


# Art Applewhite Rockets

from deep in the heart of Texas



## 18 mm *X-Fire*

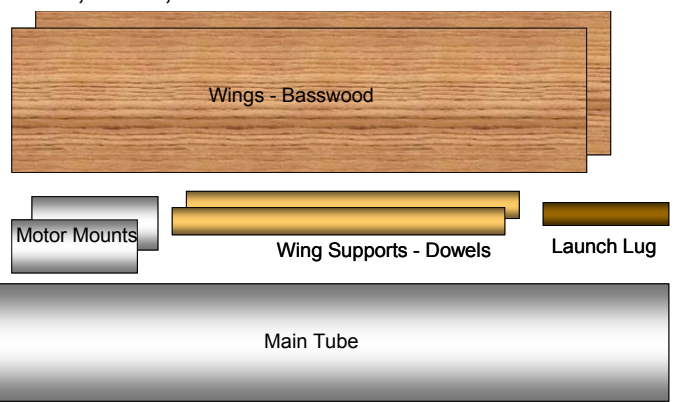


(pronounced cross fire)

Recommended motors: B4-2, B4-4, B6-0, B6-2, B6-4, C6-0, C6-3, C6-5

**Parts:**

- Wings – 3/32" Basswood sheet
- Wing Supports – 1/4" Dowels
- Main Tube – LOC 38 mm Motor Mount Tube
- Motor Mounts – BT-20
- 1/4" Launch Lug



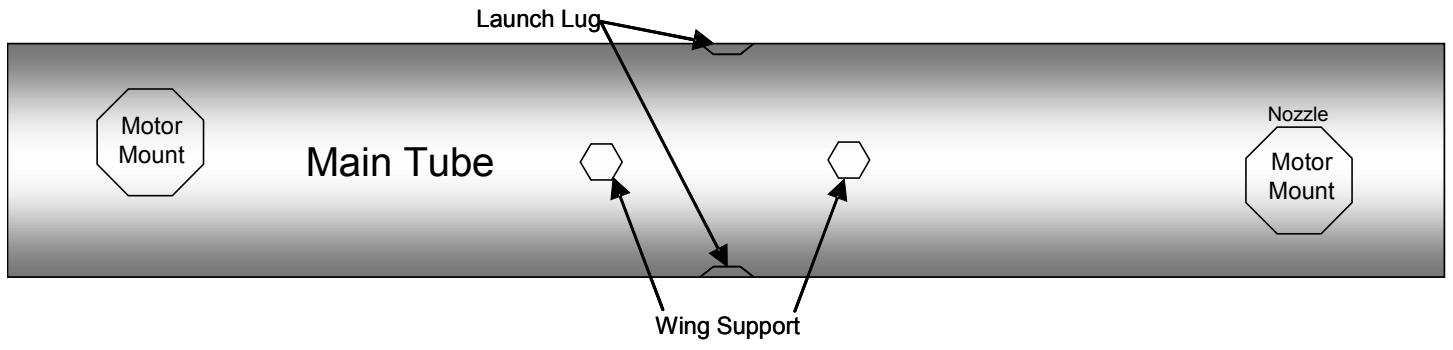
**Additional Materials and Tools:**  
 Elmer's Glue-All, #11 X-Acto® knife & ruler

**Construction Tips:**

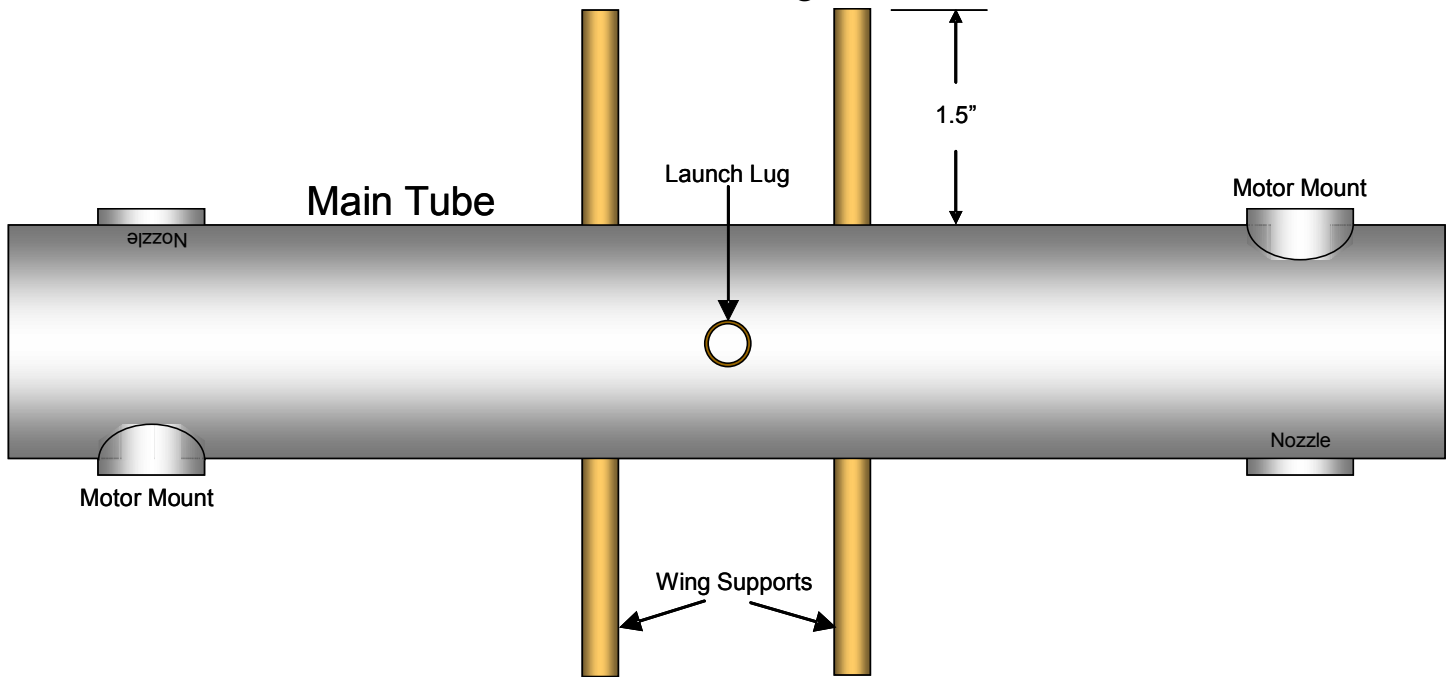
- Read **all** the instructions before starting construction.
- Test fit all parts before gluing them.
- **Elmer's Glue-All** is the only recommended glue for this kit.
- Allow the glue to dry before going to the next step.
- If you have any questions please contact Art Applewhite at [rocket877@aol.com](mailto:rocket877@aol.com)

**Construction:**

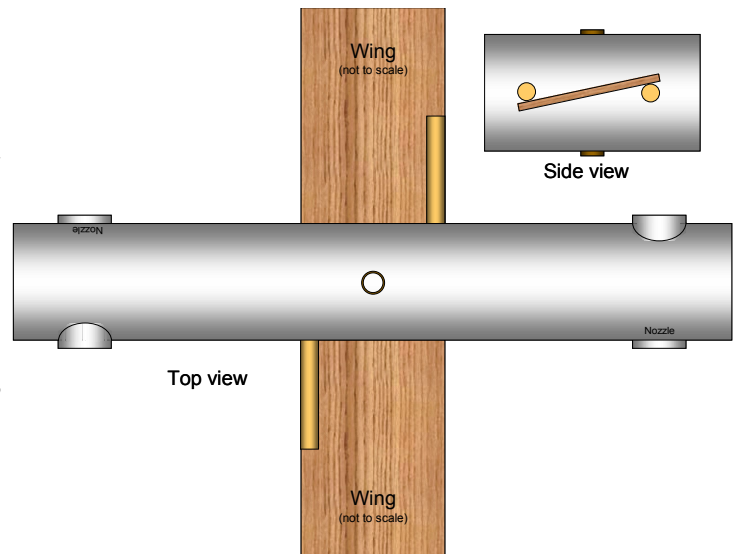
1. On the Main Tube, cut out the Motor Mount, Wing Support and Launch Lug holes using a X-Acto® knife with a **NEW** #11 blade. Cut directly on the printed lines. Work slowly and carefully. The holes are hexagon and octagon shaped (polygons) to make cutting and assembly easier. The best way to cut out the holes is hold the knife perpendicular to the Main Tube and push the tip into the side of the tube. Push the point slowly in until it cuts the length of one of the sides of a polygon. Then go to the next side of the polygon and repeat until all the sides are cut out. Repeat until all 10 holes are cut out.



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2. Test fit all the parts in their respective holes. Carefully enlarge the holes as needed, but all parts should fit snugly in place.
3. Mark both Wing Supports 1.5 inches from one end. Insert the Wing Supports into the Main Tube up to the mark. The supports should now be centered in the Main Tube. Apply glue around all four holes.
4. Insert and center the 1/4" Launch Lug in the Main Tube and glue.
5. Insert and center the Motor Mounts in the Main Tube. Note: It is easier to insert the Motor Mounts if you insert a spent 18mm motor into them first. Apply a fillet of glue on the inside of the Main Tube where it meets the the Motor Mounts.
6. Apply fillets of glue on the outside of the Main Tube at each place where it meets the Wing Supports, Launch Lug and Motor Mounts. Allow the glue to dry thoroughly.
7. Apply glue to the top and bottom of the respective Wing Supports so that the the Wing will be attach to them. Before the glue sets, make sure the Wings are sticking straight out from the Main Tube as viewed from the top, sides and end.
8. Run fillets of glue on the Main Tube where it and each Wing meet. Allow the glue to dry completely before painting.
9. It is recommended that you apply at least a light coat of clear paint the entire rocket to protect it moisture.



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Recommended Motors: Estes B4-2, B4-4, B6-0, B6-2, B6-4, C6-0, C6-3, C6-5  
Make sure both motors are the exact same type.

Note: The casings of the motors may burn through on the side at the nozzle end. This is normal and is a consequence of the rapid rotation of the rocket. Do not use Quest motors because they burn-through much worse than Estes motors. The Main Tube and the motor mounts may also be scorched. This is unavoidable but it will always happen in the same spot. It will not effect the safety of the flight of the rocket.



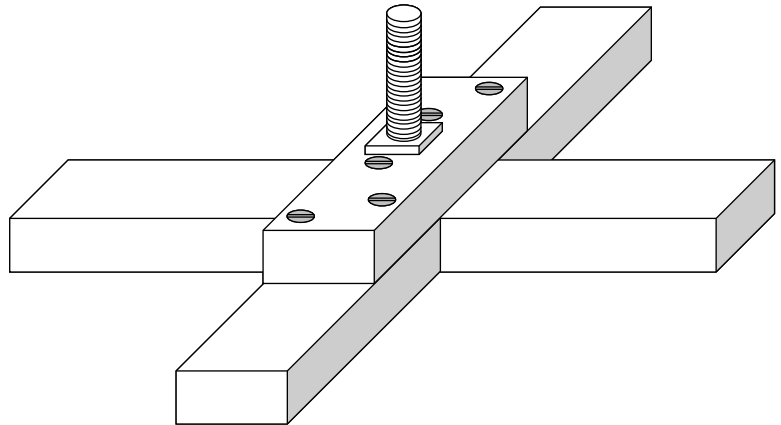
### Flight preparation:

- Tightly wrap three layers of masking tape 1/2" inch from the nozzle ends of the motors to form thrust rings.
- Insert the motors into the Motor Mounts with the nozzles tilting slightly downward. If the motors are too loose, wrap enough masking tape around them until they fit tight snugly. The motors should be centered in the motor mount with the forward end front sticking out of the front of the motor mount about 1/2".
- Install the igniters and attach the launch controller clips being careful to keep the wires out of the way of the, soon to be, rapidly rotating wings. A "whip clip" or two circuits from a high-current launch controller should be use to ensure simultaneous ignition of both motors.
- Launch the X-Fire from a 1.75" inch long, 1/4" diameter launch rod. Do not use a longer or narrower rod because it will cause the rocket to go in an unpredictable direction. **Never use a standard length (36" to 48") 1/4" launch rod.**

The launch pad should be sturdy and fixed firmly to the ground. A suitable launch pad can be constructed from the following materials:

- 4 - 2x4s, three, 18 inches long and one 36 inches long. The lengths need not be exact.
- 1 - 4 inch long, 1/4-20 carriage bolt and 3 nuts
- 6 - 3 inch long wood screws.

Drill a 1/4" hole in the middle of one of the short 2x4s. Insert the carriage bolt into the hole and secure it tightly with the nut. Attach the long 2x4, perpendicular to the short one with two wood screws. Attach the two remaining short 2x4s to the opposite ends of the first short 2x4 with two wood screws each. Thread the remain two nuts on the bolt and use them to adjust the height of the rocket.



The tip of the bolt should just appear above the main body of the rocket.

Limitation of Liability: Model rockets are not toys. Model rockets are functional rockets constructed of lightweight materials and launched using pre-manufactured, certified model rocket motors in accordance with the NAR Model Rocket Safety Code. Model rockets, if misused, can cause injury, property damage and even death. Art Applewhite Rockets certifies that it has exercised reasonable care in the design and manufacture of its products. Once sold, we cannot assume any liability for product storage, transportation or usage. Art Applewhite Rockets shall not be held responsible for any property damage or personal injury whatsoever arising from the handling, storage, use or misuse of our product. The buyer assumes all risks and liabilities there from and accepts and uses Art Applewhite Rockets products on these conditions.