



4. Socket nose cone and payload section in place. . . must fit snugly. These parts should not be able to separate by their own weight. Apply tape to base for better fit if necessary.

Carefully prepare and check all parts of your rocket before each flight.

Launch the ATHENA from any standard model rocket launcher having a one piece 36" long steel launch rod.

Do not leave the rocket sitting in the sun for long periods as this may soften the adhesive.



Expended engine makes a handy launch rod cap.

Referring to the specific instructions which accompany the launchers and firing panels, mount the rocket on the launcher and prepare for ignition. Avoid eye injury by capping the exposed tip of the launch rod when not actually launching.

ENERJET

A SUBSIDIARY OF CENTURI ENGINEERING CO.

ATHENA

Catalog No. KE-5

MODEL ROCKETEER'S SAFETY CODE

CONSTRUCTION

My model rockets will be made of only lightweight materials such as paper, wood, plastic, and thin metallic foils, with the exception of payloads and engine holders made of wirelike material.

ENGINES

I will use only pre-loaded factory made model rocket engines in the manner recommended by the manufacturer. I will not change in any way nor attempt to reload these engines.

RECOVERY

I will always use a recovery system in my model rockets that will return them safely to the ground so that they may be flown again.

WEIGHT LIMITS

My model rocket will weigh no more than 453 grams (16 oz.) at liftoff, and the engines will contain no more than 113 (4 oz.) of propellant, as prescribed by Federal Regulations.

STABILITY

I will check the stability of my model rockets before their first flight except when launching models of already proven stability.

LAUNCHING SYSTEM

The system I use to launch my rockets will be remotely controlled and electrically operated, and will contain a switch that will return to "off" when released. I will remain at least 10 feet away from any rocket that is being launched.

LAUNCH SAFETY

I will not let anyone approach a model rocket on a launcher until I have made sure that either the safety interlock key has been removed or the battery has been disconnected from my launcher.

LAUNCH AREA

My model rockets will always be launched from a cleared area, free of any easy-to-burn materials, and I will only use non-flammable recovery wadding in my rockets.

BLAST DEFLECTOR

My launcher will have a blast deflector device to prevent the engine exhaust from hitting the ground directly.

LAUNCH ROD

To prevent accidental eye injury I will always place the launcher so the end of the rod is above eye level or cap the end of the rod with my hand when approaching it. I will never place my head or body over the launching rod. When my launcher is not in use I will always store it so that the launch rod is not in an upright position.

POWER LINES

I will never attempt to recover my rocket from a power line or other dangerous places.

LAUNCH TARGETS AND ANGLE

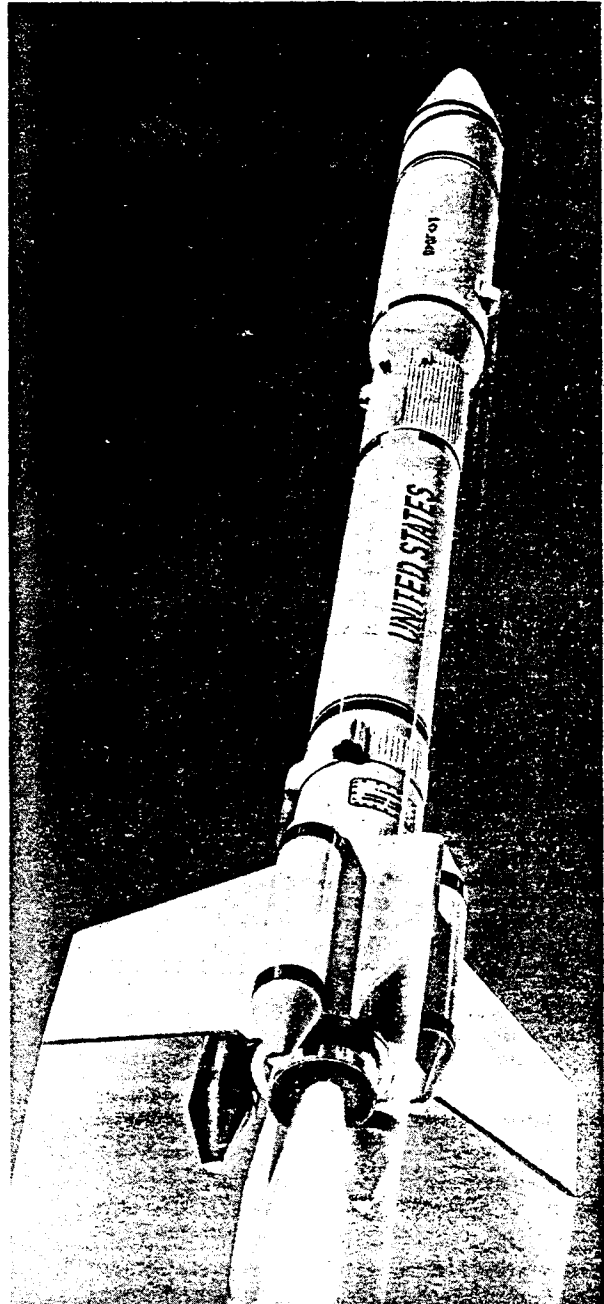
I will not launch rockets so their flight path will carry them against targets on the ground, and will never use an explosive warhead nor a payload that is intended to be flammable. My launching device will always be pointed within 30 degrees of vertical.

PRE-LAUNCH TEST

When conducting research activities with unproven designs or methods, I will, when possible, determine their reliability through pre-launch tests. I will conduct launchings of unproven designs in complete isolation from persons not participating in the actual launching.

FLYING CONDITIONS

I will not launch my model rocket in high winds, near buildings, power lines, tall trees, low flying aircraft or under any conditions which might be dangerous to people or property.



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ATHENA

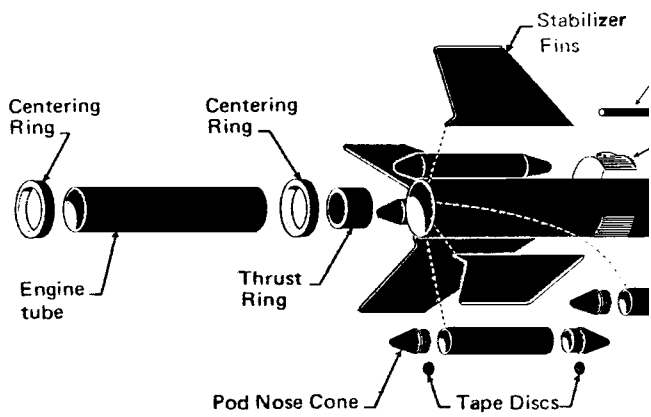
Length	33.5"
Body Diameter	2.0"
Net Weight	6.5 oz.
Capsule Volume	31.4 cu. in.

Recommended Engines E24-7 F52-8 F67-9

INTRODUCTION

The ATHENA is a "top of the line" sport rocket, ideally suited for demonstration flights with its large size and realistic detailing. But this is more than just a "good-time bird"... The large payload compartment makes the ATHENA very useful as a payload loft. Attention to detail and construction will produce a truly handsome aerospace vehicle.

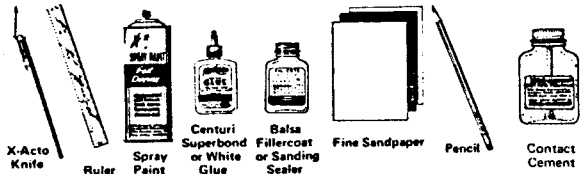
Enerjet engines produce considerably more stress on the vehicle than regular A-B-C series engines. For the most satisfaction, please be especially careful in assembling and flying your model.



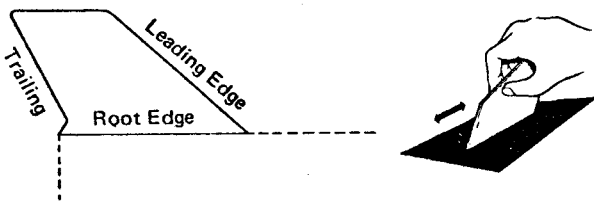
ASSEMBLY INSTRUCTIONS

READ BEFORE STARTING ASSEMBLY:

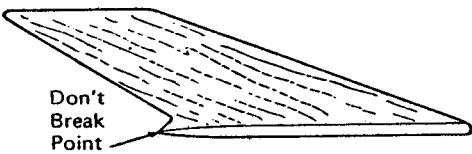
TOOLS: In addition to the parts supplied you will need the following standard model rocket tools to assemble and finish this kit. **DO NOT** use model airplane glue for building flying model rockets.



1 Carefully push the die-cut parts from their sheet. Start at one point on the fin and work gently around, use a knife if necessary, to avoid ragged edges. Square up edges by running over fine sandpaper.

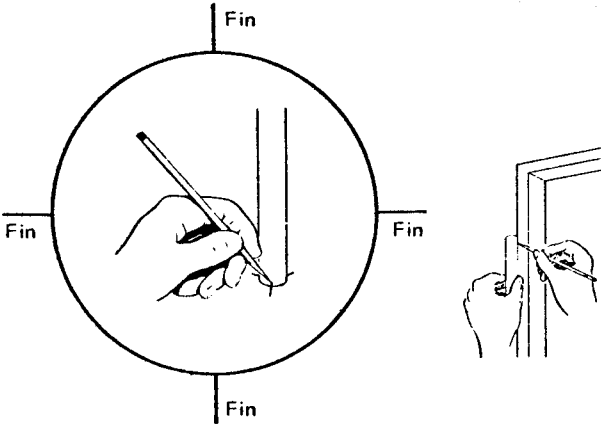


2 Round the leading edges and taper the trailing edges for better performance. Be careful not to break off the swept-back tip at the root edge.

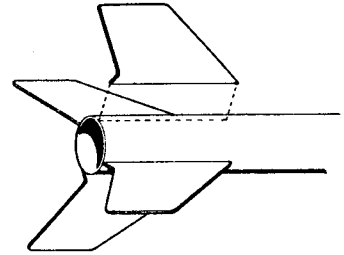


3 Stand lower body tube on its fin guide and mark each fin position and launch lug position on the tube.

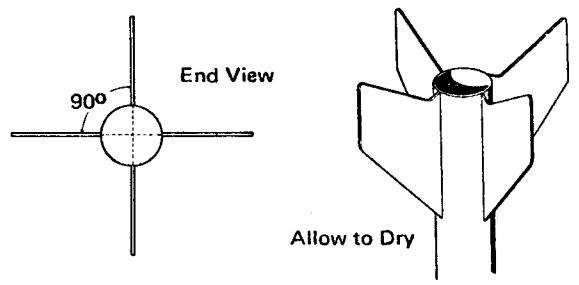
Find a convenient groove or channel with straight sides, such as a door jamb or partially open drawer. Extend the marks into straight guide lines the entire length of the tube.



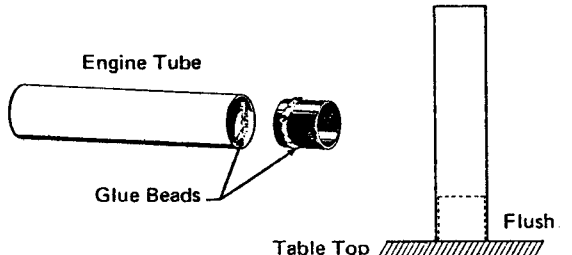
4 One at a time, apply glue to the root edges of the fins. Press in place on the drawn lines. Remove the fin. Repeat with remaining fins. Apply fresh glue to each fin and re-position on the body.



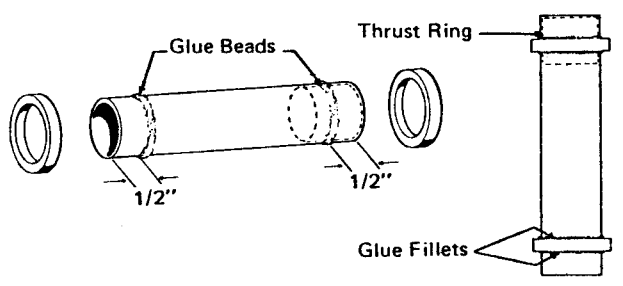
5 Check fin alignment visually by sighting along tube. Imaginary centerlines of fins should all converge at center of body tube. Stand assembly upright to dry, but avoid glue sags.

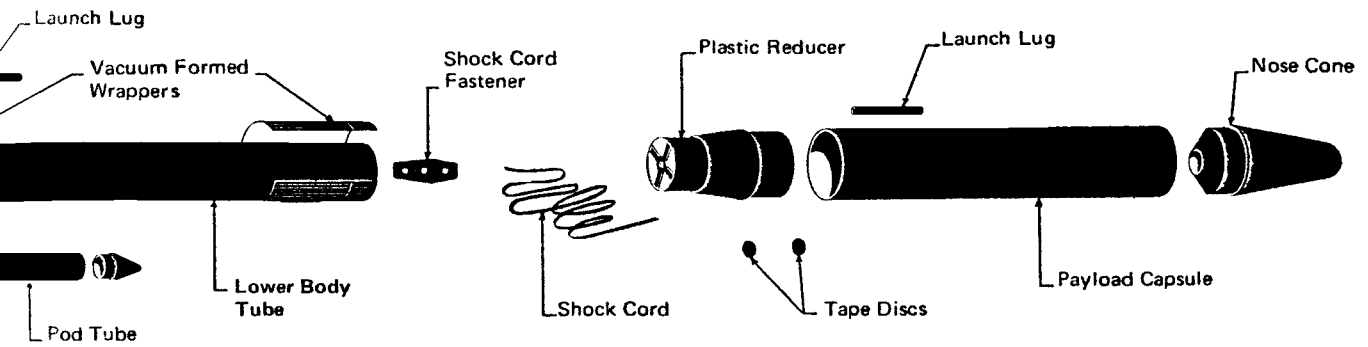


6 Apply a bead of glue inside one end of engine tube and around outside of thrust ring. Push thrust ring into place until flush with end of engine tube. Wipe away excess glue in engine tube.

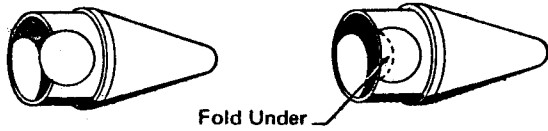


7 Run beads of glue around the engine tube and slide the centering rings in place as shown. Apply a bead of glue around both sides of each centering ring, smooth into a neat fillet with your finger. Set aside to dry, standing assembly upright.

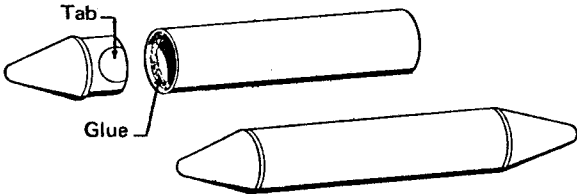




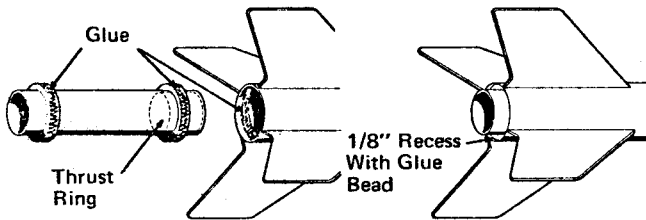
8 (NOTE: This step may be saved until after painting in case you would like the pod cones to be a different color from the pod tube.) Apply a pressure-sensitive disc firmly onto the base of each pod nose cone. Fold the excess part of disc up into cone. This technique allows you to glue plastic with ordinary model rocket glue.



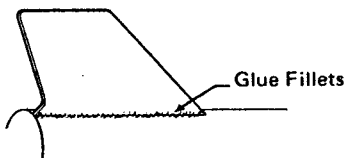
9 Apply glue inside tube and insert cone with a firm, even twisting motion. Repeat with remaining tubes and cones.



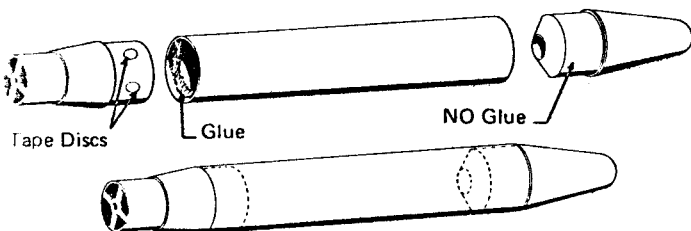
10 Run generous beads of glue around the inside rear end of body assembly, and around the outside rim of centering rings. Insert engine mount with firm, even, turning motion until rear centering ring is recessed about 1/8". Apply a glue fillet around recess. Allow to dry standing upright for a few minutes before proceeding.



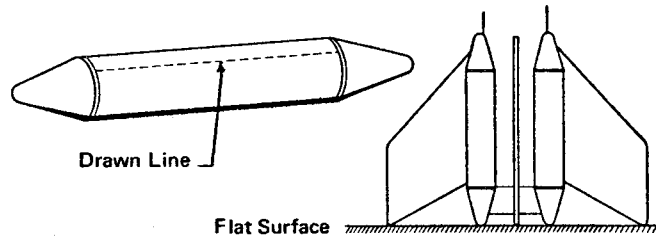
11 The fin-to-body tube joints must be reinforced to withstand the engine thrusting. Run a thin bead of glue along each joint and smooth into neat fillets with your finger. Check fin alignment again. . . don't let the glue sag and run.



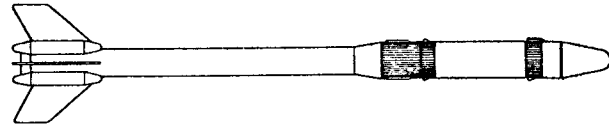
12 Apply the remaining tape discs around the larger base of the plastic reducer. Glue the reducer into the payload tube. Socket nose cone in place.



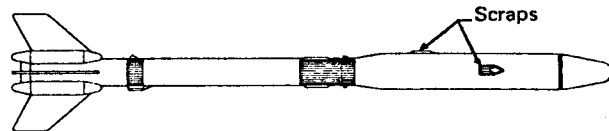
13 Draw a straight guide line along each of the four pods, using the door jamb technique. Apply a glue bead along line and position pods on rocket. Center each pod between fins as rocket stands upright. NOTE: Lower cones on pods protrude down with fins, to help absorb landing impact.



14 The vacuum formed wrappers supplied with the Athena are long enough to apply around the payload section:



Or you may trim them for applying around the lower body section. The "scrap" pieces may then be applied elsewhere for interesting detail.



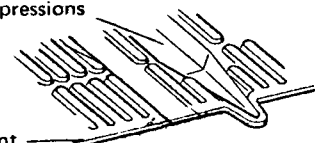
15 Please read these tips before attempting to cement the body wrappers on.

Contact cement is a commonly available glue that will permanently bond the plastic wrappers to the body tubes. If used incorrectly, it can damage the plastic parts! Study these tips before gluing on the wrappers as explained in the next step!

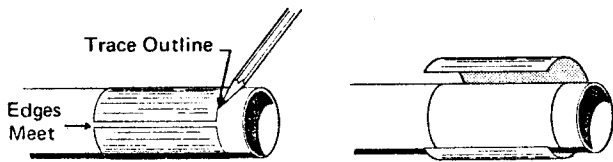
- Be sure you have the wrapper turned face down before applying cement.
- Brush cement on evenly over the back of the wrappers, making sure you have cement along all edges.
- Do not brush cement into the detail depressions of the wrappers.
- Apply cement to the body tubes exactly in the areas to which the wrappers are applied.
- Allow the cement to dry completely before attaching the wrappers.
- Position the wrappers exactly before allowing them to touch the body tubes.
- Work from left to right, smoothing the wrappers onto the tubes with a firm, even pressure.

Do not get cement into detail depressions

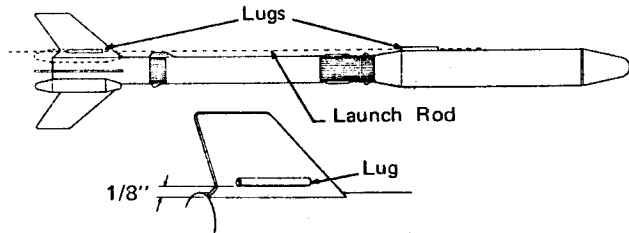
Contact Cement



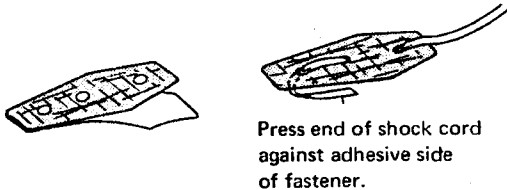
16 Wrap the piece around the tube in the preferred location. Line up the two edges neatly where they meet. Trace the wrapper by running a pencil around it. Apply cement to this marked area and the backside of wrapper, following the tips in previous step. Apply wrappers neatly and firmly.



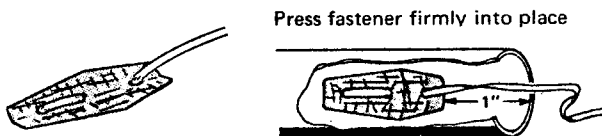
17 Gluing on the launch lugs requires special attention. Refer to drawing below to see how one lug is on payload section while the other lug is positioned 1/8" out on a fin. One of the easiest techniques is to run a launch rod thru the lugs to determine accurate alignment.



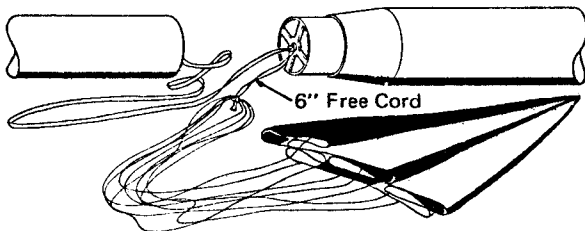
18 Peel the backing from the fastener. Thread one end of the elastic shock cord through the fastener as shown. Take care not to touch the adhesive backing any more than absolutely necessary. Slightly crease the fastener lengthwise to allow easy insertion into tube.



19 Insert the fastener 2" into the top of the lower tube. Press firmly against the inside wall of the tube with a finger or eraser end of a pencil. NOTE: All edges of the fastener must be firmly contacted to the tube to insure a permanent bond.

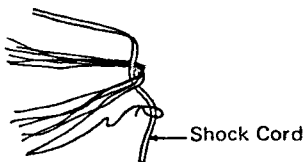


20 Tie the other end of shock cord thru the eyelet molded in the reducer, leaving about 6" of the cord hanging free. Tie free end of shock cord thru neatly gathered chute shroud lines.

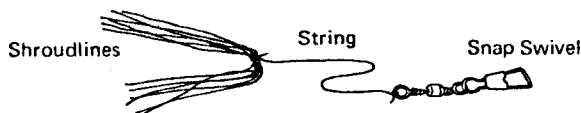


21 Here are a few parachute tips:

A. If your chute has one single-strand shroud line (in addition to the looped ones), simply tie a small loop in the end of the line and pass the shock cord thru it.



B. You may wish to incorporate a snap swivel on the shroud lines, to facilitate changing chutes quickly.



22 Balsa wood fins may be sealed when glue joints are dry. Your model will look and perform better if the wood grain is eliminated before painting. Apply fillercoat or sanding sealer, allow to dry, and sand with fine sandpaper. Repeat until wood surface is smooth.



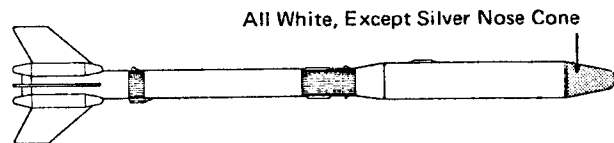
1st coat of fillercoat
2nd coat of fillercoat
After sanding
3rd coat of fillercoat
After final sanding

23 When painting plastic parts, never use dope or lacquer! First spray with a primer suitable for plastic. The plastic parts may then be spray painted in-place on the model with the same spray paint used on the rest of the model. Or the parts may be masked off or removed for painting a separate color.

Spray painting your finished model with a fast-drying enamel will produce the best results . . . IF IT IS DONE PROPERLY!!! Most important is the number of coats of paint. DO NOT try to paint your model with one heavy coat! Instead, give it a couple of quick, light coats first and then a finish coat. Let each coat dry before applying the next.

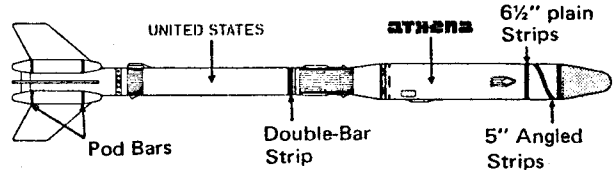
Avoid painting the engine mount tube. Many paint schemes are effective. Be sure to choose colors that the decals will show up against.

SUGGESTED COLOR SCHEME:



24 When the paint has dried, apply the decals, one at a time, according to instructions printed on the decal backing paper. Try to arrange decals so they don't conflict with the vac-formed wrappers.

SUGGESTED DECAL TREATMENT:



"FLIGHT PREPARATIONS"

When all glue joints, paint and decals are dry, the Athena is ready to be prepped.

Igniters and complete engine installation instructions are included in "Engine Operating Instructions" which accompany all Enerjet engines.

The Athena can carry payloads of 3 to 5 ounces with only moderate penalties in performance. The engines recommended below may be used whether a payload is flown or not.

Recommended Engines	Approximate Altitude Feet	Purpose
E24-7	1600	first test flights, medium size launch area
F52-8	1900	general flying, large launch area
F67-9	2400	maximum altitude, extremely large launch area.

FLIGHT PREPPING:

1. Inspect shock cord fastener for firm bond.
2. Tuck in shock cord.
3. Fold chute neatly, as shown, and insert.

