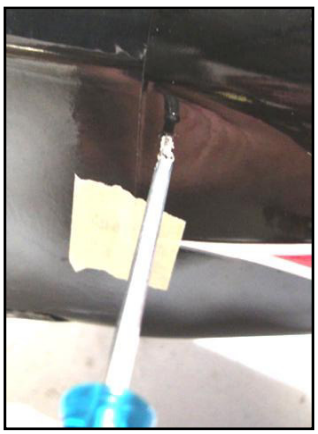
w. If you are using a glow engine, attach the muffler and secure all fuel lines and any other required connections. Slide the cowl back so that it overlaps the sides of the An-2's fuselage nose-pieces by at least 1/2-inch.

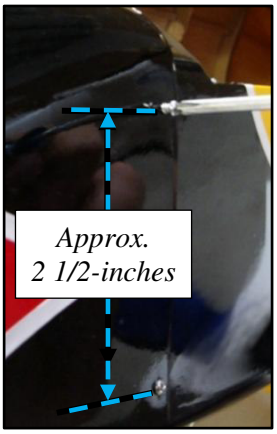
x. Mount a propeller on your motor's or engine's propeller shaft. If using electric power, use epoxy to secure the motor-mounting box inside its opening in the fuselage. Position the cowl to center the propeller's backplate in the dummy engine and to provide approx. 1/4-inch prop clearance in front of the cowl. Use masking tape to hold the cowl in position.

y. As shown at the right: using a sharp scribe or a 1/16-inch drill bit, make two guide holes on both the left- and right-hand sides near the back edge of the cowl.



z. Drive a 5/16-inch-long wood screw into each of the guide holes to secure the cowl to the sides of the fuselage. Remove and discard the masking tape.

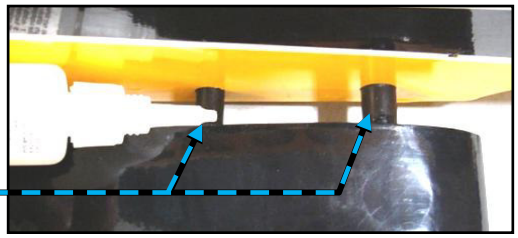




3. **Landing Gear and Lower Wing** –

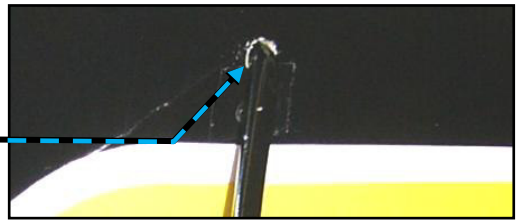
(NOTE: See instructions for building the float version on p. 15.)

a. Align the lower wing's fairings' stub tubes with the openings on each side of the fuselage; cut away the Mylar covering the openings in the fusealge for these stub tubes.



b. Test-fit the stub tubes into their openings. Apply CA adhesive to the stub tubes. Press the lower wing's fairings against the sides of the fuselage until the adhesive has set.

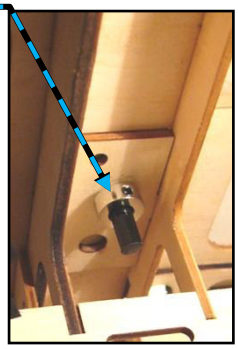
c. Position the airplane on its back. Gently spread the landing gear and guide the top ends of the upper struts into their precut openings on each side of the fuselage.



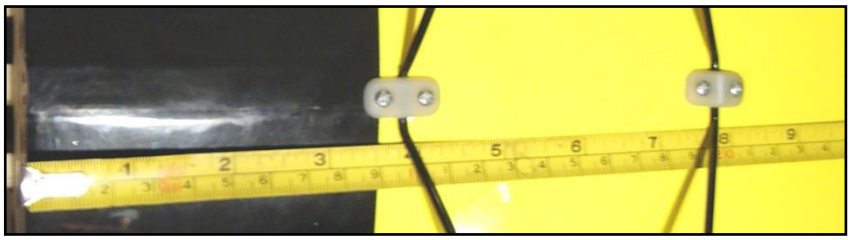
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d. Press the upper ends of the struts firmly into the fuselage and use wheel collars to anchor the ends of the upper struts inside the fuselage.

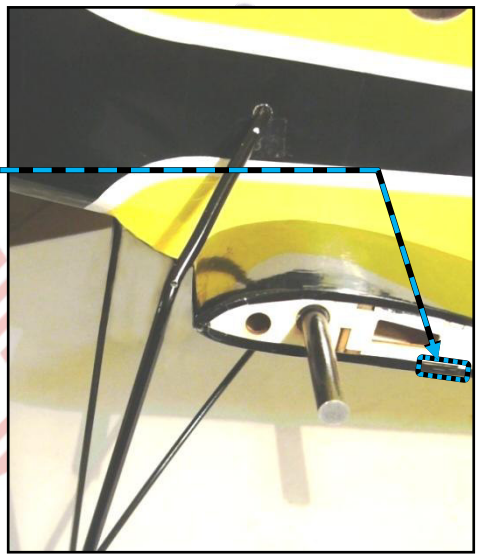


e. Use plastic brackets and 5/16-inch long wood screws to attach the main landing-gear struts at the center of the fuselage.



f. Slide the lower wing's wing rods (each is approx. 13-inches long) into the stub tubes. Center the wing rods on both sides of the fuselage.

g. As you slide the lower wing panels onto their wing rods, align the wooden tabs projecting from the root ribs of the wing panels with the rectangular openings in the lower wing's fairings.



h. Secure the lower wing panels to the fairings by inserting a Maxlok key (metal pin) into the opening in the bottom of each wing panel. Allow each key to 'seat' firmly against the magnets inside the wing panels.

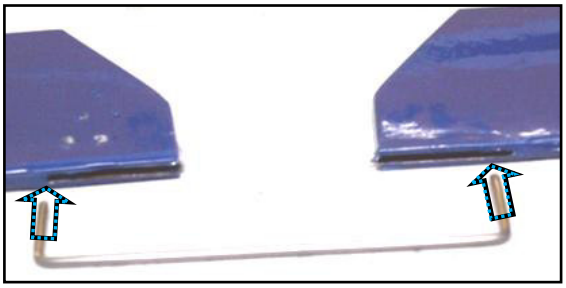
i. Slide a main-landing-gear wheel onto each axle. Use wheel collars to secure the wheels to their axles. (NOTE: If desired, you may use a high-speed motor tool with a cutoff wheel to remove any excess axle beyond the wheel collars.)



4. **Tail Surfaces** –

a. Test-fit the elevator's metal joiner into the slots and openings in each half of the elevator. If necessary, cut through any Mylar covering the slots and/or openings.

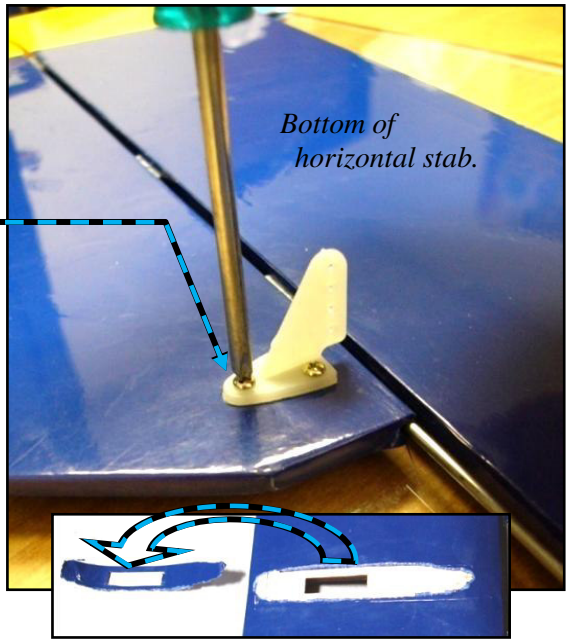
b. Use epoxy to secure the ends of the joiner to the elevator. Place the elevator on a flat surface to align both halves evenly until the epoxy cures fully.



c. Test-fit the vertical stabilizer, rudder, horizontal stabilizer, and both halves of the elevator with their CA hinges. If necessary, cut through any Mylar covering the CA-hinge slots.

d. Attach the elevator to the horizontal stabilizer with CA hinges and thin CA adhesive.

e. Use a backplate and small machine screws to attach a control horn to the bottom-right side of the elevator.



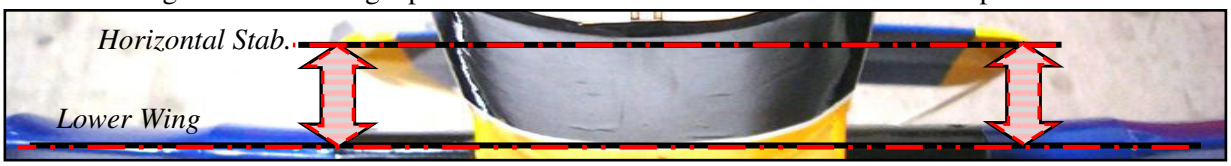
f. Ensure good wood-to-wood glue joints by cutting and removing any Mylar covering the top and bottom of the horizontal stabilizer that will be glued to the fuselage and to the vertical stabilizer. (NOTE: We recommend you gently use the hot tip of a soldering iron to cut the Mylar; a sharp blade may damage the wood.)

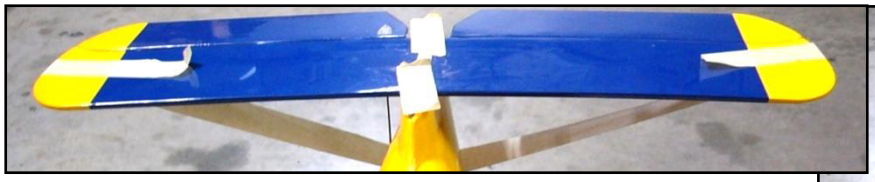
g. Twist the control horn onto the elevator's pushrod, then center and align the horizontal stabilizer on its platform at a right angle to the centerline of the fuselage. Use epoxy to secure the horizontal stabilizer to the fuselage.

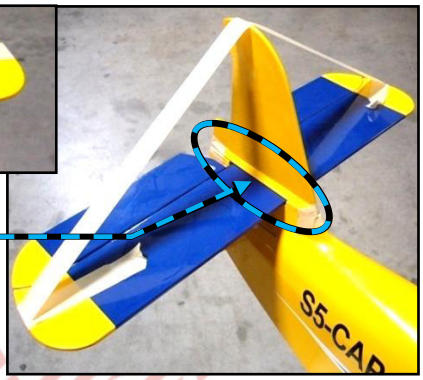
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h. Visually compare the surface of the horizontal stabilizer to the lower wing. If the horizontal stabilizer appears to be at a different angle than the lower wing, reposition the horizontal stabilizer to align with the lower wing and use masking tape to hold the horizontal stabilizer in the correct position.







i. Test-fit the vertical stabilizer into its slot in the center of the horizontal stabilizer and to the fuselage. Align the trailing edge of the vertical stabilizer with the rear edge of the fuselage and at 90 degrees to the horizontal stabilizer. Apply epoxy and use masking tape to hold the vertical stabilizer in position until the epoxy is fully cured. After the epoxy is fully cured, remove the masking tape from the horizontal and vertical stabilizers.

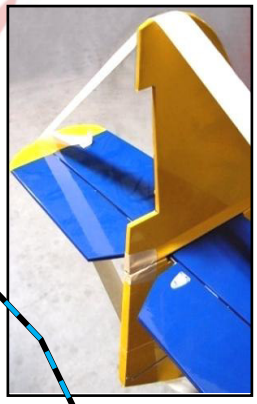
j. Use a small wheel collar to attach the tail wheel to its strut.

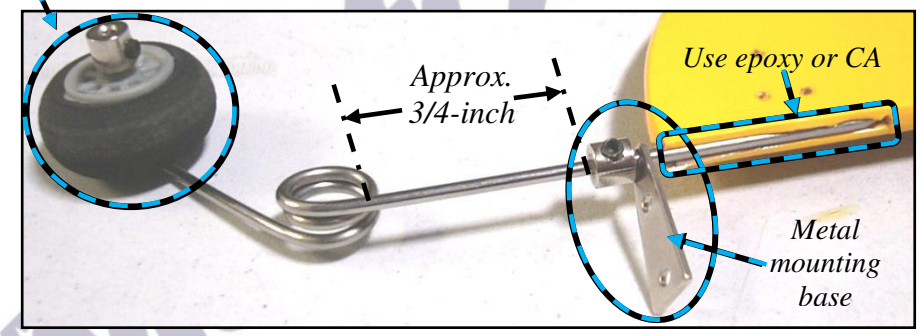
k. Position a small wheel collar and the tail-wheel-strut's metal mounting base onto the tail wheel's strut as shown below.

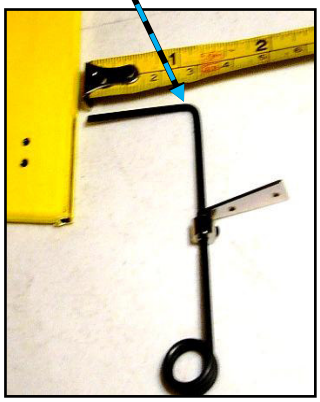
l. Test-fit the tail wheel's strut to the rudder and the rudder to the vertical stabilizer; form a 90-degree bend in the tail-wheel's strut approx. 1 1/4-inches from the top end of the strut.

m. Test-fit the bent end of the strut into the slot and opening in the rudder. If necessary, remove any excess Mylar covering the openings and cut off any excess length of the bent end of the strut. (Leave approx. 1-inch of the bent end to insert and glue into the opening in the rudder.)

n. Use epoxy or CA adhesive to secure the tail-wheel strut to the rudder.

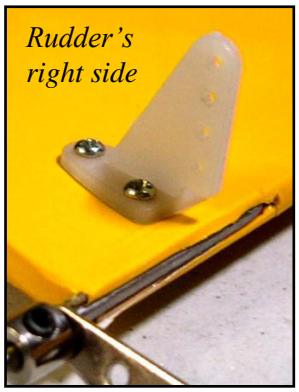


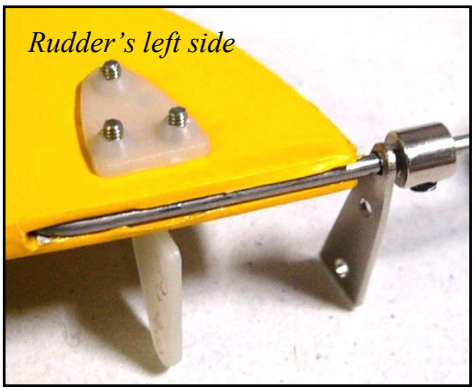




o. Use a plastic backplate and machine screws to attach a control horn to the right side of the rudder.

p. Twist the control horn onto the rudder's pushrod. If necessary, cut through any Mylar that may be covering the CA hinge slots, and test-fit three CA hinges into their slots in the rudder and the vertical stabilizer.

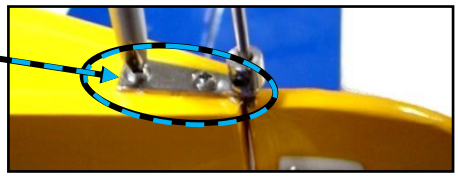




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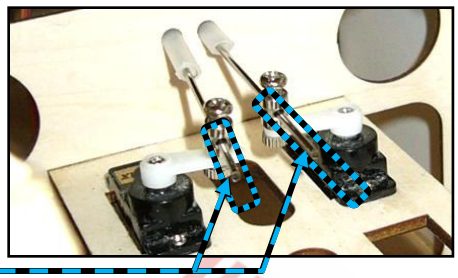
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q. Use two 5/16-inch wood screws to attach the tail-wheel-strut's metal mounting base to the bottom of the fuselage.



r. Apply thin CA adhesive to the CA hinges to permanently secure the rudder to the vertical stabilizer.

s. Center the rudder and elevator servos using your radio or a servo tester (for more information on using a servo tester, see http://www.maxfordusa.com/servotester.aspx). While holding the rudder at a 'straight ahead' position, tighten the rudder servo's EZ Link connector onto its pushrod. While holding the elevator at a 'level flight' position, tighten the elevator servo's EZ Link connector onto its pushrod.



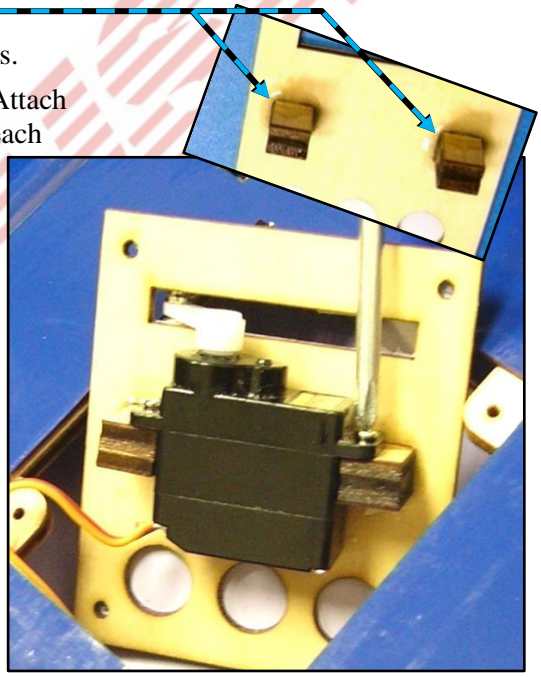
t. Cut off and discard the ends of the rudder and elevator pushrods that extend excessively forward of their EZ Link connectors.

5. **Ailerons and Flaps** –

a. Test-fit your aileron and flap servos to their hatch covers. Use epoxy to attach two servo-mounting pedestals to the inside of each servo hatch cover.

b. Attach EZ Connectors to the arms of the aileron and flap servos.

c. Attach the aileron and flap servos to their servo hatch covers. Attach a 12-inch servo extension to each servo. Mark the free end of each extension with an "**A**" for **A**ileron or "**F**" for **F**laps. (NOTE: We recommend you install optional Maxford USA servo-extension safety clip at each extension- and Y-cable connection; for more servo-safety-clip information see http://www.maxfordusa.com/servoextensionsafetyclip.aspx.)



d. Guide the extensions out through the root ribs. Secure each servo hatch cover to the wing with four 5/16-inch wood screws.



(1/4-inch squares)

e. Using your radio or a servo tester, center the aileron servos and place the flap servos at their full UP position. Test-fit the ailerons, flaps, CA hinges, servo arms, control horns and pushrods. (NOTE: If necessary, cut thruough any excess Mylar covering the CA hinge slots and reposition the aileron and/or flap control horns to fit your servos.)

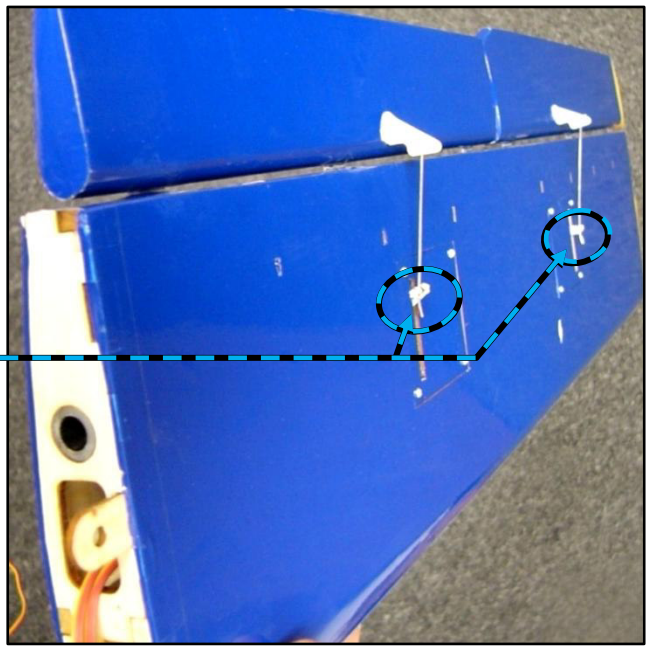
f. Attach a control horn to each aileron and flap with thin CA.

g. Attach the ailerons and flaps to the wing panels with CA hinges and thin CA adhesive.

h. Using the pushrod's Z-bends, attach the aileron and flap pushrods to their control horns.

i. Using EZ Link connectors (see http://www.maxfordusa.com/hs-5g-blue-1-2-1.aspx for more information) attach the aileron and flap pushrods to their servos.

j. Cut off and discard the excess length from each pushrod.



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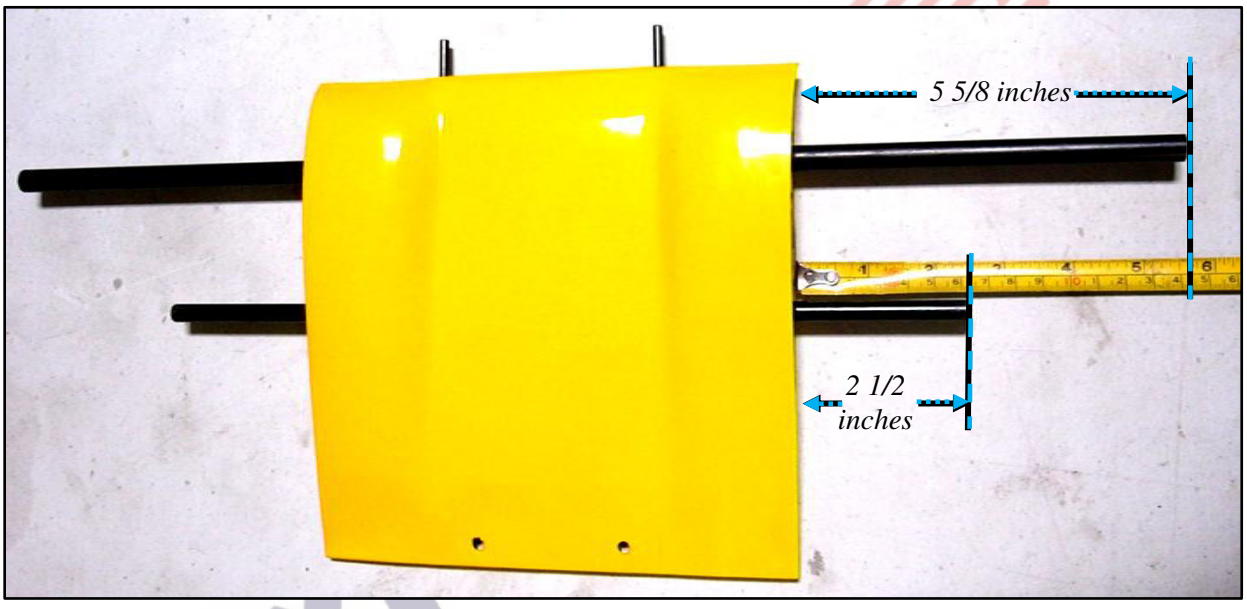
6. **Upper Wing Assembly & Struts –**

a. Test-fit two 1 1/4-inch long carbon-fiber rods into the openings in the leading edge of the top wing's center section. Leaving approx. 1/2- to 3/4-inch (1.5 to 2 cm) of each of the carbon-fiber rods exposed, use epoxy to secure both rods into the center section. (NOTE: To ensure both rods are correctly aligned, before the epoxy cures, insert both rods into their openings in the fuselage former at the back of the cockpit/hatch opening; be careful to *NOT* glue the top wing's center section or its mounting rods to the fuselage.)



b. When the epoxy holding the carbon-fiber mounting rods is fully cured, insert the upper wing's wing rods into the center section. (The front wing rod is approx. 18 1/2 inches long and the rear wing rod is approx. 13 inches long.) Center the upper wing's wing rods in the top wing's center section.

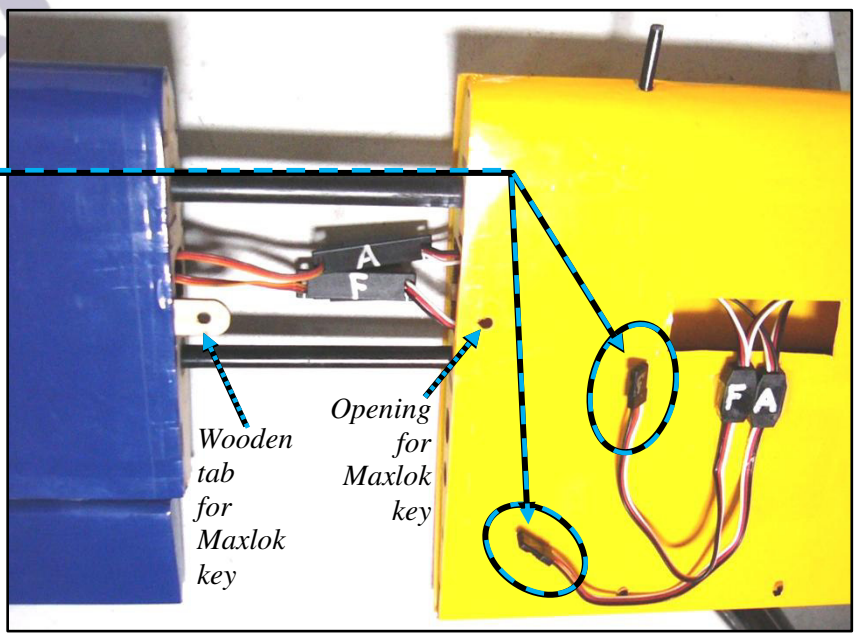




c. Mark the ends of two Y-cables, one with "**A**" for **A**ilerons and the other "**F**" for **F**laps.

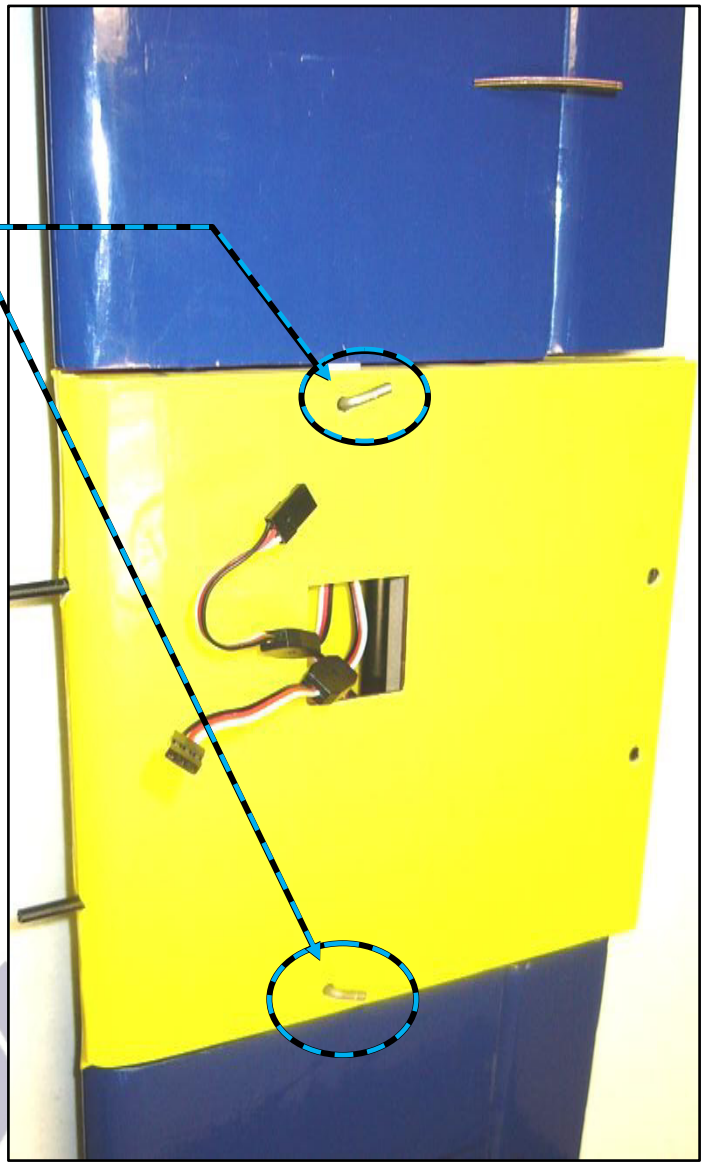
d. Position the Y-cables inside the center section with their servo-type connectors at the center and their pin-type connectors at the openings in the left and right sides.

e. Align and slide the wing panels onto their wing rods. As each panel nears the center section, attach the aileron and flap extensions to their corresponding Y-cables. (NOTE: We recommend using optional servo safety clips, as shown at the right.)



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f. With the ailerons and flaps connected to their Y-cables, continue sliding the wing panels toward the center section and carefully guide each wing panel's wooden tab into its opening in the center section. Secure the wing panels to the center section with their Maxlok keys.



g. Position the assembled wing above the fuselage's wing saddle. Attach the aileron's and flap's Y-connector leads to the aileron and flap channel ports on your radio receiver.

h. Following the instructions given by your radio receiver's manufacturer, secure your receiver within the open space behind the rudder and elevator servos.

i. Guide the top-wing-center-section's front mounting rods into their openings in the fuselage former at the back of the cockpit/ hatch opening.



j. Gently lower the trailing edge of the wing toward the wing saddle and attach the wing loosely to the fuselage by inserting two machine screws into the wooden wing hold-down plate inside the fuselage – only 'start' these two top-wing center-section attachment screws (do not tighten these screws at this time).

k. Gently spread the top and bottom wing panels apart enough to test-fit the wing's interplane struts into their mounting slots in the wing panels. If necessary, enlarge the struts' mounting slots and/or gently bend the free ends of the metal tabs at the top and bottom of each strut to align with their corresponding slotted openings in the wing panels.



l. To make the best-possible glue joints, drill a 1/16-inch (1 mm) diameter hole near the free end of each metal tab.

m. Apply epoxy to the free ends of the metal tabs to secure the interplane struts within their slotted mounting openings in the wing panels.

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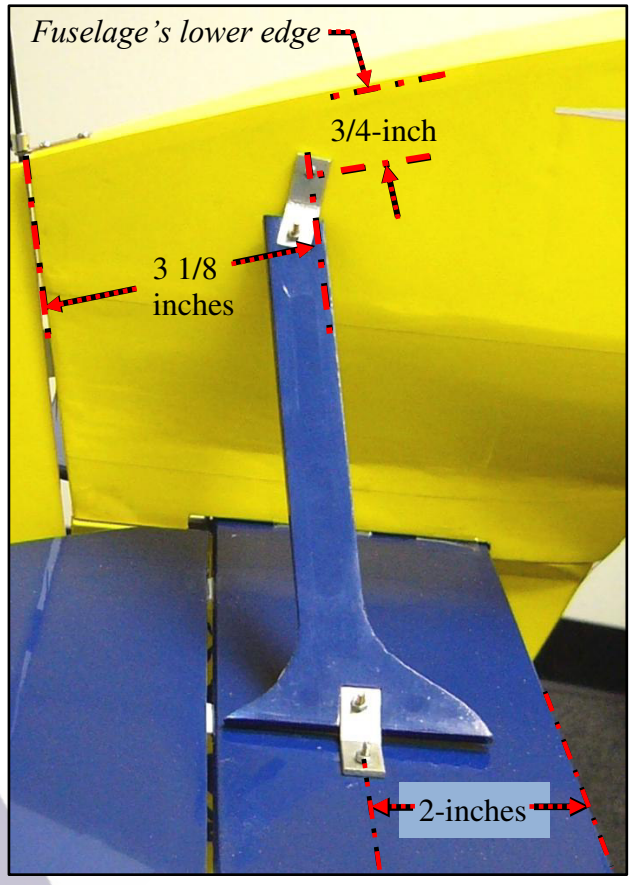
n. Firmly secure (but do not over tighten) the top wing's center-section attachment screws.

o. Gently bend the metal tab(s) at each end of the horizontal stabilizer's struts to align with the bottom of the horizontal stabilizer and the side of the fuselage.

p. At approx. 3/4 inch (2 cm) from the lower edge of the fuselage and 3 1/8 inch (8 cm) from the rear edge of the fuselage, use a 5/16-inch-long wood screw to attach the lower end of each horizontal stabilizer's strut to the side of the fuselage.

q. Visually compare the angle of the horizontal stabilizer to the wings to determine and mark how far from the fuselage the struts should attach to the horizontal stabilizer.

r. Use a 5/64 inch (2 mm) drill to make a hole 2 inches (5 cm) back from the leading edge of the horiztonal stabilizer at the marked locations. Attach the struts to the horizontal stabilizer with a 5/16-inch-long bolt and matching nut.

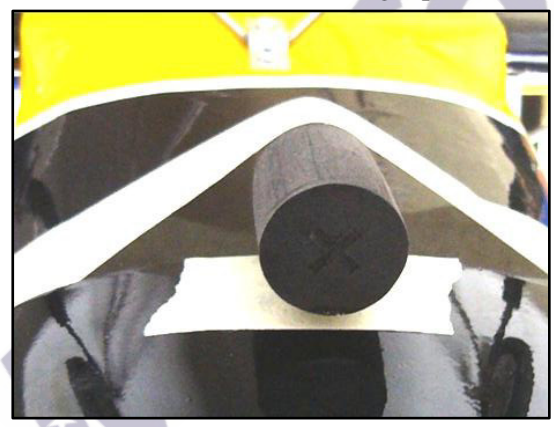


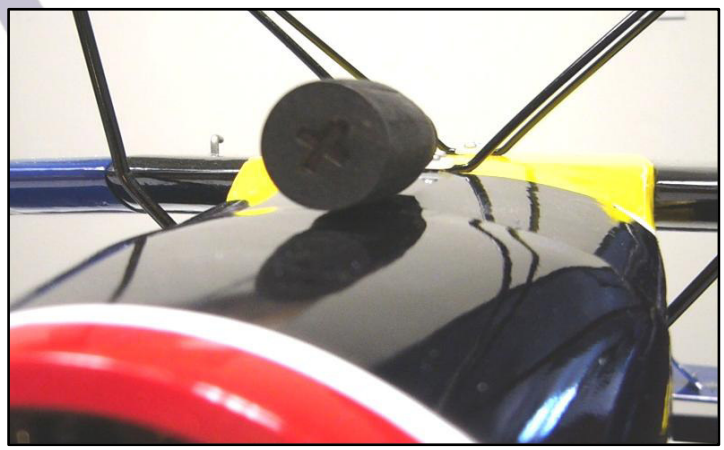
7. **Finishing Touches** –

NOTE: Since the items listed in this section are only 'cosmetic' (designed merely for appearance), you may install all, any, or none, as you choose.

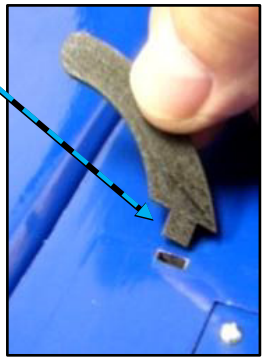
a. Drill a 3/16-inch diameter hole at the bottom center of the fuselage, approx. 1/4-inch behind the back edge of the fiberglass cowl.

b. Use epoxy and a carbon-fiber rod to mount the simulated 'oil cooler' in the 3/16-inch hole in the fuselage. Hold the simulated 'oil cooler' in position with masking tape. After the epoxy is fully cured, remove and discard the masking tape.





c. Use epoxy to permanently mount the under-wing simulated 'hinges' in their rectangular openings on the bottom side of the upper wing as shown at the right.



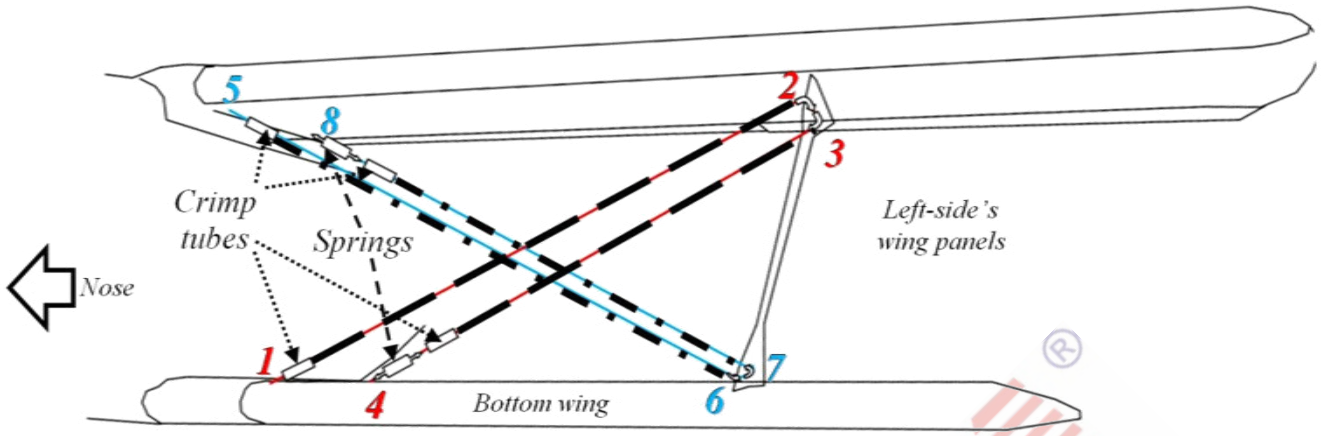
d. If you decide to install wing wires, use pliers to attach a spring to one end of four(4) swivels.



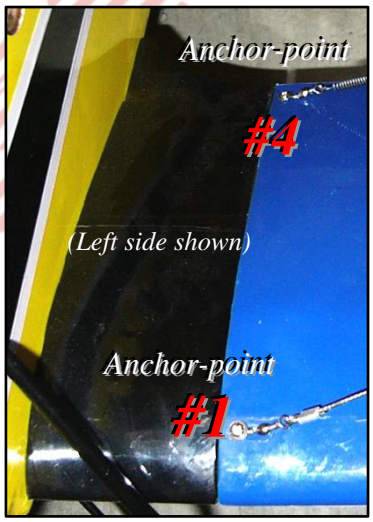
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e. Install the wing wires between the left-hand side set of wing panels as shown and explained below:

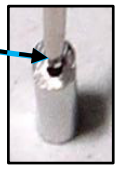


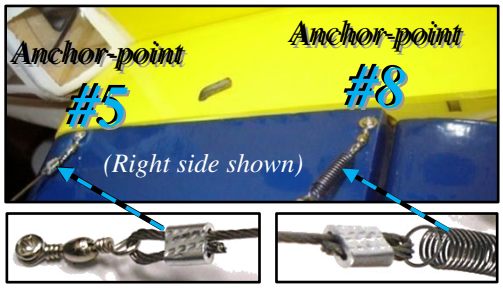
f. Using 5/16-inch long wood screws: Attach the *END OF A SWIVEL OPPOSITE ITS ATTACHED SPRING* as anchor point **#4** (on the top of the bottom wing, 3/8 inch forward of the trailing edge and 1/8 inch out from the seam-line between the lower wing panels and their fairings); Attach the *END OF A SWIVEL OPPOSITE ITS ATTACHED SPRING* as anchor point **#8** (on the bottom of the top wing, at the front edge of the flap's hinge-line and 1/8 inch from the top wing's center section). Use thin CA adhesive to harden the wood where you attach each of the wood screws and swivels.



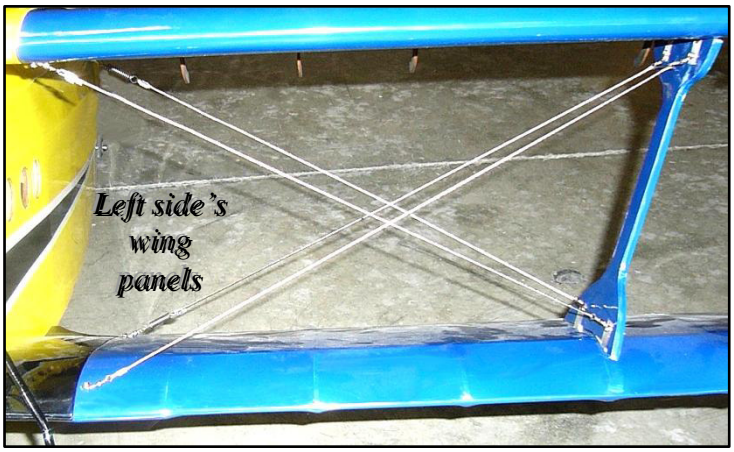
g. Using 5/16-inch long wood screws: Attach the end of a swivel (one of the swivels *WITH NO SPRING ATTACHED*) as anchor point **#1** (on the top of the bottom wing, 5/8 inch back from the leading edge and 1/8 inch out from the seam line between the lower left wing panel and its fairing); Attach the end of a swivel (one of the swivels *WITH NO SPRING ATTACHED*) as anchor point **#5** (on the bottom of the top wing 1/8 inch from the top wing's center section and 5/8 inch behind the top wing's leading edge).

h. Use a crimp tube and pliers to secure the wire to anchor point **#1**; Guide the wire through the free ends of the swivels at anchor points **#2** and **#3**; Slide a crimp tube onto the free end of the cable and guide the cable through the free end of the spring at anchor point **#4**. (NOTE: Use the sharp tip of a scribe or a small nail to expand the openings in the crimp tubes if necessary.) Bring the cable back into and through the crimp tube; Draw the cable tight enough to stretch the spring double its relaxed length; Adjust the position of the crimp tube on the cable to form a small loop in the cable at the end of the spring; Use pliers to crimp the tube onto the cable; Use cutting pliers or a cut-off wheel in a high-speed rotary tool to cut off the free end of the cable close to the crimp tube.





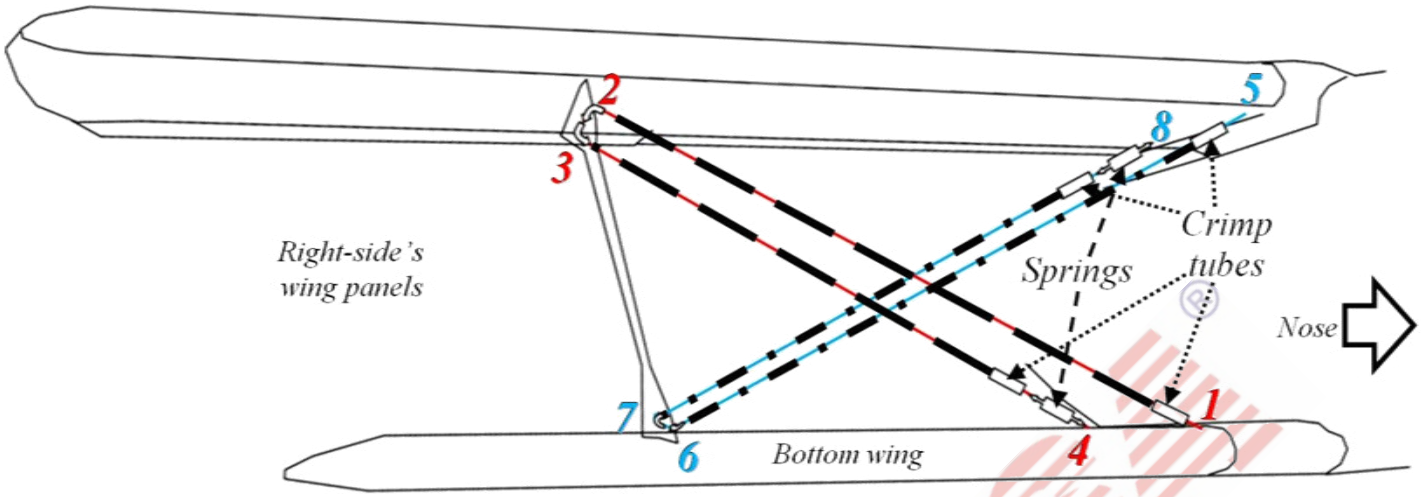
i. Use the remaining wire, a crimp tube and pliers to install the second wing wire between the left side's pair of wing panels: Secure the wire at anchor point **#5**; Guide the wire through the free ends of the swivels at anchor points **#6** and **#7**; Stretch the spring, use a crimp tube to attach the wire to the spring at anchor point **#8** with a crimp tube, and cut off the free end of the cable close to the crimp tube. When complete, the wing wires should appear as shown below in the photo of the left-side wing panels.



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j. Install the wing wires between the right-hand side set of wing panels by repeating steps "e" through "i" on the previous page, but replace '*left side*' with '*right side*' as shown below:

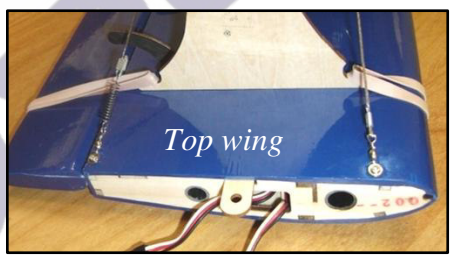


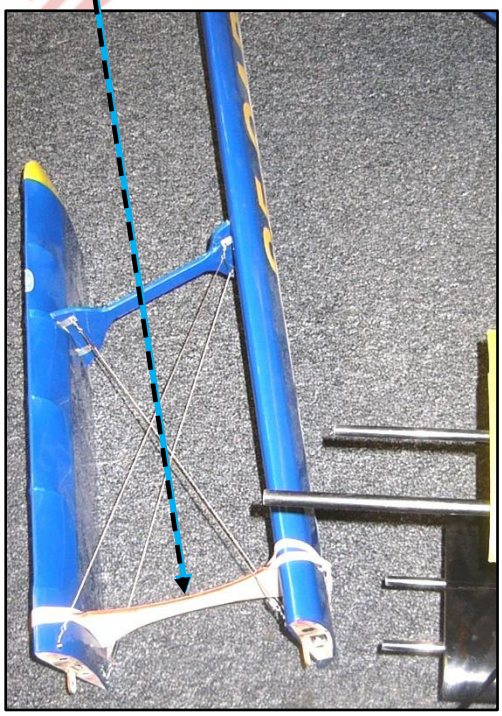
Congratulations! Assembly is finished!

VII. TRANSPORT:

1. Use rubber bands or string to secure the provided plywood wing supports between the inboard ends of each set of left and right pair of wing panels to safely hold the An-2's wing panels in alignment for removal, storage, transport and wing reattachment.
2. Remove and safely store the four Maxlok connecting pins.
3. Slide each left- and right-hand side set of wing panels approx. 2 inches away from the fuselage and disconnect the aileron and flap-servo extensions from their Y-cables. (NOTE: We recommend leaving the top wing's center section, Y-cables, servo-extension safety clips and wing rods in their fuselage-mounted positions.)
4. Continue sliding the wing panels away from the fuselage, off their wing rods, and completely remove the wings.







5. Transport and store your Antonov An-2 to await its next flight.
6. Prepare for flight by reversing the above steps 1 through 4.

VIII. SETUP & ADJUSTMENTS:

1. Center of gravity: For your initial flight we recommend that your Antonov An-2 balance when lifted at a point approx. 2 inches (5 cm) behind the leading edge of the top wing; when correctly balanced, it should hang level, neither nose up nor nose down.
2. Servo centering and direction: When you pull the right stick toward you, the elevator should deflect upwards; push the right stick to the right and the right aileron should deflect upwards and the left aileron should deflect downwards; push the left stick left and the rudder should deflect to the left as viewed from the rear of the fuselage.

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3. Servo end-point adjustments: If you are using a Computer Radio, for initial flights set the elevator, rudder and aileron linkages for near-maximum-possible deflections, and use your transmitter to add some 'exponential' to soften the aileron's, elevator's and rudder's control throws around center. Initial settings if you are using a Non-computer Radio:

	Recommended Deflection
Elevator	15 degrees (3/4 inches) up and down from center
Rudder	30 degrees (1 inch) left and right from center
Ailerons	20 degrees (1/2 inches) up and down from center
Flaps	25 degrees (3/4 inches) down from center

4. Check the Mylar covering material's joints and surfaces. If necessary, carefully 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 use too much heat when you secure edges or tighten the Mylar. If any trim becomes loosened, press it down and/or apply clear tape. Never apply heat to any trim, insignias, markings, the plastic canopy, windows or the top wing's center section.
5. Ensure the propeller is securely attached to your motor or engine and remains undamaged and correctly balanced.
6. As with all radio-controlled model airplanes, your Antonov An-2 must pass the radio-range ground check recommended by your radio's manufacturer or you may not fly safely.

IX. INSTRUCTIONS FOR BUILDING THE FLOAT VERSION:

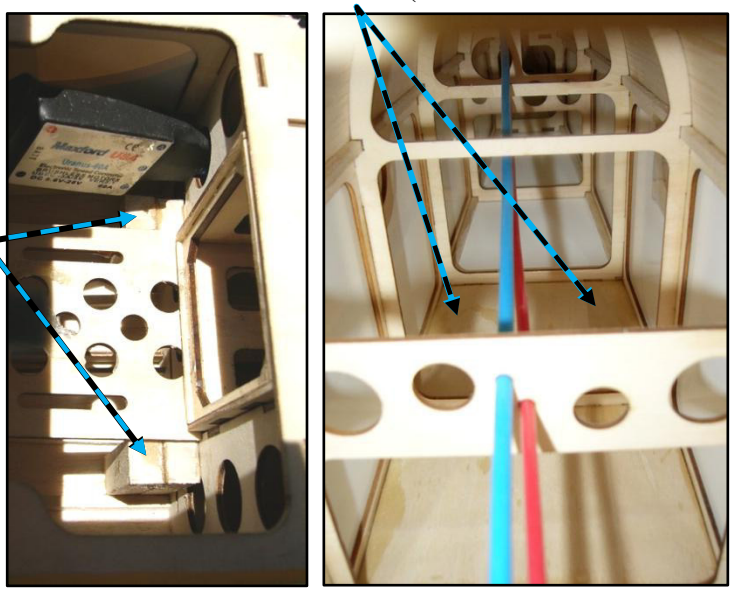


Since real-life versions of the full-scale An-2 were built with tail-dragger landing gear to fly from land and with floats for flying from water, this Radio-Controlled ARF model of the An-2 provides you the option of floats.

If you are not yet experienced at setting up a float plane, we recommend that you review the detailed floats instructions written for our profile P-47 and P-51 on pages 9 through 11 in the instruction manual found at http://www.maxfordusa.com/manual/p4751manual.pdf.

AN-2 FLOAT INSTALLATION ASSEMBLY NOTES:

1. Since the way customers assemble this airplane may vary, we recommend first attaching the struts to the floats, then test-fitting the floats to determine where to attach the floats' struts. (NOTE: You have some freedom of choice about where to attach the the struts since the bottom of the fuselage is all wood from the nose to approx. 2/3 of its length.)
2. Reinforce the bottom of the fuselage under the cockpit where the front strut will be attached by using epoxy to add two pieces of hard wood.
3. When the epoxy is fully cured, gently bend the center section of the float's aluminum front strut to fit the contour of the bottom-front of the fuselage.
4. Drill two holes through the front strut to attach the strut to the fuselage at the location of the hard wood. Drive two wood screws through the strut and into the hard wood.

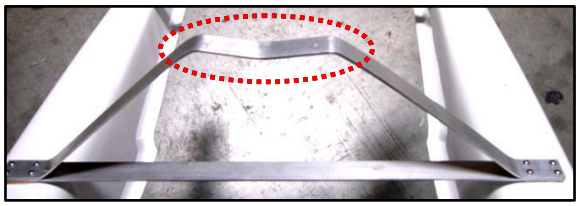


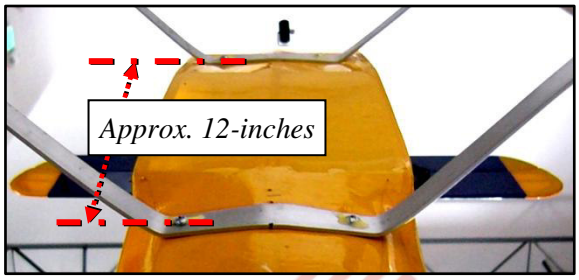
(NOTE: We recommend using thin CA adhesive to harden and seal the wood at each wood screw.)

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5. Mark and drill two holes in the rear strut where the strut will be attached to the fuselage (approx. 12 inches/31 cm behind the front strut).
6. Use epoxy to glue a piece of plywood inside the bottom of the fuselage to reinforce the area where the rear strut will be attached. When the epoxy is fully cured, drive two wood screws through the holes in the rear strut and into the two layers of plywood inside the fuselage. (NOTE: If you prefer, blind nuts and bolts may be substituted for wood screws to attach the rear strut to the fuselage.)
7. Install the water rudder and use the supplied rudder cable to link the air rudder with the water rudder. Be certain your airplane's rudder and the float's water rudder turn in the same direction.





7. As detailed in the setup and adjustments section on page 14 (all of which which fully applies, whether you are flying the land or water-based version), carefully recheck that all control surfaces operate smoothly and that all screws, linkages and connections are secure. (NOTE: We strongly recommend the use of a thread-lock compound to help protect all hardware items from vibration.)
8. Set the center of gravity (CG) to approx. 2 inches (5 cm) behind the leading edge of the top wing; this is the same location for the CG specified on page 14 in setup and adjustments item VIII – 1.
9. Before every takeoff, remind yourself to compensate for your float-plane's extra, redistributed weight and for the floats' additional drag.

Congratulations on completing assembly of your new Antonov An-2.
May you enjoy many 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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Maxford USA RC Model Mfg, Inc.

Distributed by:
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