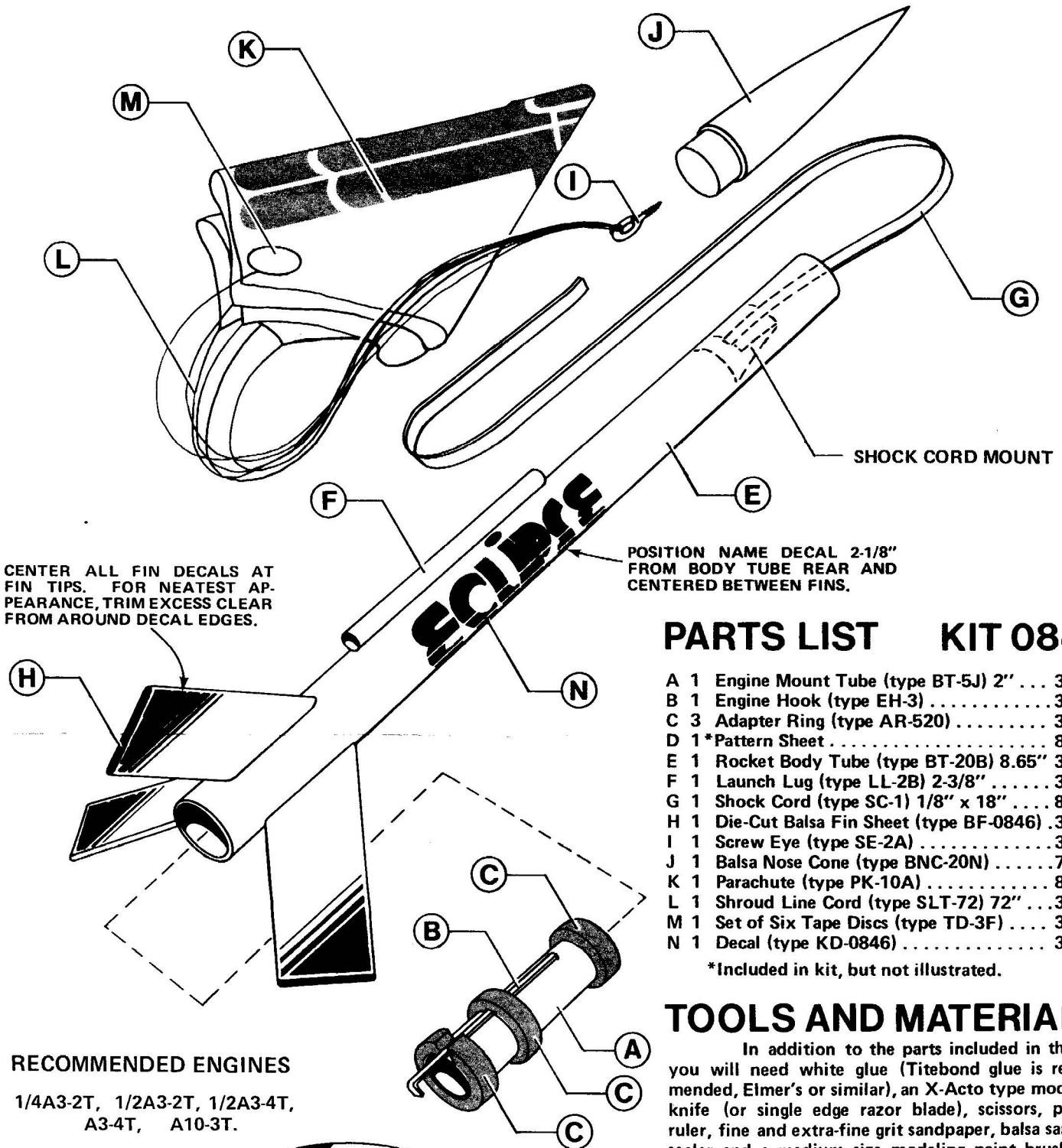




# ECLIPSE

## MINI-BRUTE SPORT MODEL

SKILL LEVEL 1 - Recommended for Beginner Rocketeers



CENTER ALL FIN DECALS AT FIN TIPS. FOR NEATEST APPEARANCE, TRIM EXCESS CLEAR FROM AROUND DECAL EDGES.

POSITION NAME DECAL 2-1/8" FROM BODY TUBE REAR AND CENTERED BETWEEN FINNS.

### PARTS LIST KIT 0846

|   |  |       |
|---|--|-------|
| A | 1 Engine Mount Tube (type BT-5J) 2" ...        | 30304 |
| B | 1 Engine Hook (type EH-3) .....                | 35026 |
| C | 3 Adapter Ring (type AR-520) .....             | 30162 |
| D | 1 *Pattern Sheet .....                         | 82235 |
| E | 1 Rocket Body Tube (type BT-20B) 8.65" .....   | 30320 |
| F | 1 Launch Lug (type LL-2B) 2-3/8" .....         | 38178 |
| G | 1 Shock Cord (type SC-1) 1/8" x 18" .....      | 85730 |
| H | 1 Die-Cut Balsa Fin Sheet (type BF-0846) ..... | 32261 |
| I | 1 Screw Eye (type SE-2A) .....                 | 38252 |
| J | 1 Balsa Nose Cone (type BNC-20N) .....         | 70236 |
| K | 1 Parachute (type PK-10A) .....                | 85562 |
| L | 1 Shroud Line Cord (type SLT-72) 72" ...       | 38237 |
| M | 1 Set of Six Tape Discs (type TD-3F) .....     | 38406 |
| N | 1 Decal (type KD-0846) .....                   | 37307 |

\*Included in kit, but not illustrated.

### TOOLS AND MATERIALS

In addition to the parts included in this kit you will need white glue (Titebond glue is recommended, Elmer's or similar), an X-Acto type modeling knife (or single edge razor blade), scissors, pencil, ruler, fine and extra-fine grit sandpaper, balsa sanding sealer and a medium size modeling paint brush. To paint your model we recommend gloss black enamel spray paint.

### RECOMMENDED ENGINES

1/4A3-2T, 1/2A3-2T, 1/2A3-4T,  
A3-4T, A10-3T.

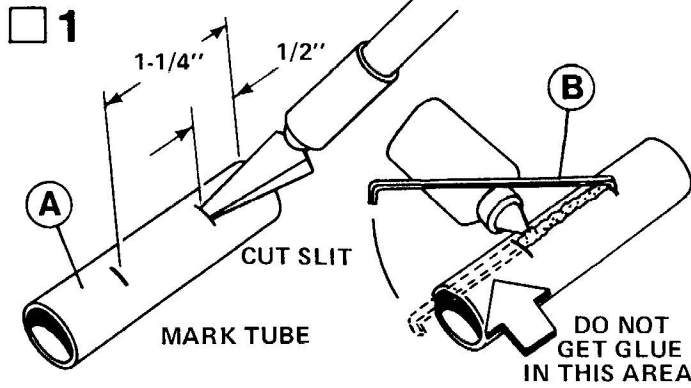


ESTES INDUSTRIES  
PENROSE, CO. 81240 USA

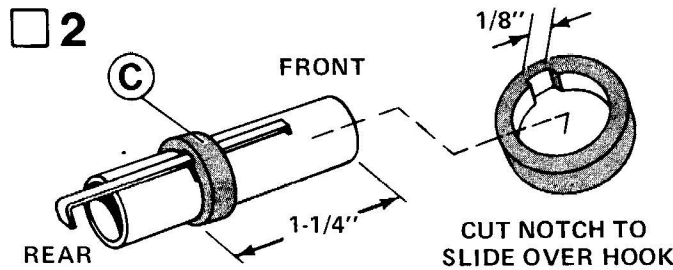
# BEFORE YOU START

Read all instructions before beginning work on your model. Make sure you have all parts and materials. When you are thoroughly familiar with the assembly procedure, begin construction. Check off each step as you complete it. In each step, test-fit the parts together before applying any glue. If some part doesn't fit properly, sand lightly or build up as needed for precision assembly.

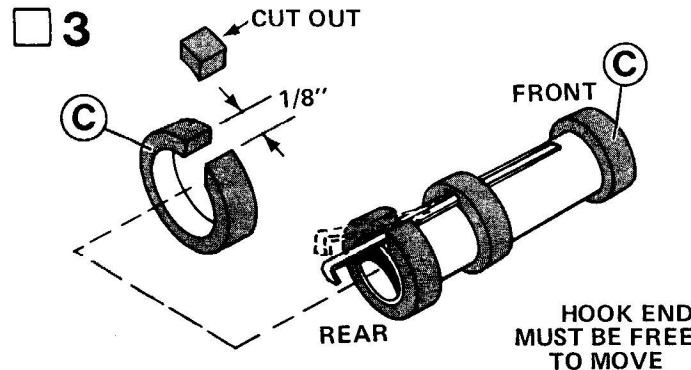
## ASSEMBLY INSTRUCTIONS



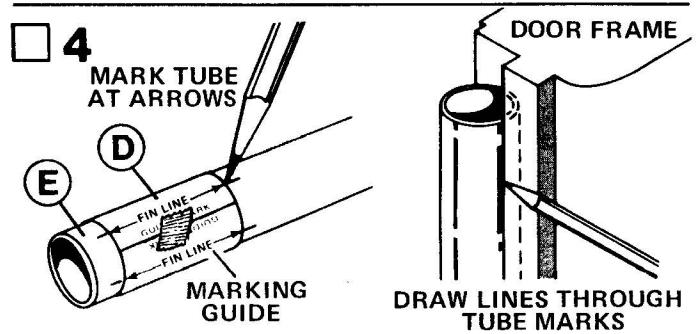
Mark the engine mount tube (part A) 1/2" and 1-1/4" from one end. Cut a 1/8" long slit in the tube at the 1/2" mark. Apply a line of glue between the two marks. Push one end of the engine hook (part B) into the slit as shown. Press the main part of the hook into the glue.



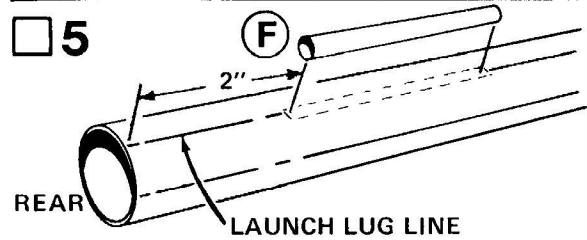
Cut a notch 1/8" wide and 1/32" deep on the inside of one adapter ring (part C). Apply a line of glue around the tube just forward of the 1-1/4" mark. Slide the notched ring onto the tube, over the engine hook and up to the 1-1/4" mark. Be sure to center the notch over the hook.



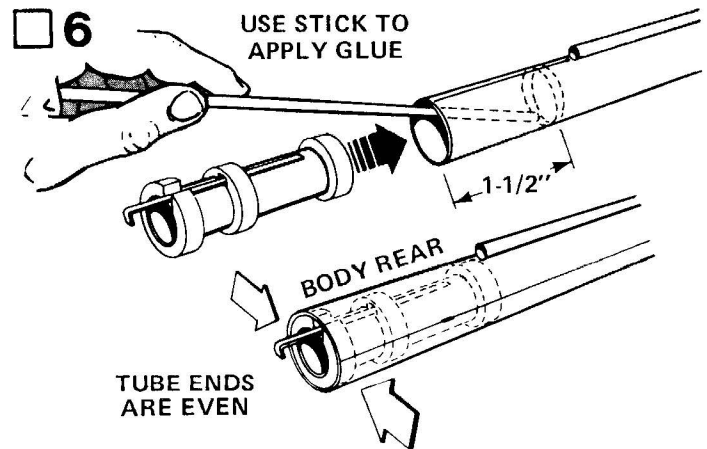
Glue a second adapter ring (part C) to the front end of the engine mount tube. Cut a 1/8" wide gap in the other adapter ring (part C). Glue this ring to the tube even with the rear end so the engine hook is centered in the gap. Do not get glue in the gap. The engine hook must be free to flex slightly as shown.



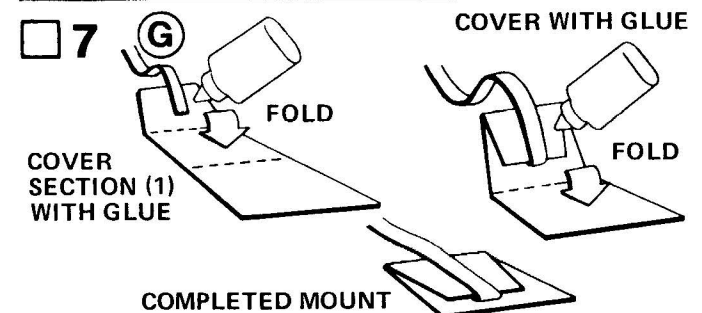
Cut out the body marking guide from the pattern sheet (part D). Wrap it around one end of the rocket body tube (part E). Match the printed guide marks and tape guide in place. Mark the tube at each arrow point. Remove the guide. Place the body tube against the inside edge of a door frame as shown. Draw a line about 2" long from the tube end through each pair of fin line marks. Draw a line about 6" long through the launch lug marks. Label the launch lug line. You may also use a ruler to connect the tube marks and draw the alignment lines.



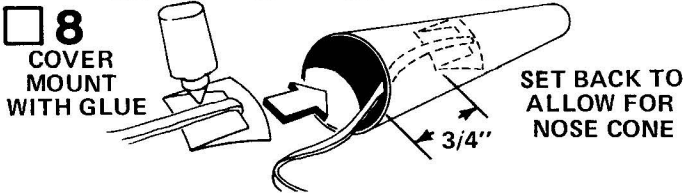
Glue the launch lug (part F) to the body tube. Center it on the alignment line 2" from the tube rear.



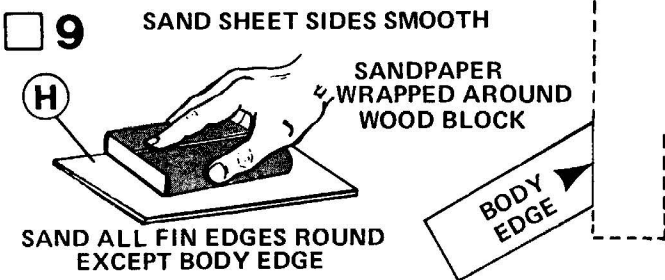
Smear a line of glue around the inside of the rear end of the body tube. The glue should be about 1-1/4" to 1-1/2" from the end of the tube. Push the engine mount unit in right away---but be sure the mount is turned so the hook will stick out of the end of the tube. Push the engine mount in with one smooth motion until the ends of the tubes are even. Position the engine mount so that the engine hook is centered between two fin alignment lines.



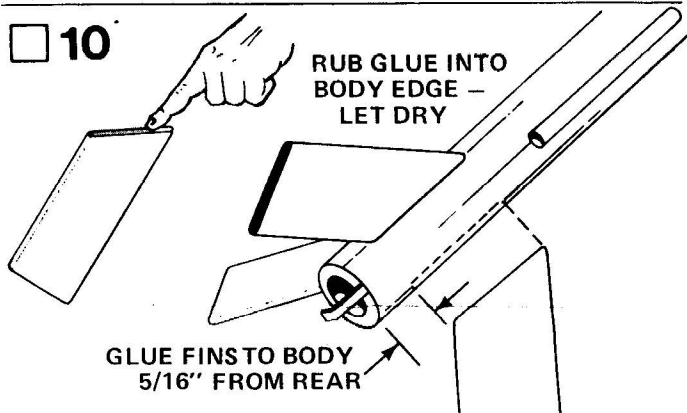
Cut out the shock cord mount from the pattern sheet. Crease it on the dotted lines by folding. Spread glue on the first section (1) and lay the end of the shock cord (part G) into the glue. Fold over and apply glue to the back of the first section and the exposed part of section (2). Lay the shock cord as shown and fold over again. Clamp the unit together with your fingers until the glue sets.



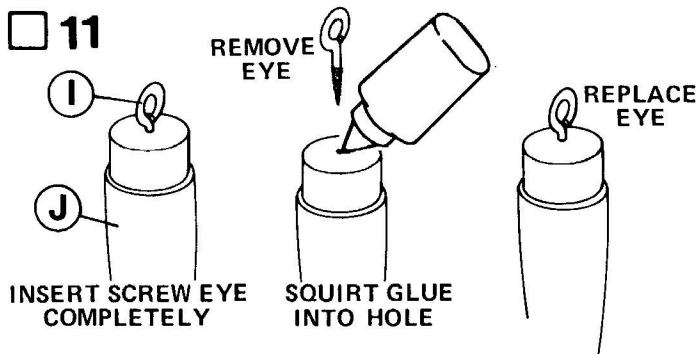
Smear glue over the back side of the shock cord mount as shown. Hold the mount so its wide end enters the tube first, and press it into place in the front of the body tube. Make sure the front of the mount is at least 3/4" from the tube end to allow for the nose cone. Hold the mount in place until the glue sets.



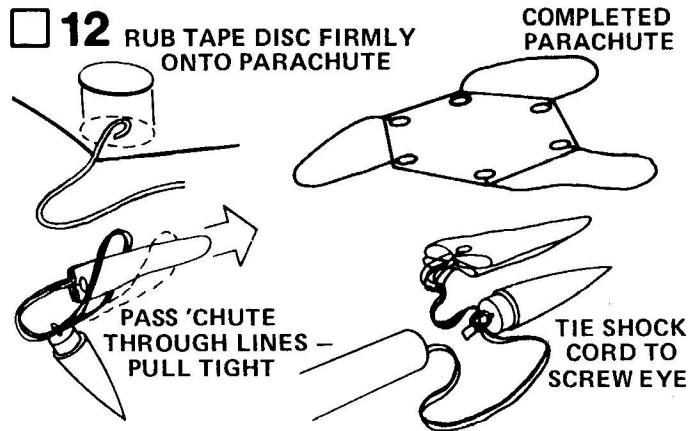
Fine-sand both sides of the balsa sheet (part H). Carefully remove the fins from the sheet using a sharp knife. Sand all fin edges round except the body edge (the edge which glues to the rocket body). The body edge of each fin must be square.



Rub a line of glue into the body edge of each fin and allow to dry. Glue the fins to the body on the alignment lines. The rear of each fin should be 5/16" from the rear of the body tube. Adjust the fins so they stick straight out from the body. Do not set the rocket on its fins while the glue is drying.



Insert the screw eye (part I) into the rear of the nose cone (part J). Remove the screw eye and squirt a small amount of glue into the hole. Re-insert the screw eye.

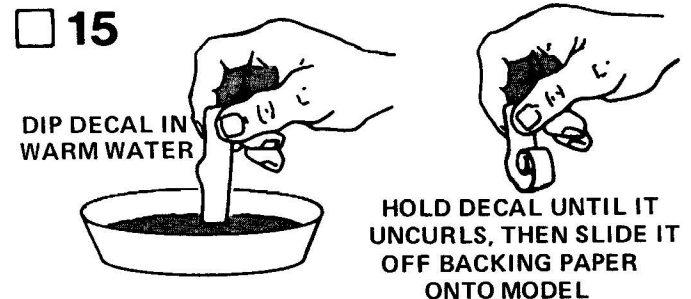


Cut out the parachute (part K) on its edge lines. Cut three 22" lengths of shroud line (part L). Attach line ends to the top of the parachute with tape discs (part M) as shown. Pass the shroud line loops through the screw eye on the nose cone. Pass the parachute through the loop ends and pull the lines tight against the screw eye. "Set" the knot with a drop of glue. Tie the free end of the shock cord to the screw eye.



When the fin joints have dried, apply a glue reinforcement (usually called "glue fillet") to each joint. Holding the model level, apply a narrow line of glue to both sides of each fin joint. Smooth out the glue with your finger. **IMPORTANT-** Keep the model level until the glue dries.

When all glue on the outside of the body is dry, prepare the balsa parts of the model for painting. Apply at least two coats of sanding sealer to all exposed balsa surfaces. Let dry and sand thoroughly with extra-fine sandpaper after each coat. Do this until the tiny holes in the wood are filled and everything looks and feels smooth. Paint the model with two coats of gloss black enamel. Let the paint dry overnight.



When all paint is completely dry, apply decals (part N) in the positions shown on page 1. To apply the decals, cut out a decal section, dip it in lukewarm water for 10-20 seconds and hold it until it starts to uncurl. Slip the decal off the backing sheet and onto your model. Blot excess water away with a damp cloth. When all decals are in place, let the model dry overnight. After drying, apply a coat of clear spray to protect the decals.

# LAUNCHING COMPONENTS

To launch your rocket you will need the following items:

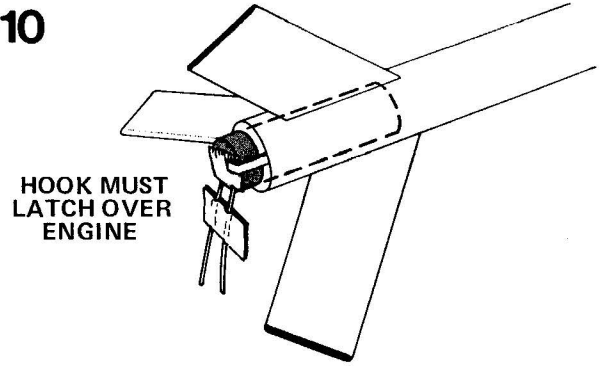
- An Estes model rocket launching system.
- Flameproof recovery wadding (Estes catalog no. 2274).
- Estes 1/4A3-2T, 1/2A3-2T, 1/2A3-4T, A3-4T, or A10-3T model rocket engines. Use a 1/2A3-2T for the first flight.

Be sure to follow the HIAA-NAR\* Model Rocketry Safety Code when carrying out your model rocketry activities.

\*HIAA-NAR – Hobby Industry Association of America  
 – National Association of Rocketry

Select an engine and install an igniter as directed in the engine instructions. Use a 1/2A3-2T engine for your first flight.

## T-10

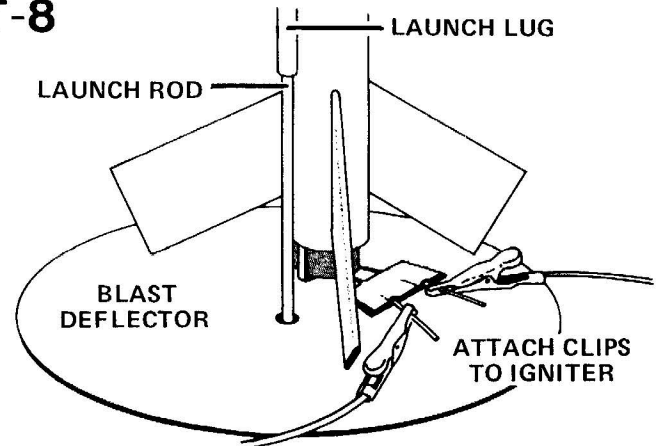


Insert engine into rocket engine mount. Engine hook must latch securely over end of engine.

## T-9

Disarm the launch panel-- **REMOVE SAFETY KEY!**

## T-8



Slide launch rod through rocket launch lug and place rocket on launching pad. Make sure the rocket slides freely on the launch rod. Clean the micro-clips and attach them to the igniter wires. Arrange the clips so they do not touch each other or the metal blast deflector. Attach clips as close to engine as possible.

## T-7

Clear the launch area, alert recovery crew and trackers. Check for low flying aircraft and unauthorized persons in the recovery area.

## T-6

Arm the launch panel--- **INSERT SAFETY KEY.**

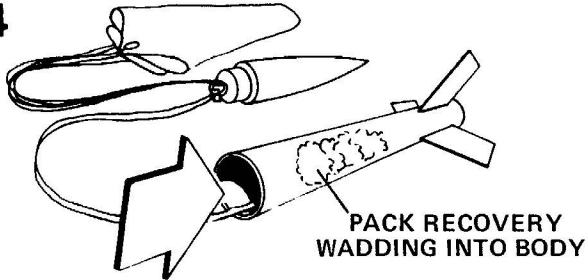
**-5-4-3-2-1-LAUNCH!!**

## MISFIRE PROCEDURE

Occasionally the igniter will heat and burn into two pieces without igniting the engine. This is almost always caused by a failure to install it correctly. **REMOVE SAFETY KEY** from launch panel, remove the model, clean the igniter residue from the nozzle and install a new igniter. Follow the launching procedure again.

# COUNTDOWN CHECKLIST

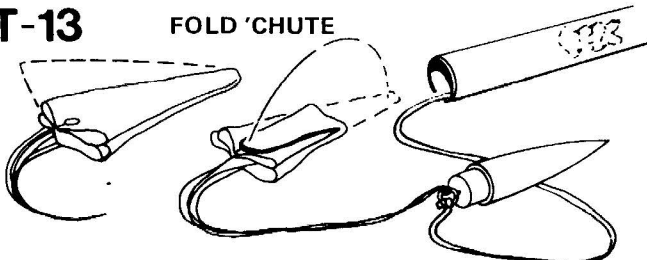
## T-14



Pack two or three squares of loosely crumpled recovery wadding into the rocket body tube.

## T-13

FOLD 'CHUTE



PACK NEATLY INTO BODY

Fold the parachute into a triangular shape. Fold the 'chute in half and insert into rocket body.

NOTE: DO NOT pack parachute until you are actually ready to launch. For maximum parachute reliability, lightly dust the 'chute with ordinary talcum powder before each flight, especially in cold weather.

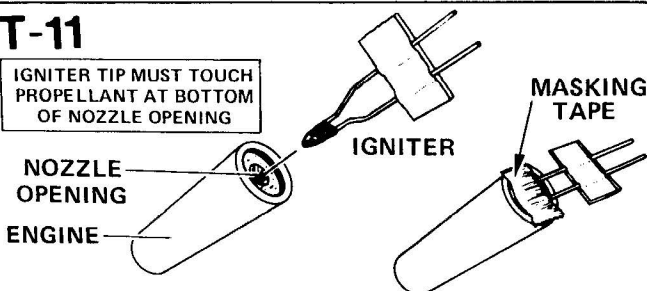
## T-12

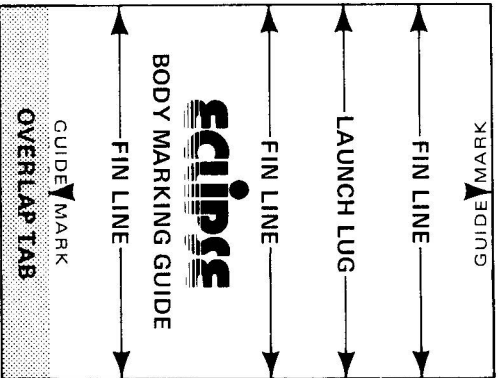
Pack parachute, shroud lines and shock cord neatly into rocket body. Slide nose cone into place.

Nose cone should separate easily from rocket body tube, but should not be extremely loose. If fit is too tight, sand inside of body tube and shoulder of nose cone with fine sandpaper. If fit is too loose, add a wrapping of transparent tape or masking tape to the shoulder of the nose cone.

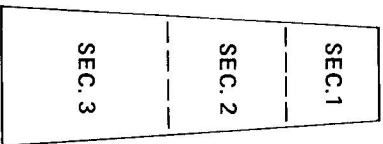
## T-11

IGNITER TIP MUST TOUCH PROPELLANT AT BOTTOM OF NOZZLE OPENING





**SHOCK CORD  
MOUNT**

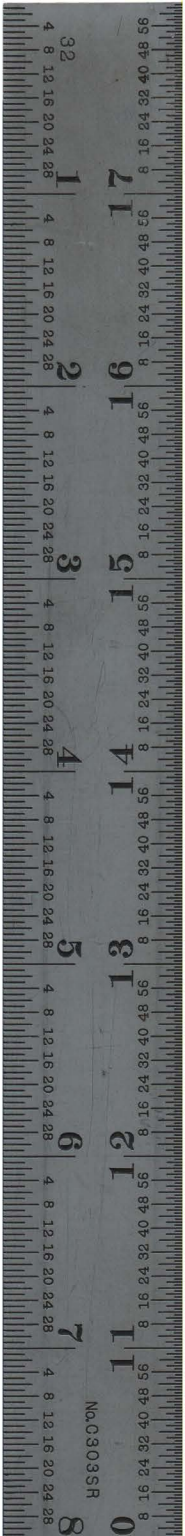


CUT OUT ON OUTLINES

ESTES INDUSTRIES KIT 0846 ECLIPSE  
PATTERN SHEET PN 82235

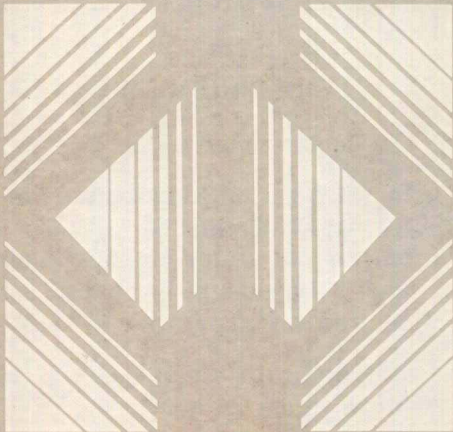


3/32"



NO. C303SR





**ESTES**

**ESTES INDUSTRIES**

**PN 37307**





## PARTS LIST KIT NO. 0846 - Eclipse

| Quantity | Description       | Type    | Number      | Detail1     | Detail2    | Detail3      | Detail4       | Comment       |
|----------|-------------------|---------|-------------|-------------|------------|--------------|---------------|---------------|
| 1        | PAPER BODY TUBE   | BT-5J   | 30304       | 2" long     | 0.515" ID  | 0.541" OD    | 0.013" wall   |               |
| 1        | ENGINE HOLDER     | EH-3    | 3143        | 1.8" long   | .125" wide | .025" thick  |               | Mini          |
| 3        | CENTERING RINGS   | AR-520  | 30162       |             |            |              | BT-5 in BT-20 |               |
| 1        | Pattern Sheet     | N/A     | 82235       |             |            |              |               | Scan          |
| 1        | PAPER BODY TUBE   | BT-20B  | 30320       | 8.65" long  | 0.710" ID  | 0.736" OD    | 0.013" wall   |               |
| 1        | LAUNCH LUG        | LL-2B   | 2323        | 5/32" ID    | 1/8" rod   | 2-3/8" long  |               |               |
| 1        | Shock Cord        | SC-1    | 85730/38367 | 18 " long   | 1/8" wide  |              |               | Rubber        |
| 1        | BALSA FIN STOCK   | BFS-30  | 3168        | 3/32" thick | 3" wide    | 9" long      | 0.09375       | BF-0846/32261 |
| 1        | Screw Eye (Small) | SE-2A   | 38252       | 3/4" long   |            |              |               |               |
| 1        | BALSA NOSE CONE   | BNC-20N | 70236       | 2.75" long  | .736" dia. | .5" shoulder |               |               |
| 1        | Parachute         | PK-10   | 85562       | 10" dia.    |            |              |               |               |
| 1        | Shroud Line       | SLT-72  | 38237       | 72"         |            |              |               |               |
| 1        | Tape Disc         | TD-3F   | 38406       | 1/2" dia.   |            |              |               | 6x            |
| 1        | Decal             | KD-0846 | 37307       | 3"          | 3.75"      | Red/White    | Water Slide   | Scan          |

**NEW!**

# SCIMITAR



- Great Sport Flying Performance
- Economical Mini-Engine Power
- 2-Color Decal
- One-Cut Balsa Fins



## SKILL LEVEL

- |            |                |             |            |          |
|------------|----------------|-------------|------------|----------|
| 1-Beginner | 2-Intermediate | 3-Craftsman | 4-Advanced | 5-Expert |
|------------|----------------|-------------|------------|----------|

## SPECIFICATIONS

Length 12.1" (30.73 cm)  
 Body Dia. 0.736" (18.69 mm)

Weight 3.11 oz. (88.5 g)  
 10" Parachute Recovery

RECOMMENDED ENGINES  
 U4A3-2T U4A3-3T U4A3-4T  
 A3-4T A19-2T  
 Use U4A3-2T for First Flight.

This is a hobby kit requiring assembly. Launch system, engine, glue, and finishing supplies are not included.

# 0846



ESTES INDUSTRIES  
 P.O. BOX 1208  
 LONGMONT, CO 80501