

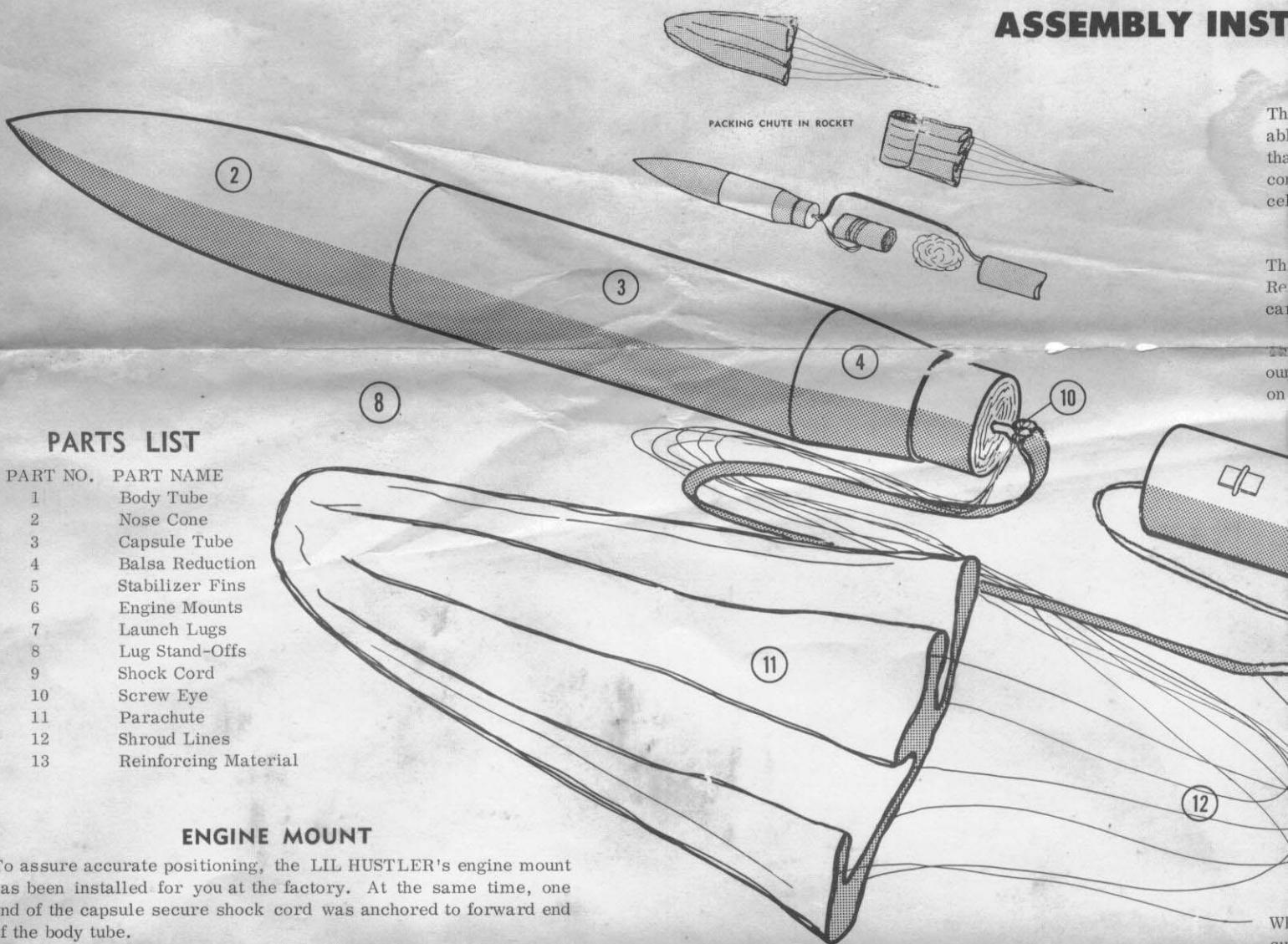
## INTRODUCTION

A real Payload Carrier!! The LIL HUSTLER is a 3/4 scale version of its big brother the "HUSTLER". Designed for its higher altitude capability, the LIL HUSTLER will carry up to 6 ounces of payload to well above 1,000 feet and return it safely by parachute to be flown again. Its 10 cubic inch payload compartment will handle payloads measuring up to 1-3/4" in diameter x 4 1/4" in length.

# LIL HUSTLER

## PAYLOAD CARRIER

## ASSEMBLY INSTRUCTIONS



### PARTS LIST

PART NO.	PART NAME
1	Body Tube
2	Nose Cone
3	Capsule Tube
4	Balsa Reduction
5	Stabilizer Fins
6	Engine Mounts
7	Launch Lugs
8	Lug Stand-Offs
9	Shock Cord
10	Screw Eye
11	Parachute
12	Shroud Lines
13	Reinforcing Material

### ENGINE MOUNT

To assure accurate positioning, the LIL HUSTLER's engine mount has been installed for you at the factory. At the same time, one end of the capsule secure shock cord was anchored to forward end of the body tube.

### ATTACH STABILIZER FINS

The LIL HUSTLER's composite fin design is made up of two balsa parts (A & B). From the printed balsa sheet, carefully cut out all indicated parts. Glue part A to Part B as shown in the illustration above.

When the glue joint has thoroughly dried, sand each fin as shown above. Round the leading and tip edges, taper the trailing edge, and square the root chord edge.

Cut out the enclosed Fin Positioning Guide, wrap it around the body tube near the aft end, and mark the fin locations with a pen or pencil.

Apply white glue or model cement to each fin root chord edge, one at a time, and also along the body tube where fin is to be attached. When glue has just begun to set, place fin in position along the tube. Stand the tube on its top end and allow glue to dry. With the Fin Alignment Guide, check the angle between fins before glue has completely set.

During lift-off and the subsequent accelerating period, the fins are subjected to tremendous drag pressure and buffeting. To prevent the fins from shearing off, it is necessary to reinforce them in the following manner: When the glue joint has thoroughly dried, cut out four pieces of reinforcing material about 3 1/2" square. Brush white glue or clear modeling dope onto the fin root chord and connecting body areas. Lay a piece of reinforcing material over each glued area and smooth onto the body-fin surface. Trim off any excess material and set aside to dry. After material has completely dried, sand lightly to smooth rough spots.

### ATTACH SHOCK CORD TO CAPSULE

Centuri's unique capsule shock cord has been attached at one end to the body tube. It is only necessary to attach the opposite end to the capsule.

Thread the screw eye into the capsule base as shown. Unscrew the eye, squirt glue into the resulting hole, and thread the eye back into place. This glueing will keep the eye from pulling out during recovery.

# LIL HUSTLER

## TRIER ROCKET

### INSTRUCTIONS

#### ASSEMBLE PAYLOAD CAPSULE

The payload capsule has been pre-assembled for you. It is advisable however, to glue the reduction fitting to the capsule tube so that the capsule does not open during recovery. Likewise, the nose cone should be made to fit tightly by wrapping a layer or two of cellophane tape around its base until a friction tight fit is obtained.

#### PREPARING THE PAYLOAD

The LIL HUSTLER is capable of carrying up to 6 ounces of payload. Remember, the heavier the payload, the less altitude possible. Be careful not to overload the capsule.

The LIL HUSTLER was designed to fly carrying a minimum of 2 ounces of payload. Always include the minimum 2 ounce payload on every flight.

#### RIG PARACHUTE

Just prior to launching, fold and pack the parachute as shown here. Wrap the shrouds tightly around the rolled-up chute. Insert a piece of flameproofed cotton or fiberglass wadding, about the size of a large egg, into the body tube first. Next, insert the shock cord followed by the rolled-up chute and the capsule.

Pack the chute temporarily into place, push the capsule into place, and the LIL HUSTLER is ready for finishing.

#### FINISHING THE LIL' HUSTLER

To obtain maximum altitude flights, and to achieve an attractive finish for display, the nose cone, reduction fitting, and fins should be sealed first with several coats of Balsa Fillercoat or Sanding Sealer. Sand smooth between applications. The body tube does not require any sealing treatment. Finish the entire model with a lightweight paint such as spray dope or laquerized enamel such as "Krylon". To aid in tracking, use bright colors such as white, yellow, orange, or red. Flourescent colors are quite easy to spot and track at high altitudes.

#### LAUNCHING THE LIL' HUSTLER

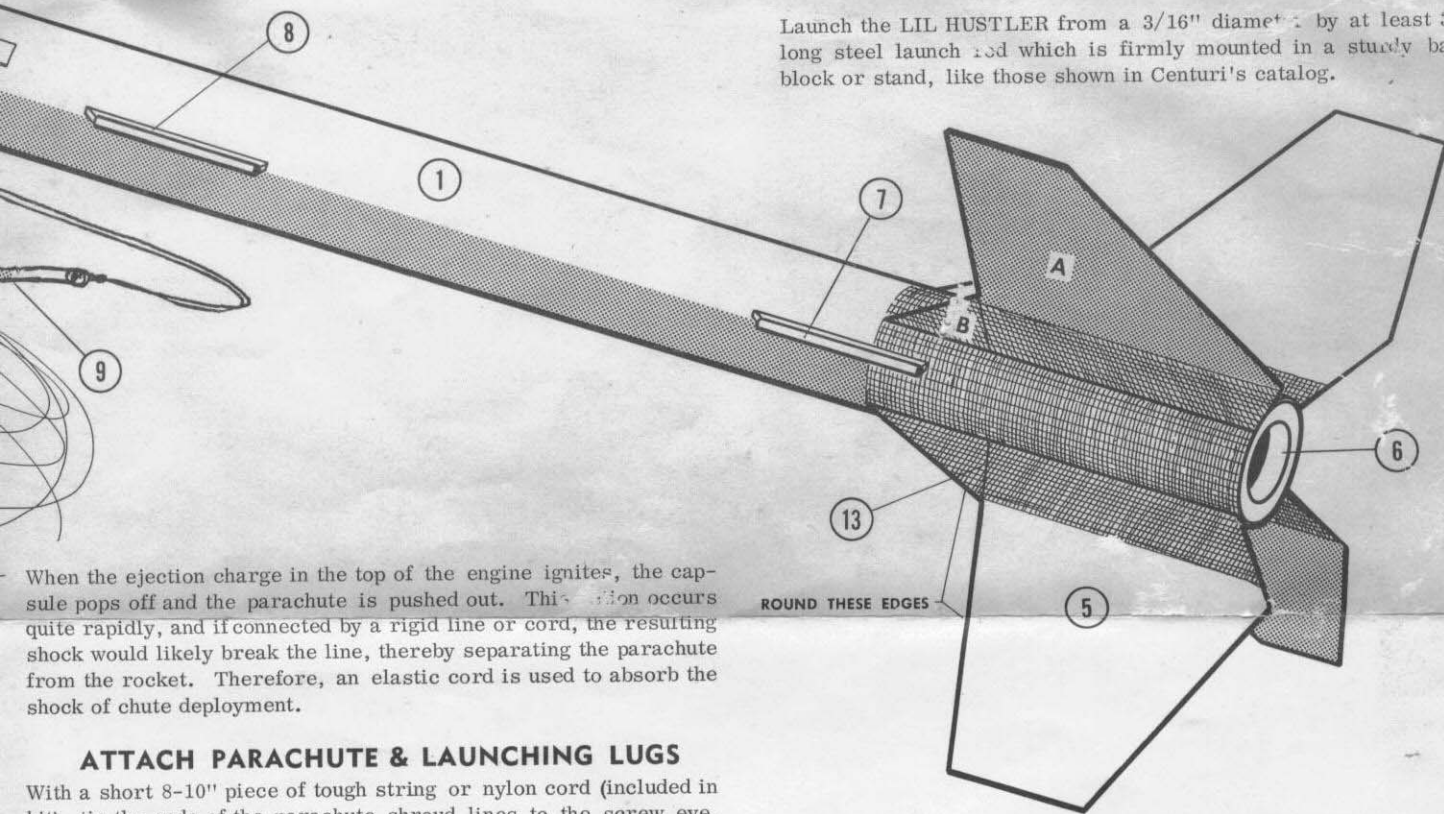
The LIL HUSTLER can be powered by any of the following MINI-MAX "PB" series engines, as listed in Centuri's catalog:

F 10-4

F 14-4

Complete mounting and ignition instructions are supplied with all MINI-MAX engines, and should be read carefully before launching the LIL HUSTLER.

Launch the LIL HUSTLER from a 3/16" diameter by at least 36" long steel launch rod which is firmly mounted in a sturdy base block or stand, like those shown in Centuri's catalog.



When the ejection charge in the top of the engine ignites, the capsule pops off and the parachute is pushed out. This action occurs quite rapidly, and if connected by a rigid line or cord, the resulting shock would likely break the line, thereby separating the parachute from the rocket. Therefore, an elastic cord is used to absorb the shock of chute deployment.

#### ATTACH PARACHUTE & LAUNCHING LUGS

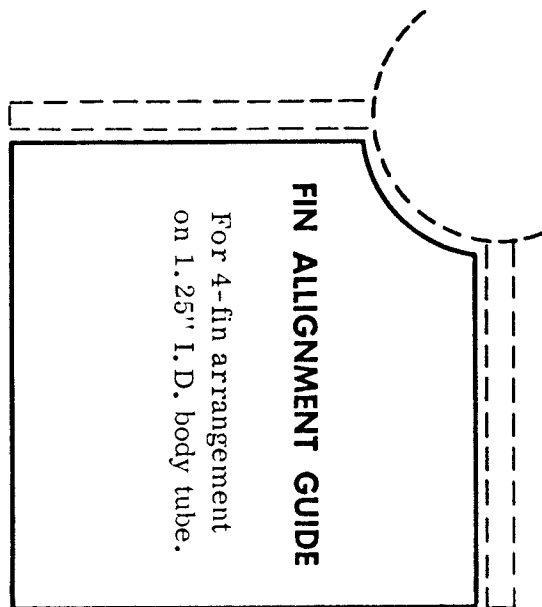
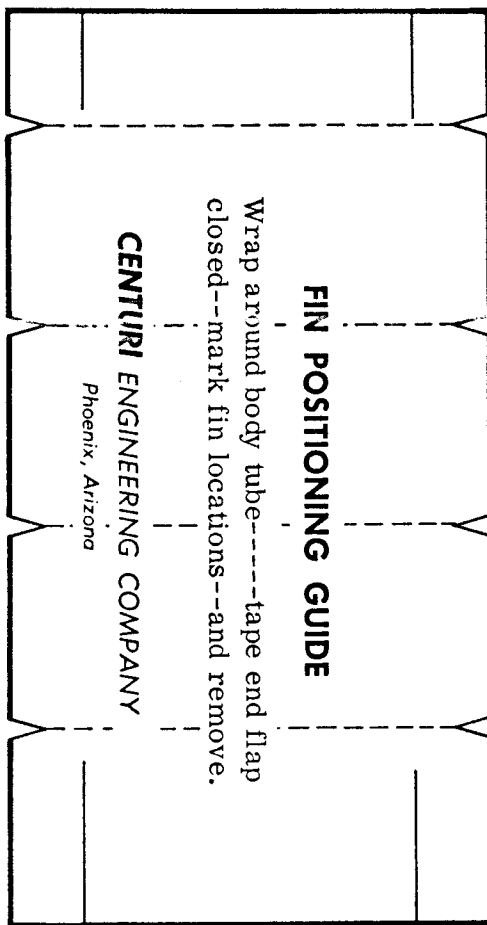
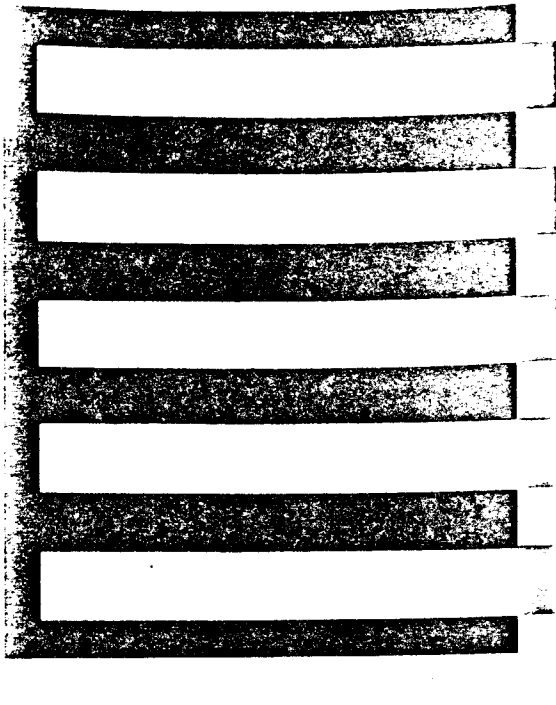
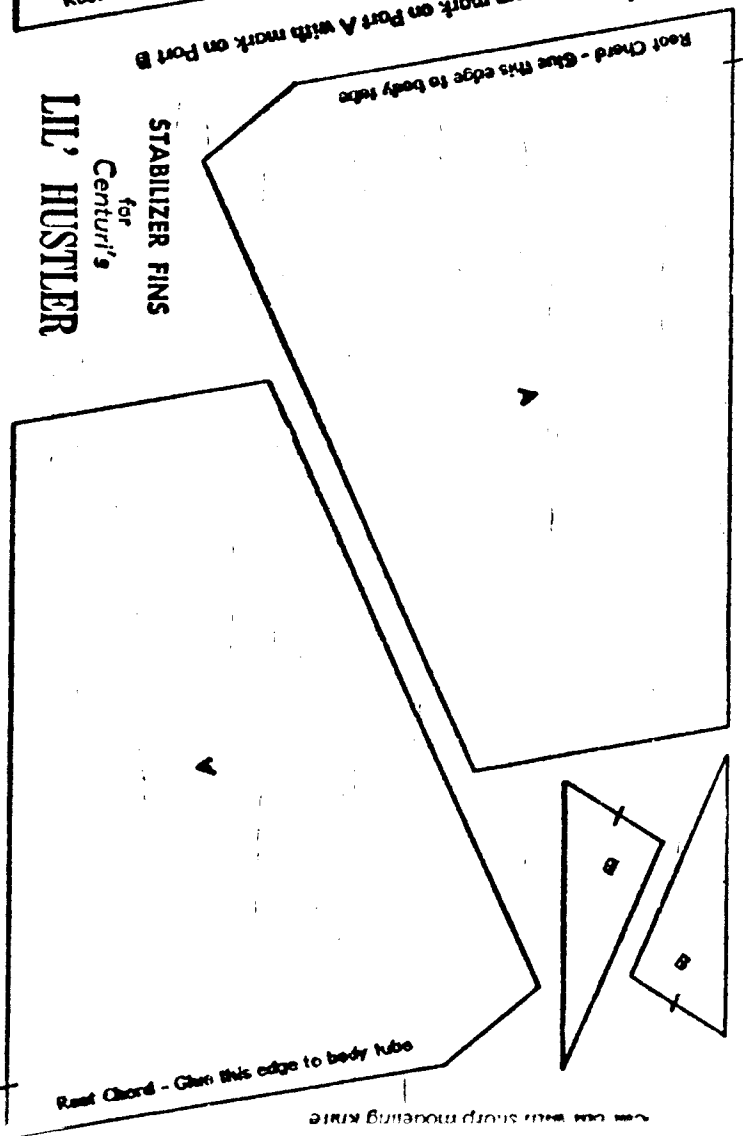
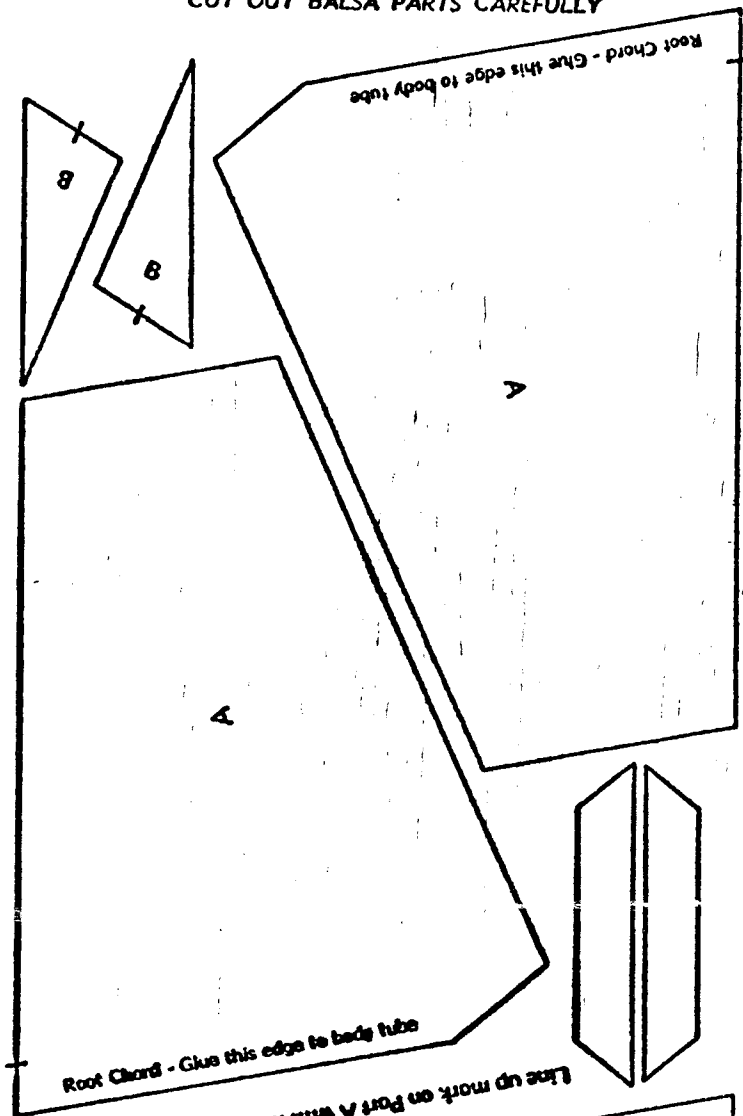
With a short 8-10" piece of tough string or nylon cord (included in kit), tie the ends of the parachute shroud lines to the screw eye, at the base of the capsule. Tie securely so the parachute won't break loose during recovery.

The two trapezoid shaped strips on the printed balsa sheet are launch lug "stand-offs". Glue each lug stand-off about 10" apart, in the position shown. To assure a straight lift-off from the launch rod, it is important that the lugs be lined up with the body tube. Before the glue has completely set, sight down the rocket, like a rifle sight, and line up the lug stand-offs. Glue lugs along stand-off edges, and before this glueing has completely set, insert the enclosed 3/16" dowel through both lugs and align with the axis of body tube.

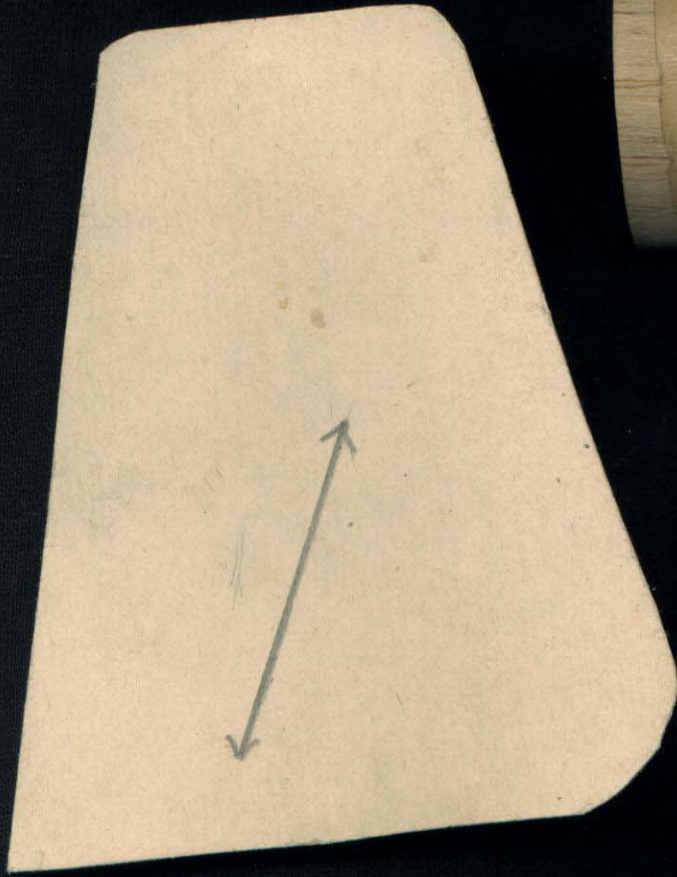
The LIL HUSTLER should be launched from the center of an open field measuring at least 600 feet on a side. **Do not** launch from a backyard or in populated areas. Select a cleared, unobstructed launch site away from dry grass or brush, houses, highways, and trees. Avoid launching in windy or overcast weather, as recovery under these conditions will be difficult, if not impossible. Always give a short countdown before launching to alert spectators and trackers. Upon ignition, the LIL HUSTLER will rise rapidly under power, eject its parachute upon reaching maximum altitude, and return safely to Earth to be launched again.

Root Chord = 2.3"

CUT OUT Balsa PARTS CAREFULLY







## **Centuri Lil' Hustler #KF-8 Parts Dimensions**

**Main Body Tube- (LT-125) Length = 15"; 1.25" ID, 1.34" OD\***

**Payload Section- (LBT-175) Length = 5-1/2"; 1.75" ID, 1.84" OD\***

**Transition Length = 2.125"**

**Smaller Diameter Shoulder Length = 1.15"**

**Larger Diameter Shoulder Length = 1.125"**

**Nosecone Length = 6.75"**