

Antonov An-2

14% Scale Radio Control Model Airplane ARF

INSTRUCTION MANUAL

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Congratulations on your purchase of Maxford USA's scale Antonov An-2 !

We invite you to enjoy the pride of ownership and the joy of flying this high quality balsa, composite, and light-ply Almost-Ready-to-Fly aircraft.

Maxford **USA**®

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HISTORY

The Antonov An-2 (nicknamed "*Annushka*" or "Annie" and NATO reporting name "Colt") is a single-engine biplane utility and agricultural aircraft that was designed in the USSR in 1946. The AN-2 saw use as a light utility transport, a parachute drop aircraft, an agricultural work aircraft and many other tasks suited to such a large slow-flying biplane. Its slow flight ability made it suited for short, unimproved fields. 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 have been built at Poland's WSK factory in the city of Mielec in south-eastern Poland, with over 13,000 made there before full production ended in 1991. Limited production from parts stocks, as well as spares and maintenance coverage continued until 2001, when four were produced for Vietnam. China also builds the AN-2 under license as the Shijiazhuang Y-5.

This RC version we designed is approximately 14% scale, with a 102" wingspan and is designed for the customer's choice of gas/glow or electric power systems. There are two different color schemes available, Red or Blue at your choice.

IMPORTANT SAFETY PRECAUTIONS TO PROTECT YOUR MODEL, YOURSELF & OTHERS

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 build 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 the model airplane according to these instructions. We recommend that you do not alter or modify the model, as doing so may result in an unsafe or unworkable model. In a few cases the instructions may differ slightly from the photos; in those instances 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 us at (562) 529-3988, Monday through Friday, except national holidays, between 9 AM to 5 PM Pacific time.
3. It is your responsibility to install the R/C system and other components in such a way that this model airplane passes all applicable safety/range tests and that the power system and controls operate smoothly and correctly.
4. 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 clevises and other connectors; do not fly without replacing any that you find damaged or defective.
5. If you are not an experienced R/C pilot or have not flown this type of model before, we recommend that you get the assistance of an experienced R/C pilot.
6. Throughout the lifetime of this model, use only the Maxford USA-recommended or same-sized engine or equivalent electric power system and a new or well-maintained R/C radio system and batteries recommended by the maker of the engine (or motor) and radio system.

7. **LITHIUM BATTERY HANDLING & USAGE: WARNING!!** If you use LiPo batteries, read the battery's instruction sheet or on-line information. 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 for battery damage. Do NOT use or charge a damaged Li-Po battery.

ONLY use a LiPo approved charger. (NEVER use a NiCd/NiMH charger!)

ALWAYS set the charger's output to match the battery's voltage and mAh ratings.

ALWAYS charge through the battery's "charge" connector. (NEVER charge through the "discharge" leads.)

ALWAYS charge in a fireproof location.

NEVER place on combustible materials or leave unattended during charge or discharge.

NEVER charge a LiPo battery in excess of 4.2V per cell.

NEVER discharge a LiPo battery below 2.5V per cell.

NEVER allow battery temp. to exceed 150° F (65° C).

NEVER charge at a current greater than 1C (for example, in the case of a 900 mAh battery, that's 0.9 amps).

NEVER trickle charge.

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

KEEP BATTERIES OUT OF CHILDREN'S REACH

8. While this kit has been flight-tested to meet or exceed our rigid performance and reliability standards in normal use, if you plan to perform any extremely high-stress flying, such as racing or advanced aerobatics, or if you plan to install a larger engine (or motor) 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.
9. This model may include fiberglass and/or carbon-fiber reinforced plastic parts that may require some cutting or sanding. Carbon-fiber and fiberglass dust may cause eye, skin and respiratory tract irritation. If you ever grind, drill or sand such parts, always wear safety goggles, a particle mask and rubber gloves; never blow into such a part to remove fiberglass or carbon-fiber dust, as the dust may blow back into your eyes.

WARRANTY, LIABILITY WAIVER, AND RETURN POLICY

Maxford USA guarantees this kit to be free from defects in material and workmanship at the time of purchase. All of 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 nor 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 in item 2, below.

If you think there is a missing part or any shipping damage, please read our after-sales service and return policy as outlined below.

1. Inspect your order upon delivery for any shipping damage or missing part. If you find a problem you must contact us within 10 days from receipt of your purchase by calling (562) 529-3988, Monday through Friday, except holidays, between the hours of 9 AM and 5 PM

Pacific time. During this telephone conversation, and with your support, we will determine how to resolve your concern. (NOTE: Maxford USA Li-Po batteries are sold without warranty and are not eligible for return or credit.)

2. To request an 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 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 RC Model Mfg, Inc.
13630 Imperial Hwy, #11
Santa Fe Springs, CA 90670

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

SPECIAL FEATURES OF 14% AN-2 ARF

- All assemblies are pre-covered and required openings are predrilled and/or precut.
- The fiberglass cowl and scale look dummy engine are prefinished.
- True scale suspension landing gear
- Each elevator is separately operated by its own servo.
- Scale looking removable canopy
- Functional flaps
- Easy-remove wings with Max-lok system
- Available in 2 different color schemes

SPECIFICATIONS*

Wingspan 102 inches
Wing Area 1,969 sq. inches
Overall Length 70 inches
ARF weight 16.5 pounds
Flying weight about 20.9 pounds

Power System (Not included) 50cc gas engine or equivalent electric motor
Propeller (Not included) as-recommended for your power system
Radio system (Not included) Minimum of 5 channels, 7~8 standard servos

*(All dimensions and weights are approximate.)

PARTS LIST

1. Items you must supply to complete this An-2

- 5- and 30-minute epoxy glue, thin and thick Cyanoacrylate (CA) adhesives, and a few common hand tools (such as long-nosed and diagonal or side-cutter pliers, Phillips screwdriver, etc.).
- A 50cc gas engine or equivalent glow engine or electric power system.
- Propeller as recommend by your power system.
- 8 standard size servos or 7 servos for electric set up, servo extensions, and Y cables.
- Minimum 5-channel radio control system.

2. Items included with this An-2 ARF

- Precovered fuselage, wing panels, rudder, horizontal stabilizer and elevators.
- Pre-painted fiberglass cowl with dummy engine.
- Fully assembled wheels.
- Precut hinge openings and all required hinges.
- Aileron, flap, rudder and elevator pushrods and related linkages.
- Wing joiner tubes, all required control horns, and all related hardware (except those items normally supplied with servos and the electric motor).
- Flying wires and all related hardware.



ASSEMBLY INSTRUCTIONS

BEFORE YOU START:

- ☐ Open the box and look over the parts. Check everything against the parts list and make sure everything is there and undamaged. If anything is missing or broken, contact your dealer within 10 days of receipt of the kit

- ☐ Mark the top of the sliding motor mount box to make sure that you don't later put it in upside down.
- ☐ If necessary, use a covering iron to go over the covering material on all of the parts to eliminate any loose edges or air bubbles, then re-shrink the covering over all the open areas.

ATTACH THE CONTROL SURFACES:

- ☐ The hinge slots are precut in the leading edge of the control surfaces and the trailing edge of the wing and stab. Push the provided hinges into the slots/holes in the control surfaces so that half of the hinge is exposed. **DO NOT GLUE THE HINGE IN YET.**



- ☐ Push a T-pin or straight pin through each hinge right next to the front of the control surface. Test fit then glue.
- ☐ Attach hinges to all control surfaces. Make sure you test fit each of them. Do not glue until you are fully satisfied. Be careful not to glue the hinge points.

APPLY THE TAIL SECTION:

- ☐ Locate rudder and vertical stab, install hinges, test fit with fuselage. Do not glue vertical stab into fuselage at this time.



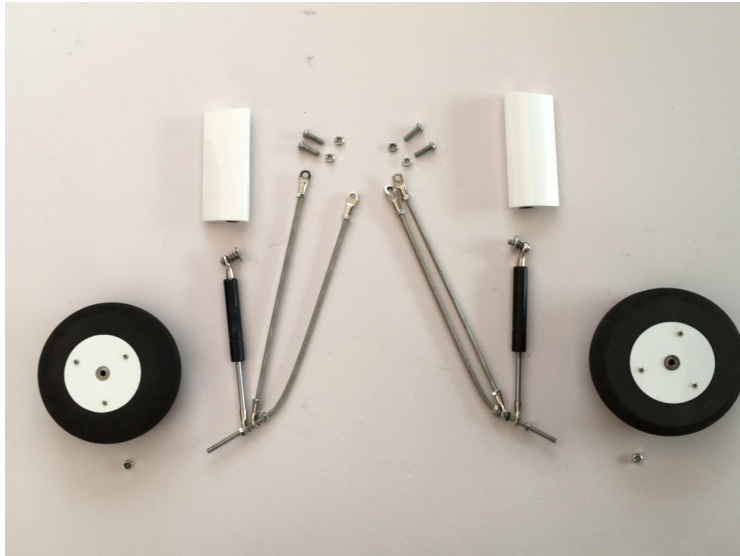
- ☐ Test fit rudder control horn and pull-pull cable, then glue the control horn in position. Put clevis on control horn side and turn buckle on servo side. Once the pull-pull system is installed, use turn buckles for adjustment.

- ☐ Test fit then install tail wheel T-bar linkage with rudder.
- ☐ Attach servo leads and lead them out of the horizontal stabilizer, use recommended servo safety clips to secure the connection. Install elevator servo to the servo hatch. Elevator servo extensions will go through vertical stab and into the fuselage.
- ☐ Test fit left and right piece of horizontal stabilizer with vertical stab. There is a T-shape horizontal stab supporter on each side, test fit before you screw them on. Do not glue them at this time. Test fit, then install elevator hinges.
- ☐ Test fit, then glue the black control horn. Use the push rod to link servo arm to the control horn. Plug in a servo tester to adjust push rod length for elevator neutral position.
- ☐ Double check all parts of tail section, make sure all parts fit, then glue them to the fuselage.
- ☐ Install tail gear and link to the rudder.
- ☐ Install rudder servo and control cable. Rudder pull-pull cable needs to be crossed inside of fuselage before connecting to the rudder servo arm. Use long servo arm for better control and adjustment range.

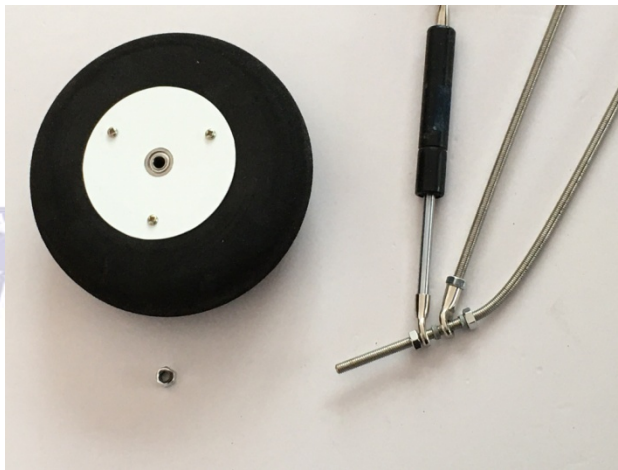


ASSEMBLE AND INSTALL THE LANDING GEAR:

- ☐ Test fit bottom wing shoulder pieces with bottom wing rod and fuselage, then glue shoulder pieces to each side of fuselage.
- ☐ Locate all landing gear parts and assemble as shown below.



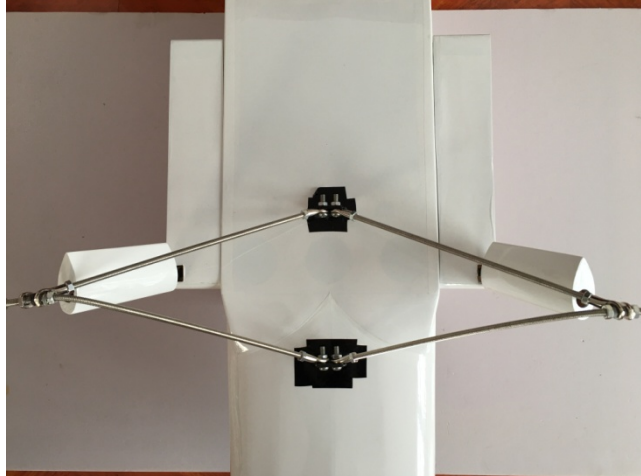
- ☐ Assemble lower part of landing gear left and right, test fit wheels with self-locking nuts. Slide the white covering piece down to cover the suspension cylinder.



- ☐ Mount the upper end of suspension rod onto the side of wing shoulder.



- ☐ Test fit, and then glue the landing gear mounting tabs into the bottom of fuselage. Test fit, then mount the whole landing gear assemble to the fuselage.



- ☐ Check your installation and test the suspension cylinder. When you are happy with everything, drip thin CA on the ends of each nut for extra security.

ASSEMBLE THE WINGS:

- ☐ Install the wing center section to the fuselage. This part will be permanently installed on fuselage, and will not need to be removed when taking off wings for transportation.
- ☐ Attach servo leads and guide them out of the wing panel, use servo safety clips to secure the connection. Install wing strut to support top and bottom wing panels. Use the optional Adjustable Biplane Wing Support when you assemble wing set. It also can be used for any biplane wing set transportation within the its adjustable range of 10 $\frac{3}{4}$ " ~16 $\frac{3}{4}$ ".



<http://www.maxfordusa.com/adjustablebiplanewingsupport.aspx>



- ☐ Install aileron and flap servos to the slots on the bottom of top wing. Use the tall

black horns for ailerons and flaps. The short black horns are non functional, and just for scale look. You may glue them to the bottom of top wing as shown below.



- ☐ Slide top and bottom wing rods in place, then test fit the left and right wing sets to the fuselage.

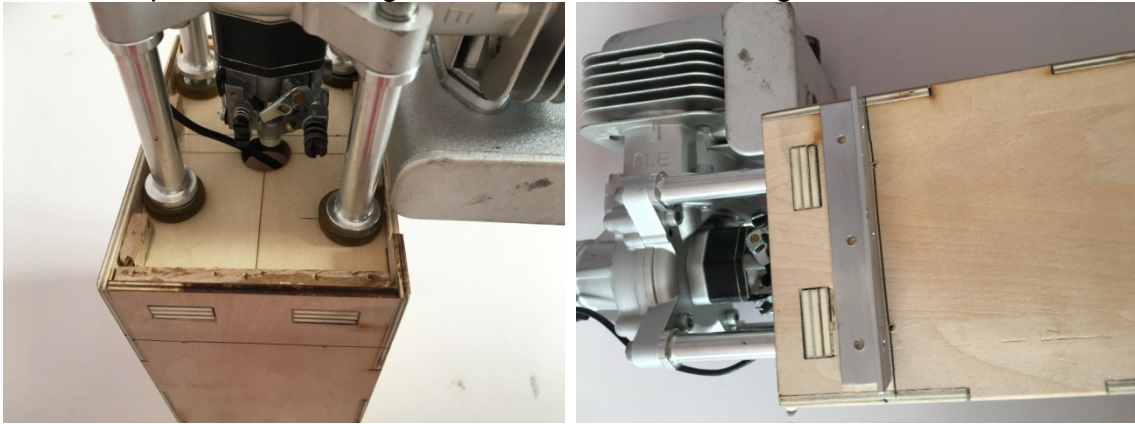


- ☐ Line up the wing locking tab with the slot on wing panel, use provided screws to lock top and bottom wings.

INSTALL THE POWER SYSTEM:

- ☐ Test fit then mount gas engine to the motor box, reference with your engine instruction manual for safety installation. Slide motor box into fuselage, then test fit with nose cowl. Mark the motor box position, then mount L mounts to secure the

motor box position. Do not glue motor box to the fuselage at this time.



- ☐ If necessary, trim the opening of dummy engine for engine hub and shaft.
- ☐ Tests fit, then install the cowl and verify that the prop clears the cowl by about 1/2 inch and that the prop shaft is near the center of the opening in the dummy engine. When you are happy with the fit, go ahead and glue the box into the fuselage.
- ☐ Test fit, and then glue the throttle servo tray to the proper position. Mount CDI Module and ignition battery pack safely. Test fit fuel tank and fuel line.

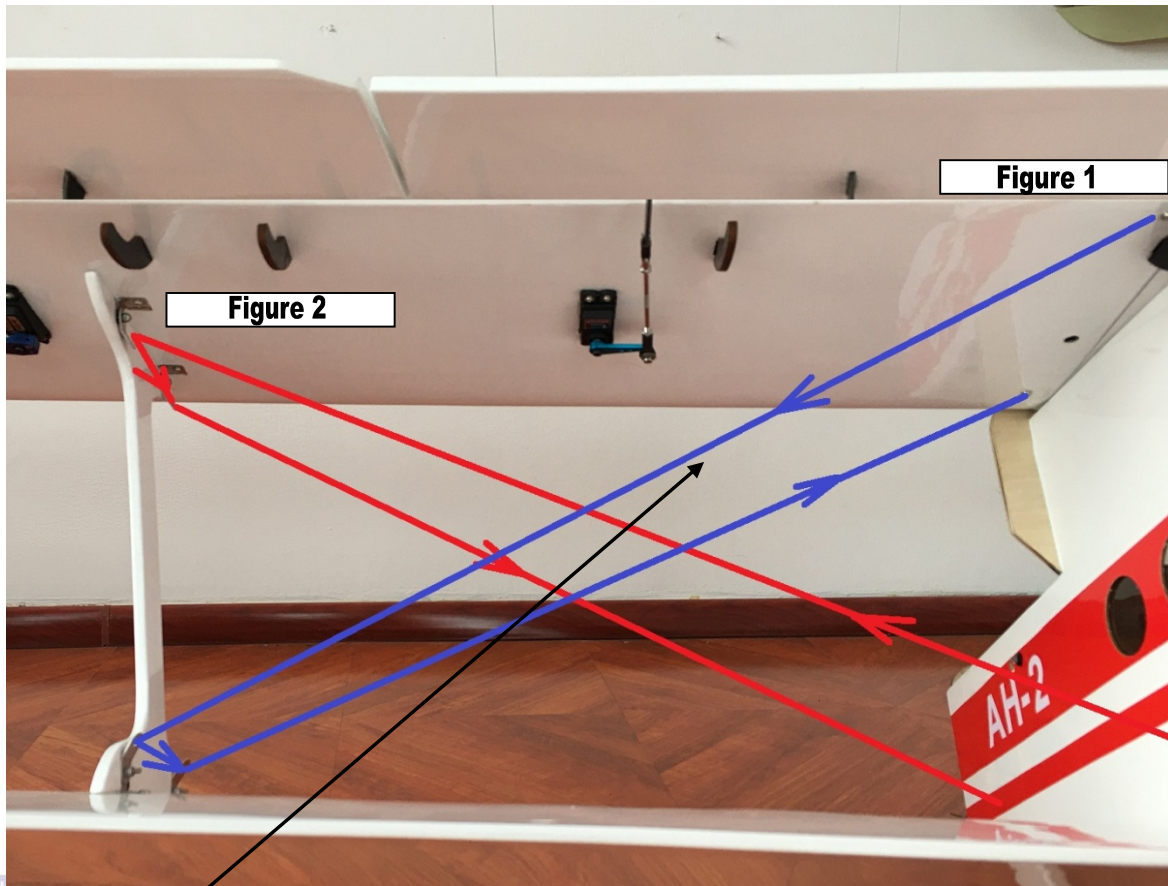


INSTALL AND TEST RECEIVER

- ☐ Plug all of the servos (and the ESC if setting up for electric) and receiver battery pack into your receiver. Safely mount them in the cockpit area.
- ☐ For this size of airplane, kill switches are highly recommended for safety purpose.
- ☐ Now is a good time to adjust rudder pull-pull cables and all control surface linkages.

INSTALLING THE FLYING WIRES:

- ☐ There are 2 cross cables on each side of the wing assembly. They are non functional for flying, but will provide extra safety for wing locking.



- ☐ Top side wing cables (shown in figure 1) will be mounted on the bottom of top wing panel.



- ☐ Bottom side cables (Shown in figure 2) will be mounted on the side of fuselage. Use turn buckles on fuselage side for easy disassembly.

SETUP AND ADJUSTMENTS:

- ☐ Adjust and test all of the control surfaces. Make sure all connections are safe and secure.
- ☐ Set the **initial control travels** as follows: (Measured at the widest point of the control surface.)

High Rate

Low Rate

Ailerons (with differential)	1" up	1/2" down	80%
Ailerons (without differential)	3/4" up	3/4" down	80%
Elevator	1" up	1" down	70%
Rudder	1 1/2" left and right		70%

If you use exponential, add 20% on the high rates.

Set the rudder-to-aileron mix at +15%.

Install the propeller and set the **Balance Point (C/G) at about 4.13 inches (105mm)** behind the leading edge, at the center of the upper wing, with the stabilizer level to the ground.

PRE-FLIGHT CHECKS

1. Make certain that all screws, clevises and other connections throughout the air frame are secure.
2. Double-check the control travel directions of the throttle, ailerons, elevator and rudder.
3. 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 safely fly.
4. Get into the habit of turning on your transmitter and moving the throttle to minimum before plugging in your battery, and operate your electric power system according to the manufacturer's instructions.



REMINDER: An important notice to our customers!

THIS PRODUCT IS NOT A TOY!

The quality and capabilities of your finished model airplane depend on how you build it.

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.

We thank you for choosing Maxford USA and we sincerely wish you many happy landings!

Design and Manufactured by:

Maxford USA RC Model Mfg, Inc.

Tel: 562-529-3988

Email: info@maxfordusa.com

***To order replacement parts and accessories visit our website at
www.maxfordusa.com***