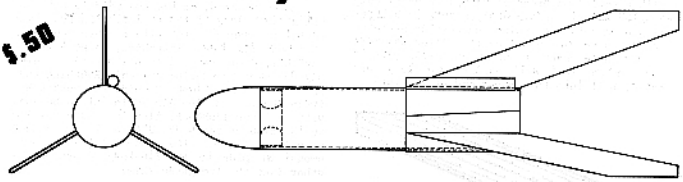
Astron Streak

Assembly Instructions



The Astron Streak is a very high performance model rocket designed especially for competition purposes. This model employs a featherweight recovery system in which the rocket expells its engine at peak altitude, and returns safely because of its extremely low weight to area ratio. The rocket has been especially designed to incorporate the latest performance features: A super-light, yet high strength mylar tube is used for the body, the fins incorporate a special low drag high stability design, and the nose cone is shaped especially for performance at subsonic speeds.

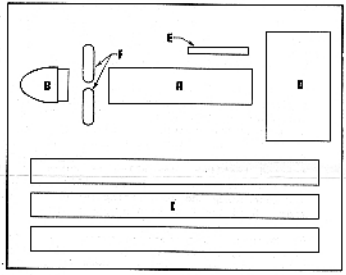
The Streak enjoys few parts, and is much less prone to misfunctioning than other non-featherweight designs. These instructions have been written to allow the builder several alternatives in the final design of the rocket. If the rocket is to be used for competition, the builder will want to use the special competition features. However, if the rocket is to be used for sport flying, the builder can use the sport features, and sacrifice very little in performance.

The Astron Streak kit consists of the following parts as illustrated in the picture at right:

A) One 3" length of mylar body tube BT-10
B) One balsa nose cone BNC-10A
C) Three pieces balsa fin stock BFS-20B
D) One sheet of reinforcing material PSM-1
E) One launching lug LL-1A
F) Two tape strips TD-2

In addition to these parts, you will also need some glue, a modeling knife or single edge razor blade, sandpaper, sanding sealer, and paint or dope.

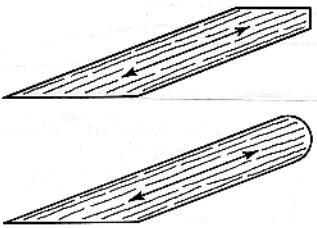
1) The mylar body tube used in the Streak can not be glued directly to other objects, as the glue will not stick to it. It is necessary to first prepare the tube for gluing. Cut a 1 3/8" by 2 1/8" piece of paper reinforcing material. Carefully strip the protective backing from the adhesive side and apply the strip to the outside of the tube at one end. Be sure that the adhesive goes on straight, and that the edge of the paper is flush against the end of the tube. Once the adhesive has been set in place, press it tightly against the tube surface. Do not attempt to remove it after it has been applied. This end will be the rear of the rocket, and the fins will be attached to the paper reinforcing material.



2) Remove one of the paper strips from its backing sheet and apply it on the inside of the body tube at the opposite end from the large adhesive piece. The long edge of the strip should be even with the end of the tube. Apply the other strip at the same end of the tube, on the inside, and directly across from the first. When these strips are in place, they will match the surface on the nose cone which fits inside the tube.

3) If the rocket is to be used for sport flying, the nose cone may be glued in place as it

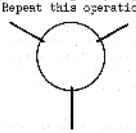
is. If the rocket is to be used for competition, the nose cone may be hollowed out to reduce the weight of the rocket even further. Use a small gouge blade to remove bits of balsa from the inside of the cone, then smooth it out with a rolled up piece of sandpaper until only a 3/16" wall is left. Apply a very thin layer of glue to both the inside and outside surfaces of the cone to reinforce it. After the work on the nose cone is complete, apply glue to the surface that will contact the body tube and slip it into the proper end of the tube.



4) Select the fin pattern which you prefer and trace it onto the balsa fin stock. The fin with the rounded tip is slightly superior aerodynamically, while the fin with the square tip is generally preferable for appearance. Cut out three fins of the design you will use.

5) If your Streak is to be used for sport flying, sand the leading and trailing edges of the fins to round them off. If the Streak is to be used for competition, carefully sand the fins to the airfoil shown in the cross section drawing below. The rounded leading edge and tapered trailing edge allow an extra smooth flow of air over the fins, cutting the drag and increasing the stabilizing tendency of the fins. Sand the fins to a smooth finish.

6) Mark the body tube to position the fins. To do this, center the body tube in the circle below and mark it at the three lines. Then apply a small amount of glue to the inside end of a fin and position it on the body just to the right of one of the marks. Align the fin so that it is straight by sighting along the body tube. Repeat this operation for the other two fins. Do not set the rocket on the fins until the glue is fairly dry.



7) If the Streak is to be used in competition, and the club has a tower launcher, no launching lug need be used, as the lug adds to both the weight and drag of the rocket. (Do not write to Estes Industries for either tower launchers or plans for tower launchers, as neither are currently available. A substitute for a tower may be made by spacing several launching rods on a wood base block to guide the rocket between them.) If the Streak is not to be used with a tower launcher, glue the launching lug to the base of the body tube in the corner between a fin and the tube. Apply a small amount of glue to the fin-body joints on the other fins to strengthen them.

8) Finish the Astron Streak by applying sanding sealer to all balsa surfaces, then sand with extra fine sandpaper. Repeat this operation until the surface is mirror smooth. Next apply a very thin coat of white enamel paint, allow to dry, and follow with a thin coat of a very bright paint, such as fluorescent orange or cerise. Insignia white and international orange butyrate dope will also work well. The color the rocket is painted must be bright, however, since the rocket is very small and will be quite difficult to see at any distance.

Flying the Astron Streak

The engines recommended for the Astron Streak are the 1/2A.8-2, 1/2A.8-4, 1/4A.8-2, and 1/4A.8-4. The rocket will fly well with larger engines, but the chances are that it may never be seen again. 1/4A engines are especially recommended for the first flights of this rocket, and will lift it to altitudes near 500'.

Launch the Astron Streak using an approved, electrically operated model rocket firing system. Consult our catalog, design booklet, or the store where you purchased your rocket for further details.

Use caution when flying rockets. Do not launch in high winds, near flying aircraft, or around persons not participating in or watching the rocket launching. Inspect the rocket carefully after each flight to make sure it has not been damaged and is in satisfactory condition for the next flight.

Estes Industries, Inc.

BOX 227 — PENROSE, COLORADO