

POLECAT AEROSPACE

4" JAYHAWK

AQM-37

The Jayhawk was designed in 1959 as an expendable target drone for the Army and Navy. The Jayhawk had an autopilot and a radio control system on different versions, and was air-launched from A4, A6, and F4 fighters. It has gone through many revisions and improvements over it's lifespan, and was still in limited use in the late 1990s.

This kit features:

- Through the wall fin mounting
- Laser cut fin slots
- Fiberglass molded nose cone
- Laser slotted nose cone
- Fiberglass molded boat tail
- Pre-fiberglassed airframe
- Standard rail guides included
- Laser cut Baltic Birch fins and centering rings
- 38mm motor mount
- Tubular nylon shock cord
- Shock cord mounting hardware
- Vinyl Decals

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List of Materials:

- | | | | |
|-----|---|-----|-----------------------------|
| (1) | Nosecone - slotted | (1) | Nose Bulkhead |
| (1) | Body tube - slotted | (2) | U-Bolts |
| (1) | 38mm motor tube | (2) | U-Bolt backing plates |
| (2) | Centering rings (4" x 38mm) | (8) | 1/4-20 nuts |
| (1) | Centering rings (4" x 38mm)
drilled for U-Bolt | (4) | 1/4" flat washers |
| (1) | Boat tail | (2) | Rail guides |
| (1) | Boat tail centering ring
(3" x 38mm) | (2) | 8-32 screws for rail guides |
| (2) | Main Fins | (1) | Shock cord |
| (2) | Wingtip Fins | (1) | Decal Set |
| (2) | Canard fins | | |

Construction

Please read and understand each step. The construction methods used in this kit differ from others in many ways. It is important to follow the instructions to ensure you get the most out of your kit.

Fin can / motor assembly

Locate the upper main centering ring and shock cord mounting hardware as shown. Mount the shock cord mounting hardware as follows:

Put two nuts then two washers on the U-bolt

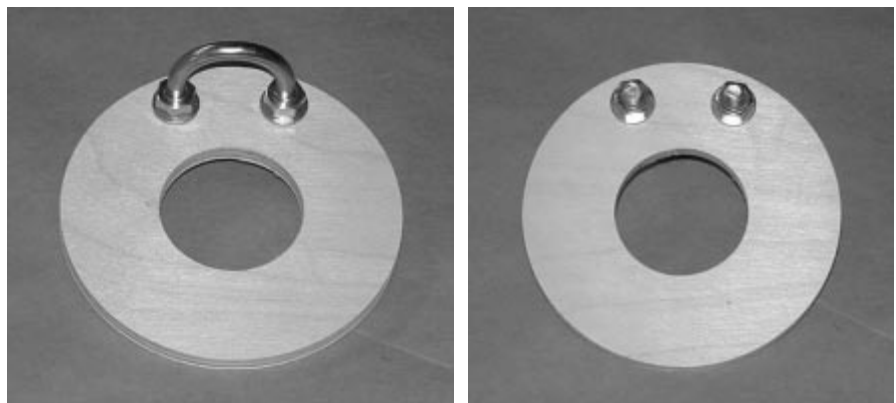
Put the U-bolt through the centering ring

Put the U-bolt backing plate on

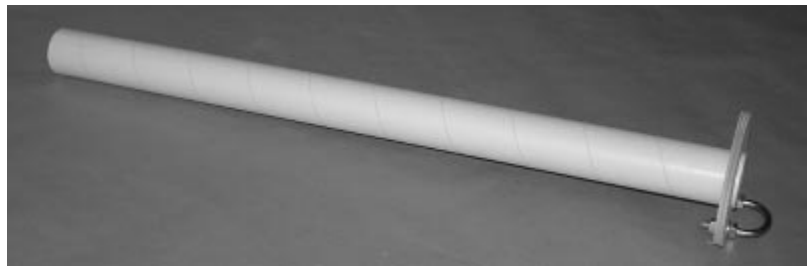
Put two nuts on

Tighten snugly with a 7/16 wrench

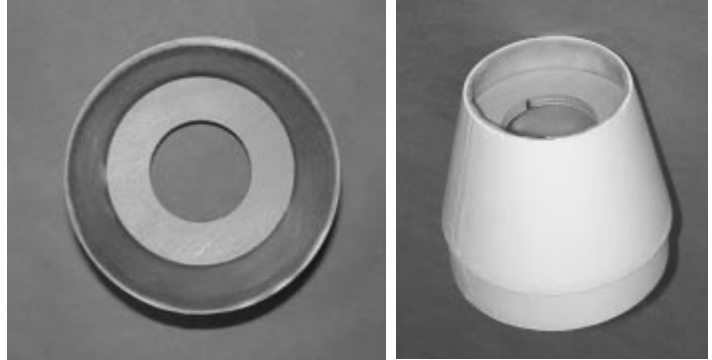
Secure the nuts with Epoxy or thread sealer to prevent the nuts from loosening



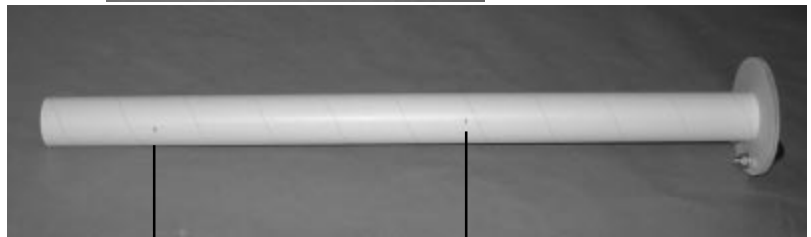
Position the upper centering ring (with the U-Bolt) 1/8" in from the end of the motor tube, with the U-Bolt facing as shown, epoxy the ring securely into place. Allow to cure.



Securely epoxy the boat tail centering ring into the fiberglass boat tail. Ensure the ring is parallel to the back end of the boat tail. Do not add a lot of extra Epoxy here, you need to keep the tail end of the rocket as light as possible. Allow to cure.



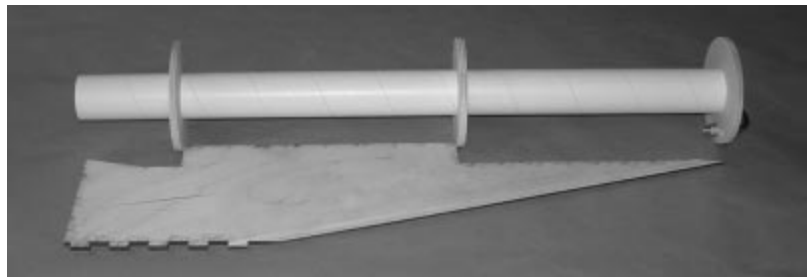
Mark the motor tube as shown. The two centering rings will be placed at these marks so that a fin tang can slide between them. Use a fin as a guide to make sure the tang will fit between. Take care not to get any Epoxy on the motor tube between these two rings as that will prevent a fin from seating all the way to the motor tube.



3 3/4" from end

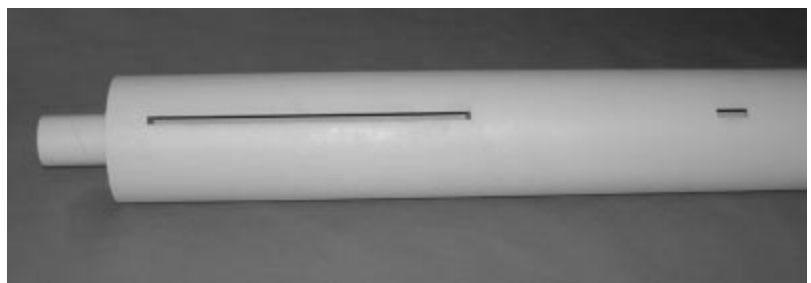
13 1/2" from end

Once satisfied with the ring position, allow them to cure completely. **DO NOT GLUE THE FIN TANGS IN AT THIS TIME.**



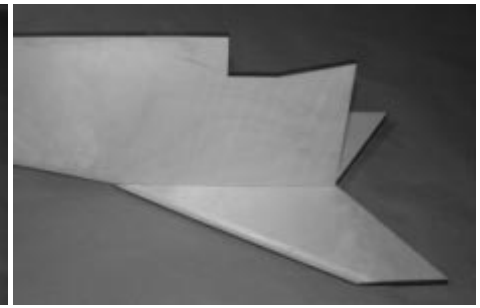
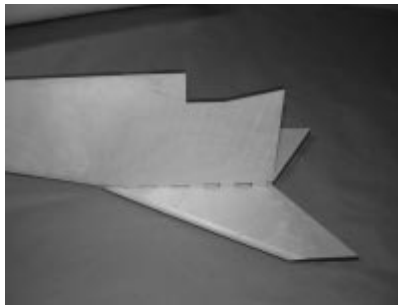
Epoxy the motor mount assembly into the body tube from the rear as shown. The centering rings should be located at the top and bottom of the fin slots. Take care not to block any of the fin slots.

Allow to cure completely.



Test fit the boat tail onto the body tube. To get a good epoxy joint, sand the boat tail shoulder and apply a liberal amount of epoxy. Slide the boat tail into position and wipe away the extra Epoxy. Allow to cure.

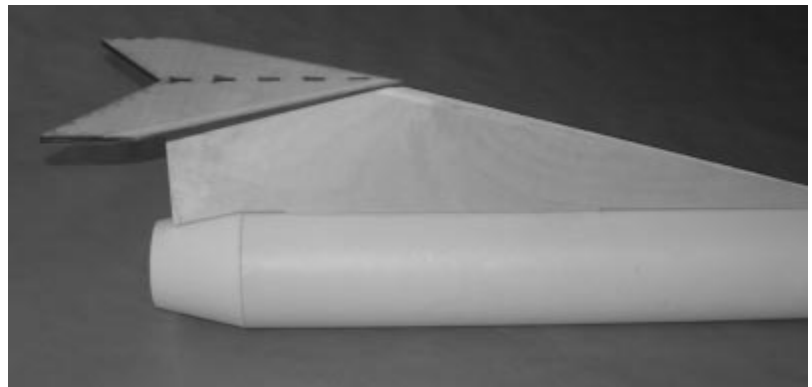
The main and outer fins are joined as shown. Very little Epoxy is needed at this joint, the machined fit is extremely tight. Apply a very small amount of epoxy to the fingers on the main fin and fit them into the slots on the outer fins. **DO NOT REINFORCE THIS JOINT WITH FIBERGLASS OR FILLETS.** The joint is stronger than the fin material



Slide the fin assembly into the main fin slots and seat the forward tab into the slot. This tab will not interfere with any recovery system.



Once you have a good fit, remove the fin assembly and apply a generous bead of epoxy to the fin root and along the sides of the fin where it joins the body tube. Make sure the fin is perpendicular to the airframe.

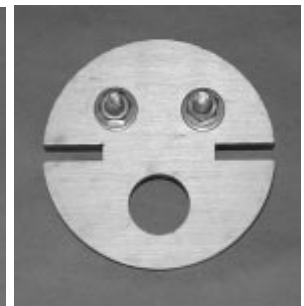


A note on fillets here. **DON'T.** Fillets are not only not needed, they add weight to the rocket at the wrong end. The fins are designed to pop lose in the event of a hard landing. They can be reinstalled without ruining the paint, unless you make the joint very strong, then the fin material will break and the rocket is ruined.



Make sure the fin is seated to the body tube. Repeat this for the other fin assembly, making sure the fins are parallel.

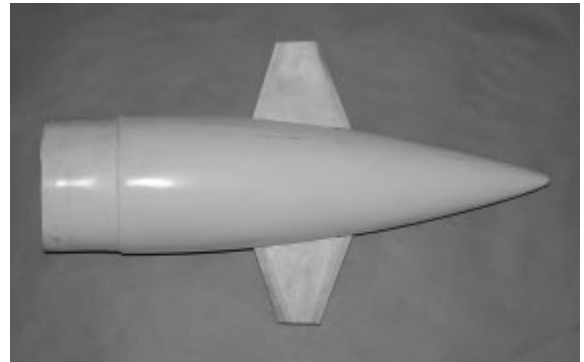
Mount the U-Bolt hardware to the nose cone bulkhead as shown. Tighten and secure the threads with thread lock or Epoxy.



Position the nose bulkhead into place and slide the canard fins onto the slots. Make sure the canard fins are the right way. Once you are happy with the fit, securely epoxy the assembly together. Make this joint secure. The hole in the nose bulkhead is for adding nose weight.



The canard fins will be straight if installed properly. Fillets are not needed for the canard fins. Once the epoxy has cured, securely tie the other end of the shock cord to the nose cone B-bolt.



Final assembly

Drill a 1/8" hole through the body tube into the lower and upper centering rings along a line on the airframe for the rail guides. The screws will make their own threads. Make sure the rail guides will spin freely on the screws after you install them, otherwise they can bind on the rail. Drill a 3/16" pressure hole in the airframe above the top centering ring. Attach the shock cords to the U-bolts and tie securely. Lock the knot with CA or Epoxy.

The balance point of the rocket is 28" back from the tip of the nose cone. You will need to add nose weight to your Jayhawk before flying it. **DO NOT ATTEMPT TO FLY THIS ROCKET WITHOUT PROPER BALANCE.**

We hope you enjoy your Jayhawk. Happy flying!

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